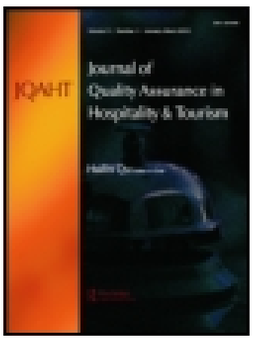

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Modeling the Multi-dimensional Facets of Perceived Risk in Purchasing Travel Online: A Generational Analysis

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ABSTRACT

This paper examines the differences in consumers' risk perception when intending to purchase travel online across Millennials and Baby Boomers. The proposed research model was tested using structural equation modeling. The results show that perceived financial risk, perceived risk privacy, and psychological risk are significant for both Millennials and Baby Boomers. Overall risk was found to have a stronger negative impact on consumers' intention to purchase travel online. Results from this study will be helpful to travel businesses to determine which cohorts are averse to different types of risk and reduce consumers' risk perception and increase online purchase intention.

KEYWORDS

Generational cohort theory; perceived risk; millennials; baby Boomers; travel; Australia

Introduction

The internet has provided great opportunities for success for travel companies (Mohseni et al., 2018). Despite the increase in the number of internet users and online purchases (Amin et al., 2015; Rezaei, 2015), the slow growth in consumers adopting online shopping is surprising and an issue of concern among businesses (Akhter, 2012), especially in the tourism industry (Law et al., 2015; Leung et al., 2015; Li & Chang, 2016). Researchers have recognized the significance of assessing different generations in the tourism industry (Beldona et al., 2009; C.-F. Chen & Chou, 2019). Mazaheri et al. (2020) and Lim (2018) have also called for the intergenerational examination of theories and models particularly in the technology and information systems context due to the differences in the adoption rate of generational cohorts. Despite this, there has been very little research carried out among consumers' perceptions of different cohorts in the tourism context (Shulga et al., 2018). The majority of generation studies in the tourism literature have focused on a specific generation, such as only Baby Boomers or Millennials (Canavan, 2018; Xu & Pratt, 2018), while few studies have compared the behavior between generations (Gao et al., 2018; Qiu et al., 2018). Very little research has been carried out that differentiates generational cohorts' online shopping perceptions, decision-making, and behavior (Herrando et al., 2019; Lissitsa & Kol, 2016; Shulga et al., 2018). Limited studies

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have been conducted on the impact of the perceived risk on Millennials' and Baby Boomers' overall risk perceptions in the tourism context.

Millennials and Baby Boomers are interesting cohorts in the online context as they represent both "digital natives" and "digital immigrants", respectively (Jones et al., 2010). According to Hult et al. (2019), digital natives, who are the first generation to grow up with the internet, tend to be more engaged with technology and more comfortable when it comes to aggregating information from multiple sources (e.g., websites, online search, and social media). Therefore, they can better learn and use internet technology than digital immigrants (Prensky, 2001). Millennials also have a great potential to contribute to the transformation of the global tourism industry due to their altruistic behavior, search for experience, a high degree of permanent connectivity, and strong digital skills (Navío-Marco et al., 2018). Research on Millennials' purchase behavior is still scarce (Ramsay et al., 2017). Digital immigrants only learned to use this technology in adulthood. The investigation of these two cohorts for this study is further justified as both have considerable purchasing power (Beauchamp & Barnes, 2015). As such, it is valuable for marketers to understand their risk perceptions to capture more sales (Hult et al., 2019).

Building on the premise that shopping online is perceived to be riskier than traditional shopping (Changchit et al., 2019; Hult et al., 2019), this study will use perceived risk facets proposed by Featherman and Pavlou (2003) (perceived financial risk, perceived time risk, perceived social risk, perceived performance risk, perceived privacy risk, and perceived psychological risk) to understand differences in consumers' risk perception across Millennials and Baby Boomers. Cunningham (1967) was the first to decompose the perceived risk variable into sub-facets. Perceived risk is a multifaceted concept because it applies to various aspects of an individual's behavior, presenting some potential negative outcomes and uncertainty. This study will help gain insights into which types of risk are salient for Millennials and Baby Boomers in online travel shopping.

Literature review

Generational cohorts

As age can impact consumers' attitudes, interests, and shopping behavior (Parment, 2013; San-Martín et al., 2015), marketers should not approach individuals as a whole. Segmenting consumers enables marketers to focus on specific risk facets that most impact consumers' perceived risk perceptions when purchasing online. Market segmentation based on generation has been considered more efficient than segmenting simply by age (Lissitsa & Kol, 2016; Schewe et al., 2000).

Ronald (1977) was the first to propose the generational cohort theory to divide the population into segments. The theory proposes that within a generational cohort, individuals share distinctive sets of attitudes, beliefs, behaviors, and values that are formed by significant economic, social, and political events that occurred during the early stages of their life cycle (Ronald, 1977). Generational cohort theory acknowledges the long-term impacts of unique historical events in individuals' lives within a particular generation, which impacts the attitudes and shared values that remain stable throughout an individual's life (Chung et al., 2016). Generational cohort theory also offers insights into information systems adoption as well. This is of particular use in information systems research (S. Sharma et al., 2020).

Few studies have examined differences in consumer purchase behavior across generational cohorts in tourism studies (Qiu et al., 2018; Tang & Lam, 2017; Zuo & Lai, 2020). The majority of generation studies in the tourism literature have focused on a specific generation, such as only Baby Bombers or Millennials (Canavan, 2018; Xu & Pratt, 2018). There is a call for a deeper understanding of generational cohorts and their impact on the tourism industry (Bowen & Chen McCain, 2015; Shulga et al., 2018). The segmentation of customers through generational cohort analysis allows for the examination of preferences, behavior, and attitude (S. Sharma et al., 2020). S. Sharma et al. (2020) highlight the importance of studying Millennials and Baby Boomers in technology adoption research as they include both "digital natives" and "digital immigrants", respectively. Jones et al. (2010) have made a similar recommendation.

Perceived risk theory

The theory of perceived risk has been used to explain consumer behavior regarding decision-making (Park & Tussyadiah, 2017). Consumers are motivated to avoid risk rather than maximize utility when making a purchase (Mitchell, 1999). As e-commerce is becoming more and more popular, the definition of perceived risk is also changing. Today, perceived risk in online transactions comprises financial risk, time risk, social risk, psychological risk, product risk, performance risk, and physical risk (Deng & Ritchie, 2018; Olya & Al-ansi, 2018; J. Yang et al., 2016). Perceived risk is the belief that a consumer has about the potential negative outcome and uncertainty that can arise from engaging in online transactions (H.-W. Kim et al., 2007). It plays a significant role in tourism, influencing consumers' decision to purchase travel online.

