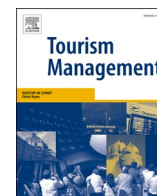




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Perceptions of cruise travel during the COVID-19 pandemic: Market recovery strategies for cruise businesses in North America

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ABSTRACT

The study aims to identify consumer perceptions of the cruise industry amid the COVID-19 pandemic and seeks to provide market recovery strategies for cruise businesses. The relationship between perceptions among cruise experience and COVID-19 financial status groups were explored. The results of analyses of data from 759 respondents indicated that travel constraints negatively influence behavioral intention through negativity bias. Further, perceived crisis management positively affects behavioral intention through attitude-trust. New consumers' behavioral intention is significantly affected by the negativity bias, and the perceived crisis management manipulates the trust of financial-affected consumers.

Author credit statement

Tianyu Pan: Conceptualization, Methodology, Formal analysis, Writing – original draft, Fang Shu: Investigation, Data curation, Writing – original draft, Miranda Kitterlin-Lynch, Ph.D.: Supervision, Resources, Writing – review & editing, Eric Beckman, Ph.D.: Supervision, Validation, Writing – review & editing

1. Introduction

Since March of 2020, the COVID-19 pandemic has caused economic damage throughout the world. According to June 2020 Global Economic Prospects, global real domestic product (GDP) expects a 5.2 percent shrink in 2020 (World Bank, 2020 Baum & Hai, 2020). One of the world's largest economic sectors, accounting for 10.4% of GDP and 319 million jobs (World Travel & Tourism Council, 2019), the tourism industry is no exception. A 22% decline in international tourism (nearly 80 billion U.S. dollars), was reported in January thru March of 2020 (WTO, 2020). Many countries have restricted or suspended tourism operations and international travel to prevent the spread of the virus (Baum & Hai, 2020).

Incidence of multiple outbreaks on cruise ships during the COVID-19 pandemic illustrates the vulnerability and weakness of confined cruise travel. Passengers are confined to a cruise ship for days and weeks at a

time with poor ventilation within the cabin rooms, thus human-to-human transmission of disease is amplified (Rocklöv et al., 2020). As a result of this amplified transmission, Centers for Disease Control and Prevention (CDC) released the No Sail Order in March 2020 and has advised U.S. travelers to defer all cruise travel (CDC, 2020c). All this public information, as well as discussions about the cruise ship on social and traditional media, has had a negative impact on potential future cruise travel (Laufer and Coombs, 2006).

As the world continues to address challenges regarding COVID-19, there is no doubt that travelers, crews, and destination communities have become the top priority for cruise businesses (CLIA, 2020). For example, major cruise corporations have promised to implement more rigorous protocols to protect travelers' health and safety. However, to prepare for post-crisis operations, cruise companies could also work to understand their travelers, including their attitudes, perceived crisis management, and negativity bias. In context, traveler perception of a cruise company during a crisis (while simultaneously acknowledging adverse outcomes) may negatively influence their post-crisis purchase intention (Laufer and Coombs, 2006).

The existing literature on cruise tourism is well-developed (Papaathanassis and Beckmann, 2011). Scholars have paid much attention to crisis communication and corporate reputation (e.g., Remondino et al., 2019; Ryschka et al., 2016). However, how a crisis may influence travelers post-crisis purchasing intention in an underdeveloped area in

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the context of a health-related crises (pandemic). The COVID-19 pandemic is unique in that we have not faced a similar type of global pandemic since the 1918–1919 Spanish Flu. Thus, to fill the knowledge gap and to provide implications, the present study aims to explore travelers' perceptions of cruise tourism amid the pandemic and resulting future purchase intention. This study also provides leading market recovery strategies for the cruise industry. Guided by leisure constraints theory (Crawford & Godbey, 1987) and prospect theory (Edwards, 1996), this study tested the relationships among travel constraints, negativity bias, attitude, perceived crisis management, and post-crisis behavioral intention. The differences in perceptions between new and repeat groups and financial-affected and non-affected groups were also explored.

2. Literature review

2.1. Crisis in the cruise industry

Crisis is a widely discussed topic in tourism literature (Jin et al., 2019; Liu et al., 2016). The term "crisis" has been defined from various points of view. Fearn-Banks (2010) defines "crisis" as a crucial situation that can interrupt regular business transactions and sometimes even put the company's survival at risk. (Ryschka et al. (2016)) describes crises as critical events that violates stakeholders' expectations and damages an organization's reputation. Crises impacting tourism include economic recession, political issues, energy issues, terrorisms, natural disasters and health issues (Hall, 2010). Ulmer et al. (2011) separates these crises into two different categories: crises caused intentionally (e.g. terrorism) and crises caused by nature (e.g. natural disasters).

Much attention has been directed to crisis in the cruise industry because of the potential severe impact on human beings (Mileski et al., 2014). (Liu & Pennington-Gray (2017)) and Tarlow (2017) posited that health is one of the most significant concerns regarding cruise travel. Health issues threaten the personal health and well-being of travelers, crew members, and even local residents of cruise ports (Bert et al., 2014). Human-to-human transmission of communicable disease is amplified on cruise ships due to high population density in confined spaces (Rocklöv et al., 2020). In response to this risk, the Center for Disease Control and Prevention (CDC) issued a clarified interim guidance for cruise ships on managing the recent COVID-19 pandemic in February 2020 (CDC, 2020c). Nonetheless, this increased level of perceived risk could negatively impact future cruise travel intentions (Liu et al., 2016).

2.2. Leisure constraints theory

Investigation of constraints to participation in leisure activities has expanded over the past three decades (Nyaupane & Andereck, 2007). Initially presented by Crawford and Godbey (1987), then expanded upon by Crawford et al. (1991), the leisure constraints model has become a significant contribution to the literature. Travel constraints refer to factors causing failure to start travel, restraining continued or frequent travel, and leading to negative impacts on travel quality (Hung & Petrick, 2010). The key factors that prevent planned or continued travel are travel constraints.

Travel constraints also create negative emotional judgment (Pavesi et al., 2016). Travel constraints increased during the COVID-19 pandemic, due to travel bans and restrictions; this applied especially to the cruise industry (Chinazzi et al., 2020). In the context of leisure tourism, travel constraints limit the participation in planning such activities (Khan et al., 2017). This does not, however, translate into the non-participation of leisure tourism, but that individuals will adopt constraint negotiation measures to minimize the travel constraints being faced (Huang & Hsu, 2009; Hung & Petrick, 2012).