Dimensions of perceived risk

Perceived risk is theorized as a multidimensional construct (Grewal et al., 1994; Mitra et al., 1999). An overall risk assessment is also theorized (Dowling & Staelin, 1994; Stone & Grønhaug, 1993). Looking at the dimensions of perceived risk, Cunningham (1967) was the first to divide risk into two

significant categories: psychological risk and performance risk. Then, perceived risk was divided into six dimensions by Roselius (1971): financial risk, performance risk, opportunity/time risk (physical) safety risk, performance-based dimensions, and separate social risk and psychological risk dimensions were created. Since then, a significant body of literature on consumer behavior (Jacoby & Kaplan, 1972; Stone & Barry Mason, 1995; Stone & Grønhaug, 1993) and recent research on information systems (Farivar et al., 2018; Featherman & Pavlou, 2003) consistently show that individuals' risk perceptions generally have six dimensions.

Previous studies seeking relevant theoretical models have usually included only some of the above facets (Laroche et al., 2004). In the context of e-commerce, Featherman and Pavlou (2003) recommended replacing safety risk (measuring threats to consumer health) with privacy risk. Studies carried out previously have identified privacy risk as an essential factor in internet transactions (Cranor et al., 2006) and place greater importance on similar constructs as this describes internet users' information privacy concerns (IUIPC) (Malhotra et al., 2004). Privacy risk looks at the concerns regarding the control, collection, and usage of personal information online. Therefore, in addition to the above risks, privacy risk will also be considered relevant for this study as it is an increasingly prevalent issue in online shopping (Featherman & Pavlou, 2003; Zhu et al., 2017). The review of the literature shows that previous studies have conceptualized perceived risk as a single-item construct (Chang & Chao, 2018; Huang et al., 2020; M.-Y. Chen & Teng, 2013). Researchers have called for studies to explore risk as a multidimensional concept in the context of tourism (S. Sharma et al., 2020). This would allow for a more detailed exploration of the specific types of risk factors affecting online travel purchases.

As suggested by Featherman and Pavlou (2003), this study will conceptualize online travel purchases' perceived risk into six facets, namely, perceived financial risk, perceived social risk, perceived performance risk, perceived privacy risk, perceived psychological risk, and perceived time risk. The multifaceted perceived risk will be then compared across two distinct generational cohorts (Millennials and Baby Boomers) to ascertain how the risk factors vary across generations.

Conceptual framework and hypotheses

Financial risk

Financial risk is the "potential monetary outlay associated with the initial purchase price as well as the subsequent maintenance cost of the product" (Grewal et al., 1994). This risk refers to the consumers' concerns about the amount of money wasted if the good or service is not delivered or the money

they risk losing if the product does not perform as expected. This can be due to the purchase not being delivered and dubious payment modalities or fraud. Financial risk concerns consumers more in online transactions than in-store shopping due to the absence of face-to-face interaction between retailers and consumers (Bashir et al., 2018; Li et al., 2017). For example, consumers fear they could become victims of credit card fraud. Financial risk is also attributed to the lack of trust in e-tailer (Forsythe et al., 2006). The study conducted by Marriott and Williams (2018) found that financial risk is the most significant antecedent of consumers' overall risk perception. This finding has been supported by other studies such as Hubert et al. (2017) and Featherman and Pavlou (2003).

Time risk

Despite online shopping providing consumers with a high level of convenience, time risk remains an issue of concern. Time risk refers to the fear of the amount of time the consumer may waste with purchasing online, which increases time pressure (Shimp & Bearden, 1982). This risk includes the uncertainty of waiting time for the goods to be delivered. For travelers, this will mean that the consumer not only loses time and effort, but there is also a loss of convenience when making a purchasing decision (Park & Tussyadiah, 2017). According to a study conducted by Thakur and Srivastava (2015), time risk is a significant factor impacting online purchase intention. These findings were also supported by Q. Yang et al. (2015) among Chinese consumers.

Performance risk

Performance risk is the consequence and uncertainty that a product will not function to the expected level (Shimp & Bearden, 1982). It arises when products do not work as described or only work for a limited time (Horton, 1976). This risk is considered much higher in the online environment as the geographical distance prevents the consumer from accurately judging the product (Pappas, 2016). Consumers cannot physically touch or interact with the product, which in turn affects their ability to judge the quality of products (Forsythe & Shi, 2003). This may result in the product not meeting the consumer's expectations; thus, performance risk becomes much more prominent. According to the literature, performance risk is also the fear of malfunctioning or deficiencies in the website whereby there is a system breakdown when the transaction is being executed, which results in substantial losses (Hubert et al., 2017; Kuisma et al., 2007; Lee, 2009). According to a study carried out by Marriott and Williams (2018), performance risk significantly impacts consumers' overall risk perception. Similar findings were found by Bezes (2016) and Hubert et al. (2017).

Privacy risk

Consumers desire to control all aspects of personal data collection (Featherman & Pavlou, 2003; Malhotra et al., 2004). If the consumers' private data are being collected and registered without their consent, this becomes an issue of concern (Baruh et al., 2017; Hanafizadeh & Khedmatgozar, 2012; Zhu et al., 2017). Privacy concern is the concern that there is a possibility "that online businesses might misuse personal information hence invading a consumer's privacy" (Nyshadham, 2000). In the study conducted by Q. Yang et al. (2015), it was found that privacy risk significantly influences consumers' intention to purchase online. Similar results were found by Thakur and Srivastava (2015).

Social risk

Social risk relates to the judgment of third parties, such as relatives or friends, who may consider that the consumer has made an incorrect choice in the product attribute (Cano & Salzberger, 2017), a particular supplier (Pappas, 2016), or in the decision to purchase a product itself (Holzmann & Jørgensen, 2001). It refers to the consumer's concern about the loss of social position and negative attitude of third parties in case of errors and fraud in online shopping (Al-Somali et al., 2009; Farivar et al., 2017). The consumer expects the social group to ridicule or disparage them in the event of an unfavorable outcome (Cano & Salzberger, 2017; Chiang & Chang, 2018).

Psychological risk

Psychological risk is defined as the "possibility of the product malfunctioning and not performing as it was designed and advertised and therefore failing to deliver the desired benefits" (Grewal et al., 1994). It refers to the risk that the use of the internet to purchase travel will negatively influence the travelers' self-perception or peace of mind (Park & Tussyadiah, 2017). Consumers who lack experience using the internet are more likely to fear making the wrong choices and be subjected to mental discomfort (Bezes, 2016; Hong & Cha, 2013). According to Hubert et al. (2017), when consumers gain more experience, they develop more perceived control as they feel they can omit or control associated risks. Marriott and Williams (2018) found that perceived psychological risk significantly contributes to consumer overall risk perception. Therefore, based on the discussion of the above literature, the following hypotheses are proposed:

H1: Perceived financial risk has a direct positive influence on consumers' overall risk perception when intending to purchase travel online.

H2: Perceived time risk has a direct positive influence on consumers' overall risk perception when intending to purchase travel online.

H3: Perceived social risk has a direct positive influence on consumers' overall risk perception when intending to purchase travel online.

H4: Perceived performance risk has a direct positive influence on consumers' overall risk perception when intending to purchase travel online.

H5: Perceived privacy risk has a direct positive influence on consumers' overall risk perception when intending to purchase travel online.

H6: Perceived psychological risk has a direct positive influence on consumers' overall risk perception when intending to purchase travel online.

Behavioral intention

Perceived risk is the negative consequences resulting from uncertainty felt by an individual when deciding to use a new product or service (Bauer & Cox, 1967). Customers are often reluctant to engage in online transactions that are perceived to involve a high degree of uncertainty (risk) (Hoffman et al., 1999). Thus, perceived risk has been theorized as the main barrier to individuals' adoption of online transactions. The monetary nature of such transactions has also contributed to high levels of skepticism by consumers.

Studies have looked at the impact of perceived risk on behavioral intention in the context of internet banking and social media (Hanafizadeh & Khedmatgozar, 2012; Khedmatgozar & Shahnazi, 2018; R. Sharma et al., 2020). Therefore, it is hypothesized that:

H7: Perceived overall risk will have a negative effect on consumers' intention to purchase travel online.

Research methods

To address the hypotheses of this study, a quantitative research approach was adopted. Other researchers have employed a similar research methodology in this context (Kruger & Saayman, 2015; Kucukusta et al., 2015).

Survey instrument

The survey instrument comprised two broad sections. The first section contained a standard set of demographic questions, including gender, age, education level, and income. The second section contained the variable items for the

study. The scales for perceived financial risk, time risk, social risk, performance risk, privacy risk, psychological risk, and overall risk were adopted from Stone and Grønhaug (1993). The scale to measure perceived social risk was similar to the scale used by Cocosila and Turel (2016), while privacy risk was adopted from D. J. Kim et al. (2008).

These items were all asked on a 5-point Likert scale where '"1′ is Strongly Disagree, and '"5′ is Strongly Agree. Before carrying out the main survey, the questionnaire was piloted with 50 respondents. The pilot study resulted in some minor improvements in wording being made to several statements to enhance the readability of the items in the survey. The pilot tested questionnaires were not part of the final data set. This study is a part of a large study conducted on online travel behavior.

Data collection and sample

An online survey was conducted in Australia in June 2019. A professional data collection firm was engaged to collect data for this study using an online survey. This data collection method is extensively used in the marketing literature (Dwivedi et al., 2016; Johnson et al., 2016; Ulvnes & Solberg, 2016). The firm collected data through a consumer panel for the final survey. Data firms maintain extensive data sets of different respondents' categories, which they use as their sample frame. To participate, respondents were required to meet the following screening criteria: 1) be an Australian citizen, 2) to be between 21–34 or 51–69 years of age. The data collection agency also ensured that the age and gender factors for the sample were representative of Australia's population. The main survey received a total of 522 responses. Of this, 518 were filled out (N= 262, N = 256).

The demographic profiles of the subsets are presented in Table 1. There were more male respondents for the Millennials sample, while female respondents were higher for Baby Boomers' sample. Respondents in both cohorts were well educated with above-average income. These characteristics are common in online survey methodologies (Duffy et al., 2005).

Results

Data analysis

To operationalize the conceptual framework in Figure 1 and test the hypotheses proposed in the literature review section using structural equation modeling, confirmatory factor analysis was undertaken using AMOS 24. This is similar to other studies of this kind (Palau-Saumell et al., 2016; Song et al., 2017).

Table 1. Respondent Profile of the Samples.

	Millennials	Baby Boomers
N	262	256
Gender		
Female	40.5%	59.0%
Male	58.4%	41.0%
Rather not say	0.4%	
Education		
Primary school education	0.8%	0.4%
Secondary School	13.4%	27.0%
Diploma/Certificate	25.2%	37.9%
Bachelors education	37.4%	22.3%
Postgraduate education	21.8%	12.9%
Others	0.8%	
Income		
I do not earn a fixed income	10.7%	8.6%
Under 15,000	4.2%	4.7%
15,000-29,999	10.3%	19.1%
30,000- 44,999	8.8%	11.3%
45,000- 59,999	15.6%	14.8%
60,000- 74,999	13.0%	9.4%
75,000- 89,999	9.2%	5.5%
90,000 +	15.3%	11.3%
Rather not say	13.0%	15.2%

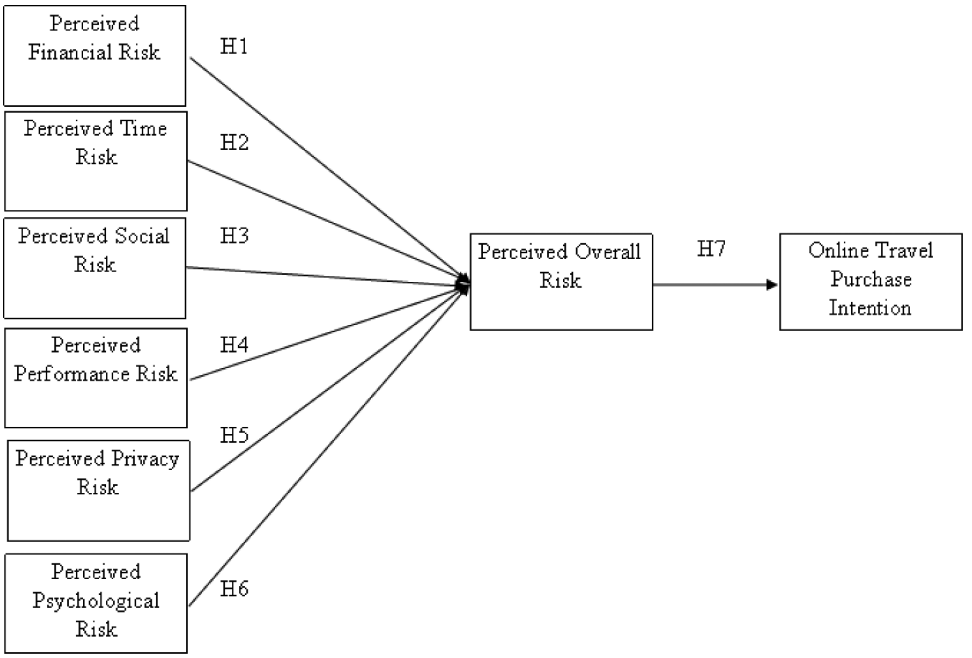

Figure 1. Conceptual Framework.