Travel constraints have previously been categorized in the dimensions of intrapersonal and structural (Crawford et al., 1991), as well

as travel ability, satisfaction, and social agreement in leisure travel (Um & Crompton, 1992). Chen, Chen, and Okumus (2013) added the dimension of 'unfamiliar culture' to the list of travel constraints, with relation to travel to unfamiliar destinations. Wilson and Little (2005) explored the travel constraints of female Australian solo tourists, and concluded the following categories: socio-cultural, personal, practical, and spatial. Given that cruise tourism is particularly impacted by weather and health-related factors, this study adopted the following factors: structural, external, and disaster/crisis (Fuchs & Reichel, 2008; Liu-Lastres et al., 2019).

2.3. Prospect theory and negativity bias

Developed by Kahneman and Tversky (1979), prospect theory is one method of explaining the choices individuals make under risky conditions. Prospect theory was designed in response to expected utility theory, specifically to be used as an alternative. It was determined, however, that the expected utility theory model did not sufficiently explain how individual decisions are made when faced with risky situations. Thus, accurate predictions could not be made regarding decision maker choices. It is suggested that a prospect's outcome will depend on their perception of said outcome or the change as a result of their choice (Edwards, 1996). Specifically, an individual's prospect will be positive when it represents a gain, while being negative when it represents a loss. Thus, not only the prospects' probabilities but also individuals' perception of the outcome is considered to lead individuals to the decision. (Pavesi et al., 2016). Prospect theory emphasizes how negative events have a greater impact on an individual's experience than positive ones, a phenomenon known as 'negativity bias' (Tversky & Kahneman, 1992). According to the literature, a negative event will be perceived as compelling and prominent in comparison with a positive one (Rozin & Royzman, 2001). Previous studies have found that travel constraints produce negative effects on an individual's travel experience, consumer behavior, and a destination's image (Chen, Chen, & Okumus, 2013; Hung & Petrick, 2012; Khan et al., 2017). In the tourism context, this categorized travel constraints as negative events, which may introduce negativity bias into the decision-making process.

Pavesi et al. (2016) examined the effects of negative travel experience on tourists' behavioral outcomes based on prospect theory and negativity bias. The study found that negative events adversely affect tourists' future decisional behavioral intentions, indicating that strong negative events would reduce the likelihood of positive behavioral intention. Rozin and Royzman (2001) hypothesized a general bias in the human brain based on both innate predispositions and experience to provide further weight to negative entities. This study suggested that negative entities are more contagious than positive entities, and negativity bias exists in different domains, such as sensory, memory, and moral judgments. Negativity bias can be crafted in many ways, and several scholars have indicated that language used was the most influential (Rozin et al., 2001). Furthermore, Pentina et al. (2018) examined the role of positive and negative review valence, sidedness, and perceived similarity with the reviewer on user perceptions of helpfulness, trustworthiness, and credibility of the review. This study also found that the effects of negativity bias and message persuasiveness on behavioral intentions were stronger for consumers with the dominant prevention focus. Solomon (2019) suggested that consumers would be more careful to prevent losses while making decisions when they do not have product experience. Therefore, new consumers would find it easier to have a negativity bias.

2.4. Perceived crisis management

While some crises are beyond the control of management, organizations are often judged on their emergency response and reaction to these crises (Faulkner, 2001; Remondino et al., 2019). The more responsibilities attributed to the organization, the more likely the crisis

will damage the organization's reputation, image, brand equity, revenue, market share, and investor confidence (Chen et al., 2009). Thus, cruise companies could implement response strategies to deal with crises, such as the COVID-19 pandemic. When cruise organizations take responsibility of customer safety, this will influence traveler attitude towards consuming behavior, such a future willingness to take a cruise (Penco et al., 2019). If crisis response is handled effectively, it can reshape traveler attitudes towards the cruise organization, protect the organization's reputation, and reduce the negative impact of the crisis (Coombs, 2014).

Crisis communication is highlighted by incongruities between efforts by cruise lines' regarding crisis management public responses (Bert et al., 2014). Strategic crisis management practices in tourism often center on crisis communication (Fall 2004; Ritchie, 2008). The cruise tourism sector, one of the fastest-growing sectors prior to the COVID-19 pandemic, is certainly no exclusion (Liu-Lastres et al., 2019). Crisis communication, when effective, offers the benefit of delivering vital and time-sensitive information, enlarging public confidence, shielding an organization's reputation, and reducing any long-term negative effects (Coombs & Holladay, 2011). With regards to the context of health, effective crisis communication may also educate consumers. For the cruise industry, this may translate to encouraging passengers to observe preventive measures to limit the spread of communicable disease (Bert et al., 2014). While previous studies of crisis communication have certainly been conducted, there is a paucity of literature on the role of media, thus inhibiting a comprehensive understanding of how crisis communication is processed and how it impacts perception and behavior.

2.5. Attitude-trust and social class

The hospitality and tourism industry involves different aspects, such as social, cultural, political, and environmental (Milman & Pizam, 1988; Pizam & Milman, 1986). Thus, it is beneficial to evaluate impacts from different perspectives. Jones (1996) identified trust as an affective attitude in human cognitive and emotional behavior. Trusting is a behavior in which individuals have an optimistic attitude about the goodwill and confident expectation. It means the dependence by an individual or group upon a intentionally agreed obligation on the part of other persons or groups for the sake of recognizing and protecting the right and interests of all stakeholders involved in an economic exchange

Table 1
Hypotheses.

Hypotheses	
H1	Travel constraints has positive effect on tourists' negativity bias during COVID-19. The higher the level of travel constraints a person experiences, the more likely the person would have negativity bias.
H2	Perceived crisis management has positive effect on tourists' attitude-trust during COVID-19. The more crisis management a person receives from cruise companies, the more likely the person will have positive attitude-trust.
H3	Negativity bias has negative impact on tourists' attitude-trust during COVID-19. The more negativity biases a person has, the less likely the person will have positive attitude-trust.
H4	Negativity bias has negative impact on tourists' post-crisis intention during COVID-19. The more negativity biases a person has, the less likely the person would intend to travel with cruise.
H5	Attitude-trust positively influence tourists' post-crisis intention during COVID-19. The higher the level of attitude-trust a person has, the more likely the person would intend to travel with cruise.
H6a	The traveler type will moderate the relationship between perceived crisis management and attitude-trust.
H6b	The COVID-19 financial status will moderate the relationship between perceived crisis management and attitude-trust.
H7a	The traveler type will moderate the relationship between negativity bias and post-crisis intention.
H7b	The COVID-19 financial status will moderate the relationship between negativity bias and post-crisis intention.

or mutual effort (Hosmer, 1995).