Descriptive statistics of items and constructs

Table 2 shows the descriptive statistics of the constructs used in the research model. On average, the means for most of the items were around 3.03 (out

of 5) for the overall sample (N = 518), 3.15 for the Millennials sample (N = 262), and 2.91 for the Baby Boomers sample (N= 256). These results show that most of the respondents generally express positive answers to the variables used in the model. Table 2 also shows that the standard deviations ranged from 0.947 to 1.140 for the overall sample, from 0.911 to 1.137 for the Millennials sample, and from 0.951 to 1.120 for the Baby Boomers sample. This indicates a narrow spread around the mean.

Measurement model assessment and invariance testing

The overall data (N = 518) were initially used to perform single-group confirmatory factor analysis. Following this, a separate single-group confirmatory factor analysis for each of the generational cohorts was performed. The fit indices obtained from these tests confirm model fit for both the generational cohorts based on the literature's recommended limits (Table 3). It is essential to confirm the appropriateness of Millennials and Baby Boomers' measures before the multi-group comparison is performed. The results of the overall sample apply to the subsamples for both Millennials and Baby Boomers sample. For both the subsamples, indicator reliability was confirmed. Table 4 highlights that the loadings were above the recommended 0.7 benchmark and significant at $p < .01$ for the measurement models. The Cronbach's alpha and composite reliability values confirm that each of the generational samples' constructs is reliable (Table 5). Convergent validity was determined by confirming that AVE's values were higher than the recommended 0.50 threshold (Bagozzi & Yi, 1988). As per the suggestion by Fornell and Larcker (1981), discriminant validity is confirmed by examining the indicators' cross-loadings to see that the indicator loadings for none of the constructs load high on other constructs. This criterion was successfully applied to confirm discriminant validity for the overall samples and both the generational sub-samples (Tables 6, 7, and 8).

As the results confirmed the validity of the measures for both the generational sub-samples, we move on to verifying configural invariance by simultaneously estimating the unconstrained models for both the Millennials and Baby Boomers sample. Results substantiate that the data fits adequately for the configural model ($\chi2$ = 1035.325; df = 462; $p < .01$; $\chi2/df$ = 2.241; RMSEA = 0.049; CFI = 0.959; NFI = 0.929; TLI = 0.951). Metric invariance was ascertained by imposing equal constraints on all the factor loadings for both the generational sub-samples. Results prove that the metric model fits adequately ($\chi2$ = 1065.8; df = 486; $p < .01$; $\chi2/df$ = 2.193; RMSEA = 0.048; CFI = 0.958; NFI = 0.927; TLI = 0.953).

Structural relationships

After the measurement model was successfully evaluated, the hypotheses were tested using the structural model's maximum likelihood method (Tables 9 and 10).

First, for the Millennials sample, the model was adequate as the chi-square value was statistically significant ($\chi 2 = 698.122$; df = 348; $p < .01$; $\chi 2/df = 2.006$; RMSEA = 2.006; CFI = 0.933; NFI = 0.876; TLI = 0.922). Five of the seven hypotheses that were tested were statistically significant at the 0.05, 0.01, or 0.001 level. The significant relationships were found on the paths for perceived financial risk to overall risk ($\beta = 0.239$ t = 5.399, $p < .001$), perceived time risk to overall risk ($\beta = 0.120$ t = 2.865, $p < .01$), perceived privacy risk to overall risk ($\beta = 0.201$ t = 4.770, $p < .001$), perceived psychological risk to overall risk ($\beta = 0.779$ t = 15.060, $p < .001$), and overall risk to online travel purchase intention ($\beta = 0.293$ t = 5.120, $p < .001$). Perceived social risk and perceived performance risk were not found significant for the Millennials sample (Figure 2).

Second, for the Baby Boomers sample, the model was adequate as the chi-square value was statistically significant ($\chi 2 = 1071.480$; df = 348; $p < .01$; $\chi 2/df = 3.079$; RMSEA = 0.096; CFI = 0.913; NFI = 0.877; TLI = 0.899). Five of the seven hypotheses that were tested were statistically significant at the 0.05, 0.01, or 0.001 level. The significant relationships were found on the paths for perceived financial risk to overall risk ($\beta = 0.228$ t = 5.358, $p < .05$), perceived

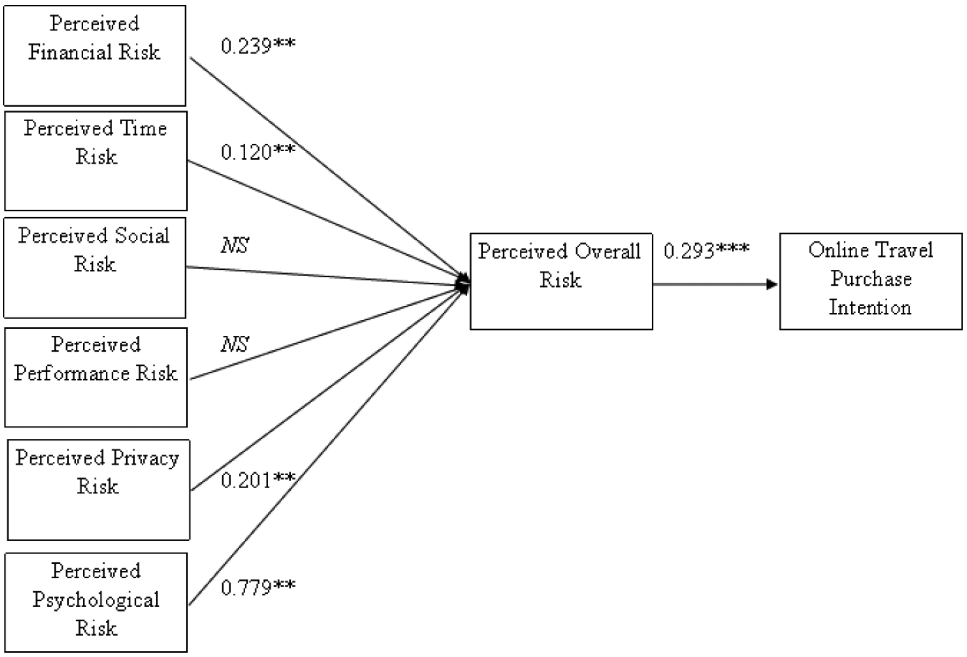

Figure 2. Millennials Model.

social risk to overall risk (β = 0.181 t = 4.401, $p < .001$), perceived performance risk to overall risk (β = 0.189 t = 2.723, $p < .05$), perceived privacy risk to overall risk (β = 0.189 t = 4.608, $p < .001$), perceived psychological risk to overall risk (β = 0.735 t = 16.155, $p < .001$), and overall risk to online travel purchase intention (β = 0.417 t = 10.23, $p < .001$). Perceived time risk was not found significant for the Baby Boomer sample (Figure 3).

To examine the generational cohorts' moderating effects, further analysis was conducted to identify non-invariant path relationships. The magnitude and significance of path coefficients in the inner model were compared to ascertain whether the path relationship's directionality and strength were different across the generational sub-samples. Tables 9 and 10 presents the generational-specific MGA results for Millennials and Baby Boomers.

Discussion

Despite the increase in internet prevalence, consumers' adoption of online travel purchases remains low. This signifies the importance of investigating perceived risk facets that inhibit consumers' online travel purchase intention. This study tested and confirmed the multidimensional facets of perceived risk across Millennials and Baby Boomers by analyzing the collected data. There were notable differences between the two cohorts. The results demonstrate that

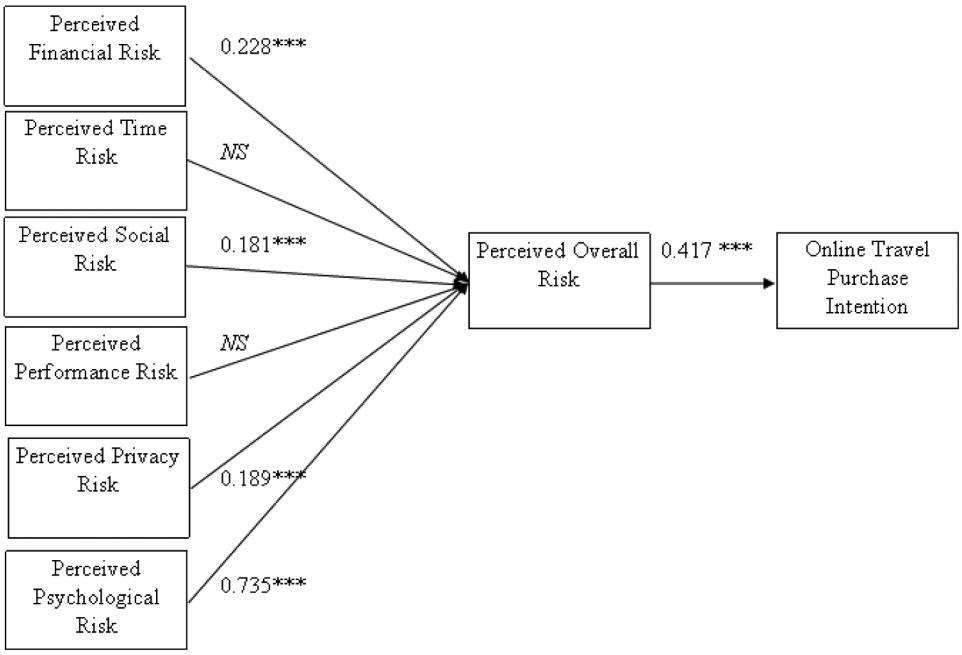

Figure 3. Baby Boomers Model.

Table 2. Descriptive statistics of the items.

		Overall		Millennials		Baby Boomers	
Construct	Item	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Perceived Financial Risk	PFR1	2.91	0.997	3.05	0.966	2.77	1.010
	PFR2	3.09	0.984	3.21	0.941	2.97	1.015
	PFR3	3.04	0.999	3.16	0.941	2.91	1.042
Perceived Time Risk	PTR1	2.74	1.016	2.87	1.033	2.61	0.984
	PTR2	2.78	1.066	2.92	1.065	2.64	1.050
	PTR3	2.72	1.077	2.87	1.068	2.57	1.068
Perceived Social Risk	PSR1	2.36	1.089	2.62	1.131	2.09	0.978
	PSR2	2.39	1.067	2.67	1.101	2.10	0.951
	PSR3	2.39	1.055	2.66	1.074	2.11	0.961
Perceived Performance Risk	PFR1	3.24	0.963	3.31	0.942	3.16	0.980
	PFR2	3.17	0.947	3.22	0.911	3.11	0.982
	PRF3	3.20	1.010	3.28	0.964	3.12	1.050
Perceived Privacy Risk	PVC1	3.34	0.988	3.37	0.949	3.32	1.028
	PVC2	3.43	0.979	3.48	0.925	3.39	1.031
	PVC3	3.42	0.984	3.45	0.932	3.39	1.035
	PVC4	3.48	0.973	3.49	0.917	3.46	1.028
	PVC5	3.43	0.981	3.43	0.947	3.44	1.016
	PVC6	3.43	0.996	3.45	0.961	3.40	1.032
Perceived Psychological Risk	PSY1	2.72	1.092	2.85	1.109	2.59	1.059
	PSY2	2.68	1.106	2.86	1.080	2.51	1.106
	PSY3	2.66	1.140	2.83	1.137	2.49	1.120
Perceived Overall Risk	OVR1	2.92	1.043	3.04	1.013	2.79	1.060
	OVR2	2.74	1.101	2.95	1.090	2.53	1.073
	OVR3	2.78	1.075	2.96	1.066	2.60	1.055
Online Travel Purchase Intention	PTI1	3.47	0.982	3.58	0.897	3.37	1.051
	PTI2	3.48	0.970	3.55	0.917	3.41	1.019
	PRI3	3.35	0.979	3.46	0.879	3.25	1.062
	PTI4	3.21	0.998	3.35	0.940	3.07	1.036
	PTI5	3.21	0.983	3.33	0.926	3.10	1.026

Table 3. Fit Indices for Confirmatory Factor Analyses.