Within the psychological decision-making process, people prefer to know how others' behaviors influence their benefits (Choi et al., 2016). This phenomenon mainly exists in the population with unstable social class, or the environment is changing the income level. Those people are more careful while making monetary decisions to be more aware of and prepared to respond to emergent situations or changing environments (Kraus et al., 2012). Steele and Sherman (1999) found that social class affected individuals' trust when making purchasing decisions, with low-income individuals more skeptical and less trusting when rendering monetary decisions. Hall (2008) proposed that high-income people would predominantly choose the higher-paying option without being familiar with the buyer; however, low-income people prefer the lower-paying option if they do not know the buyer. As a result, less wealthy consumers would care more about being able to trust the other party involved in the transaction than their wealthier counterparts.

2.6. Cruise experience and decisional behaviors

Experience plays a vital role in decision making, and intentional behaviors exist between new and repeat consumers (Pavesi et al., 2016; Wu et al., 2018). A hierarchy of effects was developed to explain the relative impact of consumer behavior, cognition, and attitudes (Solomon, 2019). The decision-making process of new consumers might be similar to a problem-solving process: they collect enough information first, then carefully weigh alternatives, and lastly, come to a thoughtful decision. However, some new consumers may process product information differently. These new consumers have limited product knowledge and evaluate the product only after experiencing the product. The formation of attitudes for new consumers are based on cognition information processing and behavioral learning processes (Lavidge & Steiner, 1961; Thompson, 2005). The decision-making process for repeat consumers is based on their emotional reactions. They learn and evaluate intangible product attributes (package design, advertising, brand value) from experience. Therefore, the formation of attitudes for this consumer group is on hedonic consumption (Howard & Gengler, 2001). Pavesi et al. (2016) proposed that traveler's repurchase intention might be influenced by his or her past travel experience. The travelers would shape the emotional judgment and product assessment based on the experience.

3. Research design

In order to produce representative, reliable and applicable results, this study followed a mixed-method research design (Hair et al., 2007). A qualitative pre-research focus group with university professors and managers from cruise companies aims to explore relevant trends and the needs in the industry and evaluate survey instruments. The analysis results were used to diversify the research topics and develop a quantitative survey. The purpose of the quantitative survey is to investigate the external factors (travel constraints) and travelers' behaviors, attitudes, and post-crisis intentions of the source market within COVID-19. Lastly, a qualitative group evaluation aims to discuss the survey results with industry experts, and the discussion results were used to design marketing recovery strategies.

3.1. Sample and data collection procedures

The sample was comprised of North American consumers who had any travel experience in their lifetime. Surveyors published the survey on Amazon MTurk in April, and averagely offered \$0.2 as compensation per participant. The researchers collected data anonymously, and Institutional Review Board (IRB) certified the data collection and distribution procedures on the platform. Participants were informed that there was no offensive and sensitive information in the survey, and they could stop filling the survey at any point in time. At the end, 759 valid

surveys were collected.

3.2. Measurement

Measurement items for this survey were developed based on literature review, and the questionnaire included (1) a thorough description of the research and the survey consent; (2) 24 measurement items for the assessment of travel constraints (Chen, Chen, & Okumus, 2013; Nyau-pane & Andereck, 2007; Fuchs & Reichel, 2008; Khan et al., 2017); (3) 5 scaled questions for collecting travelers perceived crisis management from cruise companies (Chi & Hung, 2011); (4) 11 items for the assessment of attitudes and negativity bias (Darke et al., 2016; Liu et al., 2016); (5) 4 items for exploring the post-crisis intention (Wolter & Cronin, 2015); (6) 2 questions on cruise consumption and 8 questions to collect demographic information, including cruise experience, age, education. Besides, a 7-point Likert scale was used due to literature suggestions and the number of points on rating scales is unlikely to change the reliability and validity (Krosnick & Presser, 2010).

3.3. Methodologies

3.3.1. Compare means with two layers

An exploratory factor analysis (EFA) was conducted on the measurement items to determine the proper number of common factors and explore which variables are indicators of latent factors. SPSS v26 was utilized to compare means. The mean of each behavioral factor in this study was calculated for each respondent and applied to the analysis as

Table 2
Results of EFA.

Construct	Scale Items	Factor Loading							M	SD	Skewness
		1	2	3	4	5	6	7			
External	The language barrier is a problem with cruise travel.	0.78							3.23	1.685	.508
	Visas for cruise travel are difficult to obtain.	0.75							3.88	1.739	-.651
	Political tension between my country and my preferred cruise destination makes me feel uncomfortable to take a cruise.	0.80							3.46	1.885	.559
Structural	My family and friends are not interested in cruise travel.		0.68						4.09	1.998	-.636
	I am not interested in cruise travel.		0.79						4.19	2.039	-.665
	Cruise travel does not provide good value for my money.		0.73						4.08	1.824	-.558
	Cruise travel is more expensive than other international trips.		0.52						4.27	1.726	-.585
	Cruise travel is a waste of time.		0.81						3.53	1.914	.573
	Cruise travel is a waste of my valuable vacation time.		0.83						3.60	1.920	.574
	Planning and preparing for cruise travel take too much time.		0.59						3.64	1.874	.592
DC	There's a risk that I will suffer natural disaster while taking a cruise.			0.80					4.33	1.668	-.549
	There's a risk that I will suffer terrorism while taking a cruise.			0.85					3.94	1.746	-.536
	There's a risk that I will suffer crime while taking a cruise.			0.85					4.13	1.657	-.567
	There's a risk that I will be affected by political unrest while taking a cruise.			0.79					3.89	1.760	-.547
CrisisR	I want to hear solutions from cruise companies in the case of COVID-19 outbreak.				0.88				5.36	1.460	-.951
	I would like to see cruise companies provide more cabins with window or balcony.				0.89				5.45	1.424	-.936
	I feel safe if cruise companies highly focus on crisis management in the case of a COVID-19 outbreak.				0.52				4.89	1.693	-.599
	I feel I am taking a risk if I do not see any information from cruise companies on COVID-19.				0.81				5.41	1.543	-.990
ATT	For me, cruise travel is safe.					0.70			4.63	1.568	-.499
	I have no doubt cruise travel can be trusted.					0.64			4.23	1.617	-.552
	I trust that cruise companies can overcome COVID-19.					0.72			4.53	1.634	-.566
	I trust that cruise companies will keep tourists safe in cruise traveling.					0.69			4.51	1.629	-.539
NB	For me, cruise travel is risky.						0.87		4.60	1.665	-.560
	For me, cruise travel is fearsome.						0.88		4.11	1.755	-.506
	I don't trust cruise travel.						0.83		4.19	1.736	-.527
INT	I'll encourage friends/family to participate in cruise travel after COVID-19.							0.87	3.97	1.872	-.563
	I want to participate in cruise travel within 12 months after COVID-19.							0.87	3.88	1.940	-.698
	I will save time and money within 12 months for participating in cruise travel after COVID-19.							0.87	3.83	1.911	-.589