	Single Group CFA			Multi-Group CFA	
	Overall Sample	Millennials Sample	Baby Boomers Sample	Configural Invariance	Metric Invariance
χ2	2181.903	1360.937	1282.651	1035.325	1065.8
Df	246	246	246	462	486
χ2/df	8.87	5.532	5.214	2.241	2.193
RMSEA	0.123	0.132	0.129	0.049	0.048
RFI	0.823	0.754	0.829	0.915	0.917
IFI	0.858	0.813	0.873	0.959	0.959
NFI	0.843	0.78	0.848	0.929	0.927
TLI	0.84	0.789	0.857	0.951	0.953
CFI	0.857	0.812	0.873	0.959	0.958

RMSEA = Root Mean Square Error of Approximation; RFI = Relative Fit Index; IFI = Incremental Fit Index; NFI = Normed Fit Index; TLI = Tucker Lewis Index; CFI = Comparative Fit Index.

Table 4. Factor Loadings for Individual Items.

		Overall		Millennials		Baby Boomers	
Construct	Item	Loading	t-value	Loading	t-value	Loading	t-value
Perceived Financial Risk	PFR1	0.764	19.657	0.701	11.169	0.811	16.564
	PFR2	0.764	19.664	0.712	11.335	0.801	16.241
	PFR3	0.949		0.942		0.955	
Perceived Time Risk	PTR1	0.901	33.658	0.893	19.91	0.908	29.022
	PTR2	0.931		0.891		0.970	
	PTR3	0.920	35.392	0.883	19.592	0.953	35.956
Perceived Social Risk	PSR1	0.892	34.925	0.837	19.063	0.946	36.068
	PSR2	0.946		0.92		0.971	
	PSR3	0.939	40.588	0.919	22.446	0.955	38.000
Perceived Performance Risk	PPR1	0.869	27.691	0.824	16.791	0.909	23.781
	PPR2	0.927		0.894		0.956	
	PPR3	0.850	26.723	0.883	18.249	0.822	19.141
Perceived Privacy Risk	PVC1	0.856	29.94	0.835	17.811	0.877	25.521
	PVC2	0.920	36.565	0.878	19.592	0.959	38.268
	PVC3	0.921		0.872		0.963	
	PVC4	0.896	33.811	0.864	19.023	0.918	30.485
	PVC5	0.850	29.473	0.781	15.85	0.901	28.167
	PVC6	0.880	32.128	0.830	17.623	0.917	30.350
Perceived Psychological Risk	PSY1	0.899	35.273	0.907	22.216	0.895	28.145
	PSY2	0.946		0.898		0.976	
	PSY3	0.939	39.342	0.904	22.049	0.953	37.832
Perceived Overall Risk	OVR1	0.810	24.923	0.806	16.889	0.822	18.793
	OVR2	0.929		0.890		0.919	
	OVR3	0.904	32.772	0.910	21.046	0.951	26.495
Online Travel Purchase Intention	PTI1	1		1		1	
	PTI2	0.973	22.425	0.949	13.07	0.987	22.325
	PRI3	0.981	22.4	0.963	14.326	0.969	18.498
	PTI4	0.972	21.108	1.049	14.764	0.888	15.690
	PTI5	0.933	20.054	0.977	13.469	0.884	15.897

perceived financial risk, perceived privacy risk, and perceived psychological risk are significant for both generations. Other studies have also confirmed the

Table 5. Generation-Specific Cronbach's Alpha.

Measurement	Construct	Overall	Millennials	Baby Boomers
Cronbach's Alpha	Perceived Financial Risk	0.864	0.824	0.891
	Perceived Time Risk	0.941	0.918	0.960
	Perceived Social Risk	0.947	0.921	0.970
	Perceived Performance Risk	0.912	0.900	0.922
	Perceived Privacy Risk	0.957	0.936	0.972
	Perceived Psychological Risk	0.945	0.930	0.958
	Perceived Overall Risk	0.940	0.928	0.949
	Online Travel Purchase Intention	0.938	0.917	0.951

importance of these factors (Kamalul Ariffin et al., 2018; Q. Yang et al., 2015). This implies that Millennials and Baby Boomers are concerned about financial, privacy, and psychological risk when intending to make a travel purchase online.

This study found perceived time risk to be significant only for the Millennials sample. This finding is different from the study conducted by Q. Yang et al. (2015) that found a weak relationship for younger consumers' time risk. Loss of time due to websites' slow loading time or time delays resulting from downloading images can lead younger consumers to be frustrated (Thakur & Srivastava, 2015). Therefore, travel providers need to provide fast transactions for time-pressed consumers and for whom saving time is a major incentive for an online travel purchase. Ensuring websites are easy to navigate and periodically testing the response speed of portals on low bandwidth connections can increase consumers' likelihood of adopting online travel purchases (Thakur & Srivastava, 2015).

Perceived performance risk was found to be significant only for Baby Boomers. This implies that Baby Boomers are concerned that purchasing travel online would not deliver the desired benefit. To help mitigate this risk perception, online travel providers can provide detailed information about the product or service with visual representation where possible. Offering consumers good exchange and return policies can encourage adoption for Baby Boomers by reducing the perception of performance risk.

The relationship between perceived social risk to overall risk is stronger for the Baby Boomers' sample compared to the Millennials. This shows that consumers in both cohorts care about the responses from significant members of their social network when deciding to purchase travel online. Consumers are concerned about their image in relation to their immediate social group. Online travel providers can promote those who shop online with them as role models in their advertising campaigns. These shoppers can be promoted as well-informed, rational, and practical consumers.

Looking at the impact of consumers' overall risk perception on their decision to purchase travel online, this study has shown that the negative relationship is stronger for Baby Boomers compared to Millennials. This

Table 6. Discriminant Validity Analysis from Confirmatory Factor Analysis (Overall Sample).

	CR	AVE	MSV	MaxR(H)	BI	OPR	PSY	PPR	PFR	PSR	PTR	PF
BI	0.938	0.751	0.122	0.941	0.867							
OPR	0.938	0.834	0.536	0.949	−0.349***	0.913						
PSY	0.909	0.768	0.006	0.917	0.074†	−0.056	0.877					
PPR	0.957	0.786	0.388	0.959	−0.208***	0.574***	−0.008	0.886				
PFR	0.908	0.767	0.467	0.912	−0.157***	0.597***	−0.022	0.623***	0.876			
PSR	0.947	0.856	0.501	0.949	0.05	0.658***	−0.047	0.315***	0.497***	0.925		
PTR	0.937	0.833	0.536	0.939	−0.215***	0.732***	−0.076†	0.446***	0.578***	0.708***	0.913	
PF	0.865	0.683	0.491	0.895	−0.243***	0.681***	−0.004	0.566***	0.683***	0.523***	0.701***	0.826

The boldfaced diagonal elements are the square root of the variance shared between the constructs and their measures. Off-diagonal elements are the correlations between constructs.
*** $p < 0.001$

Table 7. Discriminant Validity Analysis from Confirmatory Factor Analysis (Millennials).