Note 1: All factor loadings are significant at $p < .001$; suppress small coefficients-absolute value below: 0.50.

Note 2: Maximum likelihood with varimax rotation.

Note 3: DC = Disaster & Crisis; CrisisR = Perceived Crisis Management; ATT = Attitude – trust; NB = Negativity bias; INT = Post-crisis intention.

Note 4: If skewness is between -1 and -0.5 or between 0.5 and 1 , the distribution is moderately skewed (Hair et al., 2007).

dependent variables. Cruise experience and COVID-19 financial status were input into the first and second layers of the independent list, relatively. The mean, number of cases, and standard deviation were calculated as cell statistics, and ANOVA was also performed in this study.

3.3.2. Structural equation modeling

Structural equation modeling (SEM) integrates factor analysis and simultaneous equations. The focus is on an estimation of the relations among the latent variables free of the influence of measurement errors (Wang & Wang, 2012). Thus, SEM was adopted to explore the relevant factors and relationships. SEM was applied to test the measurement model through confirmatory factor analysis (CFA), and the hypotheses were tested through the structural model. Analysis of the data was derived from the statistical package SPSS v26 and AMOS v26. The model fit was measured utilizing chi-square (χ^2), comparative fit index (CFI), normed Fit Index (NFI), and root mean square error of approximation (RMSEA) (Hair et al., 2007). Multiple-group analyses were employed for exploring the moderating effect of the cruise experience and COVID-19 financial status between perceived crisis management and attitude-trust (PA), and also negativity bias and post-crisis intention (NP). The conceptual model and hypotheses were developed based on the literature review. Table 1 presented the hypotheses.

3.3.3. Word frequency analysis

A qualitative word frequency analysis was done to the cruise consumption open-ended questions. This analysis used the word cloud and

Table 3
Results of two layers compare means.

Cruise Experience	COVID-19 Financial Status		CR Mean	ATT-T Mean	NB Mean	INT Mean
Repeat	Financial-affected	Mean	5.3699	5.0790	4.3439	4.4595
		N	173	173	173	173
		Std. Deviation	1.13916	1.06576	1.47663	1.68693
		Std. Error of Mean	0.08661	0.08103	0.11227	0.12826
	Non-affected	Mean	5.1573	5.3123	3.7646	4.3350
		N	103	103	103	103
		Std. Deviation	1.08922	1.02519	1.55764	1.59101
		Std. Error of Mean	0.10732	0.10102	0.15348	0.15677
New	Financial-affected	Mean	5.1424	4.4078	4.5672	3.4044
		N	264	264	264	264
		Std. Deviation	1.20330	1.28094	1.33057	1.68054
		Std. Error of Mean	0.07406	0.07884	0.08189	0.10343
	Non-affected	Mean	5.0183	4.3326	4.3425	3.3744
		N	219	219	219	219
		Std. Deviation	1.24002	1.30293	1.37693	1.63452
		Std. Error of Mean	0.08379	0.08804	0.09304	0.11045
ANOVA	F	5.218	75.312	9.910	66.993	
	Sig.	0.023	0.000	0.002	0.000	

p < .05.

bar chart from providing consumers' insights, such as what they would care the most in the future cruise trips and the willingness to participate in cruise travel with deep discounts.

4. Results

4.1. Compare means with two layers

In order to detect scale dimensionality, measurement items were analyzed by using an exploratory factor analysis (EFA) with the maximum likelihood analysis and varimax rotation. For confirming each factor identified by EFA had only one dimension, researchers removed cross-loading items and attributes that had factor loadings of lower than 0.50 (Bentler, 1980). Table 2 showed the items and factors that remained after the elimination, supporting previous literature (Chen, Chen, & Okumus, 2013; Khan et al., 2017). Factor perceived crisis management, negativity bias, and attitude-trust were identified in EFA, providing new perspectives on COVID-19 market recovery in the tourism context.

Respondents were firstly grouped by cruise experience, then separated into financial-affected and non-affected (New: N_{financial-affected} = 264, N_{non-affected} = 219; Repeat: N_{financial-affected} = 173, N_{non-affected} = 103). Table 3 presented groups' means and ANOVA results of this analysis. The results of ANOVA showed that the consumption behaviors between groups are significantly different (p < .05). In the new consumer group, financial-affected consumers have higher means in perceived crisis management and negativity bias but lower means in attitude and post-crisis intention. Both financial-affected and non-affected respondents in the new consumer group have low intention to travel with cruise. A similar trend existed in the repeat consumer group.

Table 4
Reliability and the square root of AVE.

	Cronbach's α	CR	AVE	Structural	External	DC	CrisisR	Attitude	NB	INT
Structural	0.899	0.894	0.556	0.746						
External	0.857	0.823	0.608	0.647	0.780					
DC	0.917	0.918	0.738	0.597	0.689	0.859				
CrisisR	0.805	0.829	0.559	-0.120	0.042	0.065	0.748			
Attitude	0.886	0.857	0.601	-0.115	0.340	0.049	0.210	0.775		
NB	0.827	0.836	0.630	0.671	0.572	0.636	0.097	-0.307	0.794	
INT	0.918	0.895	0.741	-0.030	0.437	0.122	0.074	0.754	-0.158	0.861

Note 1. AVE = Average Variance Extracted; CR = Composite Reliability.