	CR	AVE	MSV	MaxR(H)	BI	OPR	PSY	PPR	PFR	PSR	PTR	PF
BI	0.918	0.691	0.029	0.92	0.831							
OPR	0.927	0.809	0.575	0.94	−0.169**	0.9						
PSY	0.895	0.74	0.001	0.906	0.012	0.014	0.86					
PPR	0.949	0.755	0.379	0.951	−0.08	0.566***	0.032	0.869				
PFR	0.898	0.746	0.581	0.908	0.095	0.537***	0.022	0.560***	0.864			
PSR	0.938	0.835	0.556	0.94	0.128*	0.710***	−0.01	0.334***	0.599***	0.914		
PTR	0.924	0.802	0.575	0.924	−0.091	0.758***	−0.02	0.466***	0.592***	0.746***	0.895	
PF	0.848	0.651	0.581	0.872	−0.083	0.735***	0.016	0.616***	0.762***	0.608***	0.724***	0.807

The boldfaced diagonal elements are the square root of the variance shared between the constructs and their measures. Off-diagonal elements are the correlations between constructs.
*** $p < 0.001$

Table 8. Discriminant Validity Analysis from Confirmatory Factor Analysis (Baby Boomers).

	CR	AVE	MSV	MaxR(H)	BI	OPR	PSY	PPR	PFR	PSR	PTR	PF
BI	0.95	0.791	0.271	0.962	0.89							
OPR	0.948	0.859	0.503	0.96	−0.521***	0.927						
PSY	0.923	0.801	0.017	0.934	0.123*	−0.128*	0.895					
PPR	0.964	0.815	0.458	0.965	−0.311***	0.578***	−0.041	0.903				
PFR	0.918	0.788	0.458	0.923	−0.365***	0.651***	−0.065	0.677***	0.888			
PSR	0.955	0.877	0.442	0.959	−0.044	0.596***	−0.09	0.292***	0.386***	0.937		
PTR	0.953	0.871	0.503	0.958	−0.340***	0.709***	−0.131*	0.432***	0.557***	0.665***	0.933	
PF	0.883	0.716	0.464	0.921	−0.368***	0.629***	−0.025	0.520***	0.609***	0.442***	0.681***	0.846

The boldfaced diagonal elements are the square root of the variance shared between the constructs and their measures. Off-diagonal elements are the correlations between constructs.
*** $p < 0.001$

Table 9. Confirmatory Factor Analysis Results – Overall Sample.

	Model and item indices				
Factor and item description	SL	CR	SMC	AVE	MSV
Perceived Financial Risk					
I am concerned that purchasing through online travel websites would be a poor way to spend my money.	0.774	0.908	0.598	0.767	0.467
I am concerned about how much I pay when purchasing through online travel websites.	0.776		0.602		
I am concerned that purchasing through online travel websites would result in me not getting my money's worth.	0.921		0.848		
Perceived Time Risk					
I am concerned that purchasing through online travel websites will use too much of my time in terms of learning how to use it.	0.892	0.937	0.795	0.833	0.536
I am concerned that purchasing through online travel websites will create even more time pressure on me that I do not need.	0.919		0.845		
I am concerned that purchasing through online travel websites would lead to inefficient use of my time using computers, understanding online purchasing, and so forth.	0.926		0.858		
Perceived Social Risk					
I am concerned about my friends' and families' negative opinions about me purchasing through online travel websites.	0.903	0.947	0.815	0.856	0.501
I concerned about what people whose opinion is of value for me would think of me if I made a bad choice purchasing through online travel websites.	0.941		0.886		
I am concerned about what my friends would think of me if I made a bad choice purchasing through online travel websites.	0.932		0.868		
Performance Risk					
As I consider purchasing through online travel websites, I am concerned about whether my purchase product will perform as well as it supposed to.	0.85	0.865	0.722	0.683	0.491
If I purchase through online travel websites, I am concerned that my purchase will not provide the level of benefit that I would be expecting.	0.91		0.827		
The thought of purchasing through online travel websites causes me to be concerned about how dependable and reliable that purchase will be.	0.867		0.751		
Perceived Privacy Risk					
I am concerned that online travel shopping websites would collect too much personal information from me.	0.866	0.957	0.751	0.786	0.388
I am concerned that online travel shopping websites will use my personal information for other purposes without my authorization.	0.915		0.838		
I am concerned that online travel shopping websites will share my personal information with other entities without my authorization	0.914		0.835		
I am concerned that by using online travel shopping websites, unauthorized persons (i.e., hackers) could have access to my personal information.	0.891		0.794		
I am concerned about the privacy of my personal information during a transaction on online travel shopping websites	0.841		0.708		
I am concerned that online travel shopping websites will sell my personal information to others without my permission.	0.889		0.79		
Psychological Risk					
The thought of purchasing through online travel websites makes me feel uncomfortable.	0.833	0.909	0.693	0.768	0.006
The thought of purchasing through online travel websites gives me an unwanted feeling of anxiety.	0.921		0.848		
The thought of purchasing through online travel websites causes me to experience unnecessary tension.	0.874		0.764		
Overall Risk					
Overall, purchasing through online travel websites causes me to be concerned with experiencing some kind of loss if I went ahead with the purchase.	0.854	0.938	0.73	0.834	0.536
All things considered, I think I would be making a mistake if I purchase through online travel websites	0.932		0.869		
When all is said and done, I really feel that purchasing through online travel websites will pose problems for me that I do not need.	0.951		0.904		
Purchase Intention					

(*Continued*)

Table 9. (Continued).

Factor and item description	Model and item indices				
	SL	CR	SMC	AVE	MSV
I intend to purchase through online travel websites in the future.	0.896	0.938	0.803	0.751	0.122
I predict that I would purchase through online travel websites in the future.	0.884		0.781		
I plan to purchase through online travel websites in the near future.	0.885		0.783		
I will always try to purchase through online travel websites.	0.847		0.717		
I will recommend to others to purchase through online travel websites.	0.821		0.674		

Table 10. Structural Model Relationships Obtained for the Total Sample.

Structural Paths	Parameter	T	P
Financial Risk → Overall Risk	0.23	7.433	***
Time Risk → Overall Risk.	0.06	2.02	0.043
Social Risk → Overall Risk	0.137	4.624	***
Performance Risk→ Overall Risk.	−0.026	−0.860	0.390
Privacy Risk → Overall Risk.	0.192	6.464	***
Psychological Risk → Overall Risk.	0.759	22.055	***
Overall Risk → Online Travel Purchase Intention	0.211	6.165	***

*Significant at $p < 0.05$. **Significant at $p < 0.01$.

Table 11. Generation-Specific Multi-Group Analysis Results.

Path Name	ML Beta	BB Beta	Difference in Betas	P-Value for Difference	Interpretation
Privacy Risk → Overall Risk.	0.201***	0.189***	0.012	0.458	There is no difference.
Psychological Risk → Overall Risk.	0.779***	0.735***	0.044	0.146	There is no difference.
Social Risk → Overall Risk	0.030	0.181***	−0.151	0.075	The positive relationship between social risk and the overall risk is only significant for Baby Boomers.
Time Risk → Overall Risk.	0.120**	−0.005	0.126	0.177	The positive relationship between time risk is only significant for Millennials.
Performance Risk→ Overall Risk.	−0.100	0.071	−0.172	0.040	There is no difference.
Financial Risk → Overall Risk.	0.239***	0.228***	0.011	0.609	There is no difference.
Overall Risk → Online Travel Purchase Intention	0.293***	0.417***	−0.124	0.021	The negative relationship between overall risk and online travel purchase intention is stronger for Baby Boomers.

† $p < 0.100$; * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$

result can be explained as Millennials are the first generation to grow up with the internet (Hult et al., 2019). Therefore, they can better adapt to new technology more easily (Prensky, 2001). Lian and Yen (2014) also found that younger consumers generally have a lower perceived risk level than older consumers. As such, online travel providers need to direct and tailor their risk reduction strategies more toward Baby Boomers to increase their likelihood of adopting online travel purchases.

Theoretical contributions

This study has made several contributions to the literature. First, unlike many studies that have conceptualized perceived risk as a single-item construct (Chang & Chao, 2018; Huang et al., 2020; M.-Y. Chen & Teng, 2013), this study is one of the few that has looked at perceived risk as a multidimensional construct in the context of an online travel purchase. This multidimensional adoption of risk has allowed for a more detailed exploration of the specific types of risk factors affecting online travel purchases. Second, this study is one of the first to examine how the significance of perceived risk facets vary across Millennials and Baby Boomers. Researchers have acknowledged that very little research has been carried out among consumers' perceptions of different cohorts in the tourism context (Shulga et al., 2018). The majority of generation studies in the tourism literature have focused on a specific generation, such as only Baby Boomers or Millennials (Canavan, 2018; Xu & Pratt, 2018), while few studies have compared the behavior between generations (Gao et al., 2018; Qiu et al., 2018). Therefore, this study provides a valuable contribution in this regard. Third, the adoption of these two generations contributed to the understanding of both "digital natives" and "digital immigrants" (Jones et al., 2010). This study's findings have contributed to the literature by understanding the risk facets salient in each of the generational cohorts when deciding to purchase travel online.

Practical implications

The findings of this study provide valuable insights to practitioners. It highlights the critical role played by consumers' risk perception of online travel purchases. Specifically, the study's findings can support travel businesses and policymakers by enabling them to concentrate action that is more suited and relevant to particular generational cohorts to reduce risk perception. The findings reinforce the need for online travel providers to come up with risk-reducing strategies to increase adoption. Risk-reduction strategies can include developing improved portals and computer interfaces to counter consumer concerns.

Analysis confirms that perceived risk is indeed a multidimensional factor. Therefore, the risk-reduction strategies employed need to specially target those facets of risk salient with each generational cohort. Perceived financial, perceived privacy, and perceived psychological risk were significant among both generations. It is important for businesses offering online sales of travel products to pay particular emphasis on reducing these risks.

Perceived time risk was found significant for the Millennials sample. Business owners need to ensure that purchasing travel online is a quick and efficient process. This can be accomplished by ensuring that the travel websites

are fast to load, easy to navigate, and the purchasing process is convenient. This can reduce the time risk perception of Millennials and encourage purchase intention.

The findings show that Baby Boomers are more concerned about the performance risk of online travel purchases. Particularly, this implies that the desired benefits will not be delivered. As such, travel provides need to ensure that websites contain detailed information, including text, pictures, and videos about the product/service being purchased. To reduce uncertainty for Baby Boomers, information about refunds should be clearly stipulated on the website.

Despite social risk perception being found significant for both generational cohorts, the relationship was significantly stronger for Baby Boomers. This highlights the need for travel providers to include risk reduction strategies such as customers' testimonials about the benefits and ease of purchasing travel online as part of their marketing campaign. This will put customers, particularly Baby Boomers, at ease and allow them to make online travel purchases more confidently.

The study empirically confirms that Baby Boomers are impacted more by online risk perception, hence reducing their intention to engage in online travel purchases. Therefore, businesses should implement risk-reduction strategies to reduce uncertainties and risk perceptions of Baby Boomers more than Millennials. This will ensure the strategies are more effective in increasing the rate of adoption of online travel purchases.

Research limitations and future directions

Like any other study, this research has certain limitations that provide scope for future studies. This research has not specified the definition of an online travel purchase. As online purchase includes all types of tourism products and services such as transportation tickets, entry fees, tours, and hotel packages. As such, future research can examine risk perception considering distinct products and services. Generalizing the findings to other countries may be difficult due to the unique characteristics of Australian consumers. Research can look at generational differences in risk perception across different countries. Additionally, this study only includes Millennials and Baby Boomers. Future research can compare other generation cohorts such as Generation X, who do not fit into the digital native and digital immigrant groups. Despite this study generating valuable insights using a survey design, future studies can also be conducted using experimental design to gain a more comprehensive knowledge of the differences in Millennials and Baby Boomers' behavior.

Conclusion

This study examines facets of risk that are salient when consumers intend to purchase travel online. The perceived risk theory and generational cohort theory were used to examine how significant risk facets vary across generational cohorts (i.e., Millennials and Baby Boomers). Through data collection from 518 respondents (Millennials $N = 262$ and Baby Boomers $N = 256$) in Australia, this study showed that perceived financial risk, perceived risk privacy, and psychological risk are significant for both Millennials and Baby Boomers. The relationship between perceived social risk and the overall risk was stronger for the Baby Boomers than Millennials. This study also reveals that perceived time risk is only significant for the Millennials, while perceived performance risk was significant only for Baby Boomers. Overall risk was found to have a stronger negative impact on consumers' intention to purchase travel online for Baby Boomers. These results contribute both theoretically and practically toward a better understanding of risk perceptions and consumer decision-making in the context of online travel.

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