However, financial-affected and non-affected respondents in this group showed a higher attitude, post-crisis intention, perceived crisis management but lower negativity bias than the new consumer group.

4.2. Structural equation modeling

Confirmatory factor analysis (CFA) was implemented to assess the overall model fit of the measurement model (Beckman et al., 2017). The goodness-of-fit indices in this study suggest that the measurement model fit the data well ($\chi^2 = 1442.937$, $df = 325$, $p < .001$, $RMSEA = 0.067$, $CFI = 0.924$, $NFI = 0.904$). Both the Cronbach's alpha and composite reliability were above 0.80, indicating sufficient internal consistency (Bentler & Bonett, 1980). The average variance extracted (AVE) for each construct ranged from 0.556 to 0.741, and these were above the threshold of 0.50 (Farrell, 2010). To test the discriminant validity, the

Table 5
Results of path analysis.

	Independent variable		Dependent Variable	β	t-value	Hypothesis
H1	Travel Constraints	↔	Negativity Bias	0.054	15.960***	Supported
H2	Perceived Crisis Management	↔	Attitude-trust	0.045	4.321***	Supported
H3	Negativity Bias	↔	Attitude-trust	0.071	-6.702***	Supported
H4	Negativity Bias	↔	Intention	0.033	4.353***	Not supported
H5	Attitude-trust	↔	Intention	0.056	19.088***	Supported

***p < .001.

Table 6
Results of multiple-group analyses.

Linkages	New Consumer Group (n = 483)		Repeat Consumer Group (n = 276)		Baseline Model	Nested Model
	S.E.	t-value	S.E.	t-value	χ^2	
CrisisR - > ATT (1)	0.050	2.926***	0.095	2.964***	1818.503	1820.040
NB - > INT (2)	0.044	4.680***	0.052	1.306	1818.503	1822.368
	Financial-Affected Group (n=437)		Non-Affected Group (n=322)		Baseline Model	Nested Model
	S.E.	t-value	S.E.	t-value	χ^2	
CrisisR - > ATT (3)	0.075	4.527***	0.053	1.441	1876.946	1885.128
NB - > INT (4)	0.047	2.312**	0.048	3.790***	1876.946	1878.036

Chi-square difference test:
 $\Delta\chi^2$ (1) = 1.537, $p > .05$ (H6a: Not supported)
 $\Delta\chi^2$ (2) = 3.865, $p < .05$ (H7a: Supported)
 $\Delta\chi^2$ (3) = 8.182, $p < .001$ (H6b: Supported)
 $\Delta\chi^2$ (4) = 1.090, $p > .05$ (H7b: Not supported)

*** $p < .001$, ** $p < .05$.

square root of AVE with the inter-construct correlation was compared. Table 4 shows the square root of AVE (presented in the diagonal) for each construct was greater than its correlation with all other constructs, proving the measurement model does have discriminant validity.

The research model was then tested utilizing a structural model. The structural model provided satisfactory model fit indices: $\chi^2 = 1460.849$, $df = 335$, $p < .001$, $CFI = 0.923$, $NFI = 0.903$, $RMSEA = 0.067$. Results of the proposed hypotheses can be found in Table 5. Travel constraints positively influenced negativity bias, supporting H1. Furthermore, as H2 and H3 expected, attitude-trust was positively affected by perceived crisis management and negatively impacted by negativity bias. However, the statistic showed that negativity bias positively influenced consumers' post-crisis intention, not supporting H4. Lastly, there was a positive relation between attitude-trust and post-crisis intention, supporting H5.

Multiple-group analyses were employed in order to investigate the moderating effects of cruise experience and COVID-19 financial status on PA (H6a-b) and NP (H7a-b). For testing H6a and H7a, the sample was split into two groups: new and repeat consumers. In order to compute a multi-group analysis, the unconstrained model was calculated with no pathways constrained (Byrne, 2004). The unconstrained model resulted in a satisfactory fit to the data ($\chi^2 = 1818.503$, $df = 668$, $p < .001$, $CFI = 0.921$, $NFI = 0.881$, $RMSEA = 0.048$). After running the unconstrained model, the authors compared the unconstrained model with a nested model utilizing a chi-squared difference test. The equality of a specific pathway was tested by constraining the pathway to be equal across

groups. The pathways of PA and NP were constrained respectively. The nested model showed good fits for PA ($\chi^2 = 1820.040$, $df = 669$, $p < .001$, $CFI = 0.921$, $NFI = 0.881$, $RMSEA = 0.048$) and NP ($\chi^2 =$



Fig. 2. Results of the most care items for consumers.

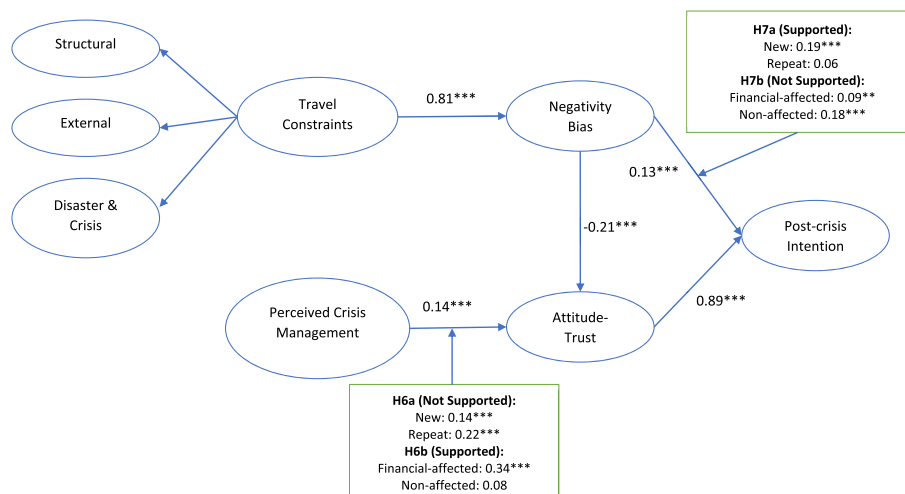


Fig. 1. SEM results.



Fig. 3. Results of the willingness to travel with deep discounts.

1822.368, $df = 669$, $p < .001$, CFI = 0.921, NFI = 0.881, RMSEA = 0.048). The same procedure has been applied for testing H6b and H7b, and the sample was split into financial-affected and non-affected groups. The unconstrained model fit was: $\chi^2 = 1876.946$, $df = 668$, CFI = 0.918, NFI = 0.878, RMSEA = 0.049, $p < .001$. The nested model fit of PA was: $\chi^2 = 1885.128$, $df = 669$, $p < .001$, CFI = 0.917, NFI = 0.878, RMSEA = 0.049; and NP was: $\chi^2 = 1878.036$, $df = 669$, $p < .001$, CFI = 0.918, NFI = 0.878, RMSEA = 0.049. The results of chi-square comparisons are provided in Table 6. Thus, H6b and H7a were supported but not H6a and H7b.

4.3. Word frequency analysis

The results of the word cloud analysis (Fig. 2) showed that “safety” and its relevant items (e.g., COVID-19, health, cleanliness) has the highest frequency (453). Price and cost-related items (e.g., amenities, accommodations) have approximately 300 frequency. From the bar chart (Fig. 3), 386 consumers (51%) are willing to travel with cruise if companies provide deep discounts, 169 consumers (22%) replied “No,” and 190 consumers (25%) could not confirm.

5. Discussion

The difference in perceptions of cruise travel between financial-affected and non-affected consumers in groups are distinct by using the two-layer compare means analysis. Results showed that financial-affected consumers would require more crisis management from cruise companies in the pandemic (Fig. 4). This type of consumer needs to be more aware of and prepared to respond to the unstable environment because they cannot insulate pandemic impacts. So, those consumers will care more about trust and the interdependent mindsets (Kraus et al., 2012). A well-organized crisis management would be beneficial to increase cruise travel certainty and reliability.

Since the income level of those consumers was changing within the time period of the COVID-19 pandemic, uncertainty and unreliability were increasing, especially while the negative news spread out. With this negative news, negativity bias was increased (Shah, 2015). The highest negativity bias existed in the financial-affected new consumer group, but non-affected repeat consumers stayed more positive (Fig. 5). Overall, non-financial affected consumers are more positive than financial-affected.

Trust plays an essential role for individuals who are in a poor financial situation when making monetary decisions (Hall, 2008).

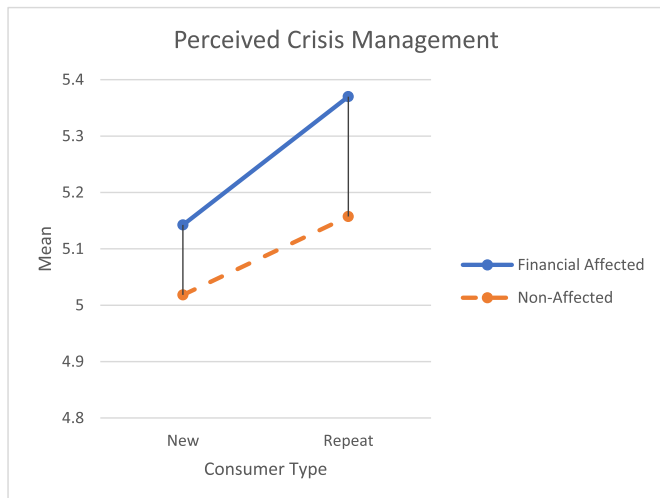


Fig. 4. Result of compare means – Perceived crisis management.

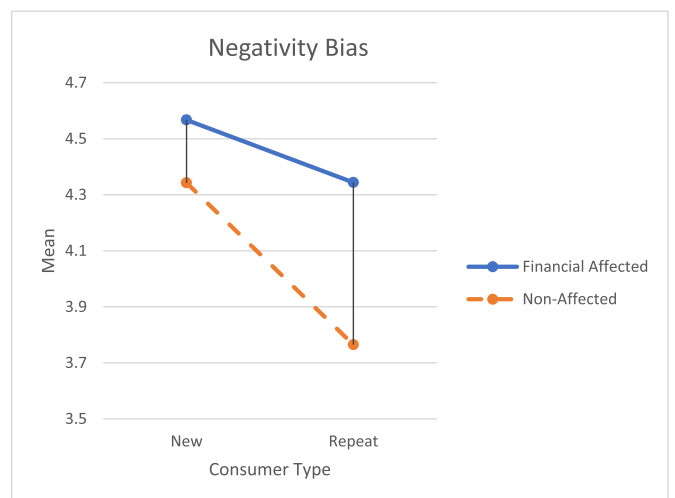


Fig. 5. Result of compare means – Negativity bias.

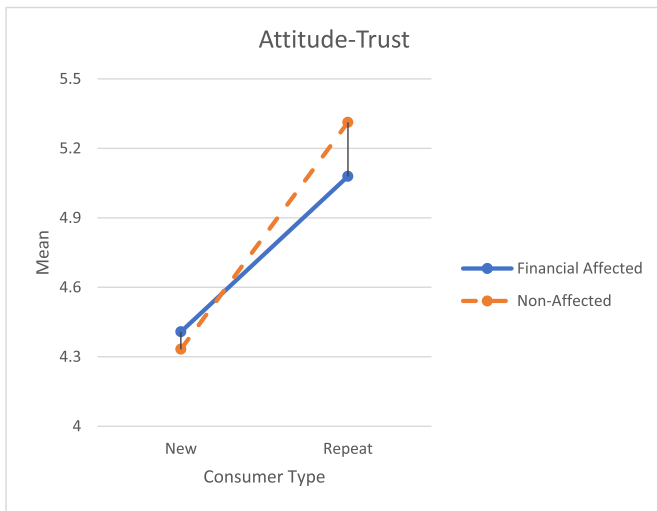


Fig. 6. Result of compare means – Attitude-Trust.

Cruising is a luxury form of traveling with a higher price, and those consumers would make decisions more carefully (Han & Hyun, 2018). In Fig. 6, financial-affected repeat consumers have lower trust during the COVID-19 pandemic than non-affected consumers. However, financial-affected consumers have a higher mean than the non-affected in the new consumer group, conflicting with previous literature. Furthermore, financial-affected consumers are more intent to travel with cruise after COVID-19 in both consumer types (Fig. 7). This phenomenon could be explained by the specialty and uncertainty of the COVID-19 pandemic. Moreover, the attributes (price, travel quality, disease controls) of traveling with cruise are not known with certainty ahead of time. So, there is a considerable uncertainty existed, and consumer behaviors might be different. With a grueling quarantine, consumers may be eager to escape from the reality and daily routine (Henning & Vorderer, 2001). In the context of psychology, escapism was defined as the tendency people have to escape from unsatisfying reality,

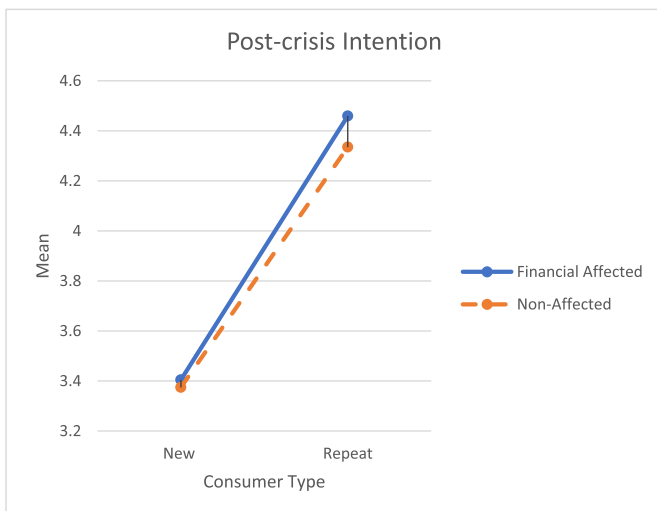


Fig. 7. Result of compare means – Post-crisis intention.

in which they live in a cognitive and emotional way (Vorderer, 1996). Escapism in the current situation is an advantage for cruise tourism, and the cruise market could recover quickly with proficient crisis communications and marketing strategies. This study has explored perceptions of cruise travel of particular social classes; however, factors that could impact consumers post-crisis intention and the relations among those factors remain unknown.

Fig. 1 presented the results of the SEM. These path coefficients are the parameters of the model, representing the estimates of effective connectivity (Anderson & Gerbing, 1988). Firstly, travel constraints highly affected negativity bias, indicating that more travel bans and restrictions during COVID-19 could easily increase consumers' negative judgment on cruise travel. This negative judgment would cause the credibility reduction of cruise travel, then affect the post-crisis intention. Travel constraints indirectly and negatively influenced attitude-trust through negativity bias (Bootstrap: $\beta = -0.415$, Lower = -0.572 , Upper = -0.264 , $p < .001$). However, travel constraints are mostly controlled by exogenous factors during COVID-19 (Chinazzi et al., 2020). In this stage, cruise companies could start to prepare the reopening, for example, tightly follow sanitation procedures, strengthen the medical team onboard, provide COVID-19 test frequently to crews, and differentiate the market based on consumer insights. Once the virus gets controlled and the government releases the restrictions, companies would be fully ready for operation and marketing.

The results showed that if consumers could perceive more crisis management or communication from cruise companies, trust in cruise travel would increase. The moderating effects of the cruise experience and financial status during the pandemic have been examined. There is no difference between the new and repeat consumer groups. However, differences in perceptions of cruise travel existed between financial-affected and non-affected groups: perceived crisis management only significantly impacted attitude-trust within the financial-affected group but not the non-affected group. This could be because individuals would consider and require more information to make monetary decisions while they are affected financially. Moreover, attitude-trust played a mediation role between perceived crisis management and post-crisis intention (Bootstrap: $\beta = 0.139$, Lower = 0.122 , Upper = 0.315 , $p < .001$). So, to target this type of consumer, cruise companies would have to communicate with them more often during COVID-19.

Negativity bias positively impacted consumers' post-crisis intention to cruise in general, aligning with Ito et al. (1998). Pavasi et al. (2016) argued that negative events would bring the corresponding emotional judgment, and the negative judgment decrease the behavioral intention. Likewise, people have been tired of the daily quarantine life at home, intending to escape the routine. Even though the negativity bias exists, people would still intend to travel with cruise. Furthermore, cruise experience was a moderator that significantly affected the relationship between negativity bias and post-crisis intention. The results showed that a negativity bias significantly influenced the post-crisis intention of new consumers, but repeat consumers were not, supporting Pentina et al. (2018). As noted in the literature review, new consumers have no sailing experience, and the formations of attitudes for them are based on cognition information processing and behavioral learning processes (Lavidge & Steiner, 1961; Thompson, 2005). This means the new consumer group's consumption behaviors could be easily affected by other consumers' negative events. Nevertheless, repeat consumers have their judgment based on their own experiences. Thus, the knowledge of products enhances the trust between cruise companies and consumers, and negativity bias only has limited effects on their post-crisis intention.

Cruise ships are called "floating resort", offering various amenities and leisure activities; however, traveling by sea is associated with many health risks and uncertainties (Liu et al., 2016). During COVID-19,

health-related issues become the top concern globally, so does in cruise tourism (CDC, 2020c). This study's results showed that consumers currently care about their safety and products' prices the most when the cruise business reopens. Under this situation, researchers found that more than 50% of consumers are still willing to travel with cruise if cruise companies offer deep discounts. This could be because the cruise industry has developed over ten decades, and cruise cultures have been well-developed. Consequently, having a clear crisis communication plan and offer a proper discount while reopening might be beneficial to recover.

About designing the communication plan, companies need to be familiar with the marketing communication options and outcomes. [Batra and Keller \(2016\)](#) researched the challenges of different marketing communication channels and offered insights and advice on how traditional and new media interact to affect consumer decision making. [Table 7](#) presented the communication outcomes from different communication options and their level of influence. To develop an efficient integrated marketing communication plan, it is necessary to understand how consumers process communications ([Petersen et al., 2015](#)). Specifically, in terms of the consumer knowledge, attitudes, and action inclination, the resources and mindsets a consumer uses in message reception and processing as well as the leading outcomes should be understood. ([Batra & Keller, 2016](#)). Furthermore, the impact of integrated marketing communication and advanced technology was measured in the customer-based hotel brand equity area, and the results suggested that brand equity and hotel competitive advantages could be increased by having a high level of hotel implementation of integrated marketing communication ([Šerić et al., 2014](#)).

5.1. Theoretical implications

The current study provides two theoretical implications for how cruise businesses manage the consumer relationship and marketing recovery strategies during disasters and crises. Firstly, new theoretical knowledge is offered for understanding how perceptions change in different market segments. According to the behavioral theory and perceived crisis management literature, disasters and crises have non-negligible effects on the local economy and residences' financial status, which subsequently influence attitude-trust and behavioral intention ([Liska, 1984; Liu et al., 2016](#)). The results showed that the consumption behaviors varied between different financial status groups, and cruise travel's intention would be increased with an efficient marketing communication plan. Furthermore, psychological mechanisms are different between new and repeat consumers. The results advance previous findings that tourists' behaviors are strongly influenced by crisis response, and negative judgment is easily formed while experiencing negative events ([Liu-Lastres et al., 2019; Rozin & Royzman, 2001](#)).

Secondly, the results of this study provide new outcomes by combining and extending the leisure constraints theory and prospect theory. The domain variables of previous crisis communication and

behavioral studies in cruise tourism were perceived communication efficacy, risk perception, perceived safety, attitude, and intention ([Liu et al., 2016](#)). Most cruise crisis behavioral studies involved experimental manipulations in examining behavioral and emotional outcome variables ([Ku et al., 2015](#)). However, this study tested behavioral and emotional outcome variables and identified two unique variables (travel constraints and perceived crisis management) by using SEM. The current study also opens up a new line of research for tourism scholars by investigating the above two unique variables that could impact key behavioral outcomes during the crisis.

5.2. Managerial implications

The results of this study suggest that cruise companies would find benefit in motivating both new and repeat consumers based on their different consumption behaviors. The COVID-19 pandemic can be seen as a negative event associated with substantial negative emotional judgment. Cruise companies may want to connect with potential new consumers who do not have cruise experience and convey detailed information to build trust. [Batra and Keller \(2016\)](#)'s marketing communication table ([Table 7](#)) recommends using social media, website, and phone calls to connect with people. There is also value in frequently updating COVID-19 related industrial information on websites, especially the sanitation procedures and welcome message. Moreover, public relations (PR) in cruise companies could specialize in marketing campaigns to new consumers, while sharing crisis responses and actions on social media. Regarding communications with repeat consumers, marketers could inspire them and instill loyalty using promotions, advertising on popular searching engines, and direct sales.

Secondly, COVID-19 financial status moderated the relationship between perceived crisis management and attitude-trust. Financial-affected consumers requested more communication than non-affected during the pandemic, but their travel intention is higher than non-affected consumers due to escapism. To target financial-affected consumers, marketers could provide promotions and discounts.

Lastly, the contagion of negative emotions is faster than positive ones ([Rozin & Royzman, 2001](#)). Thus, marketers need to respond to those negative events strategically, preventing an increase in societal negativity bias. Furthermore, ships from the leading cruise companies all have at least one doctor and two nurses on board. Depending on the capacity, larger ships have up to two doctors and four nurses. Those doctors and nurses are certified and trained ([Roberts & Williamson, 2020](#)). However, a six-person medical team might not be able to handle so many passengers during communicable disease outbreaks ([Banks, 2020](#)). Cruises would get benefits from having a strong team of COVID-19 trained doctors and nurses who can screen passengers showing symptoms. Furthermore, the virus screening must be performed to any passengers before going on board. Finally, cruise companies should identify high-traffic and high-touch public areas and clean them frequently.

Table 7
Communication outcomes from different communication options and its influence level.

Communication Outcomes	Communication Options										
	TV	Promos	Events	PR	Social Media	Website	Search	Display	Mobile	Direct	Selling
Create awareness and salience	xxx	xx	xx	xx	xxx	xx	xxx	xxx	xxx	xx	x
Convey detailed information	x	x	x	x	xx	xxx	x	x	xxx	xxx	xxx
Create brand imagery and personality	xxx	xx	xx	xx	xxx	xx	x	x	xx	x	x
Build trust	x	x	x	xxx	xxx	x	x	x	xx	x	xxx
Elicit emotions	xxx	xx	xxx	xxx	xxx	xx	x	x	xx	x	x
Inspire action	x	xxx	x	x	x	xx	xxx	xxx	xxx	xxx	xxx
Instill loyalty	xx	x	x	x	xx	xx	x	x	xx	xx	xx
Connect people	x	x	xx	x	xxx	xxx	x	x	xxx	x	x

Note: xxx = greatest influence; xx = medium influence; x = least influence.

Source: [Batra, R., & Keller, K. L. \(2016\). Integrating marketing communications: New findings, new lessons, and new ideas. Journal of Marketing, 80\(6\), 122-145.](#)

6. Conclusion

This study identifies the difference in perceptions of cruise travel between financial-affected and non-affected and provides extensive outcomes by combining both leisure constraints and prospect theories. Several market strategies are offered to practitioners in the cruise industry, and also, a positive message is delivered by exploring consumers' willingness to travel with cruises with a deep discount. As with any academic investigation of human behavior, this study is not without limitation. First, drawing from research on the prospect theory, this study focused on negativity bias and its effect. Prospect theory discusses the effects of both positivity and negativity bias. Future research could explore the specific factors for each type of bias and their caused-related effects during the pandemic. Moreover, language using marketing communication could lead to different biases. Future work could use manipulations to study the particular effects of different language using. Secondly, the authors mainly investigated differences in cruise business perceptions between new/repeat groups and financial-affected/non-affected groups. Future replications may segment consumers by perceived travel constraints. A future study could use qualitative methods to investigate the nuances of consumers' willingness and discount perceptions towards cruise in a richer and more exploratory manner.

Declaration of competing interest

None.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.tourman.2020.104275>.

Impact statement

This study provides several theoretical and managerial implications. Firstly, new theoretical knowledge is offered to understanding how perceptions change in different market segments during COVID-19. Secondly, the study delivers new outcomes by combining and extending the leisure constraints theory and prospect theory. It opens up a new line of research for tourism scholars by investigating two unique variables (travel constraints and perceived crisis management) that could impact vital behavioral outcomes during the crisis. Thirdly, this study provides detailed market recovery strategies to the cruise industry by investigating consumer behaviors and consumer communication processes. Lastly, a positive message is delivered to the industry by exploring consumers' willingness to travel with cruises with a deep discount.

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