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"Understanding the Influence of Perceived Susceptibility, Health Risk, and Government Trust on Risk Aversion and Recreational Behavior in Tourism Settings"

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INTRODUCTION

The tourism and recreation sectors are heavily influenced by perceptions of risk, especially in environments where health and safety concerns are prevalent. Understanding how these perceptions shape behavior is crucial for promoting safe and sustainable tourism practices. In this context, perceived susceptibility—an individual's belief about their likelihood of encountering a health threat—plays a significant role in shaping overall health risk perceptions (Slovic, 1987; Brewer et al., 2007). When individuals perceive themselves as susceptible to threats such as water contamination, disease outbreaks, or environmental hazards, they tend to report higher levels of perceived health risks, which subsequently influence their behavioral responses, such as risk aversion and recreational intentions.

Risk aversion, or the tendency to avoid potentially harmful situations, is a common behavioral response to heightened perceptions of susceptibility and health risks (Mowen et al., 2012; Gössling et al., 2020). In tourism contexts, this may result in individuals reducing their participation in recreational activities, particularly when they perceive such activities as unsafe (Lucrezi et al., 2015). Additionally, the COVID-19 pandemic has amplified these dynamics, as heightened health risks and susceptibility perceptions have significantly impacted travel and recreational behaviors worldwide (Wen et al., 2021).

The moderating role of trust in government is also critical in this framework. Trust in authorities can buffer negative perceptions and influence the extent to which individuals feel at risk and their likelihood of engaging in recreational activities (Kim & Kim, 2022). In situations where individuals trust government measures, they may exhibit lower risk aversion and higher recreational intentions, even when health threats are perceived (Siegrist & Cvetkovich, 2000).

This study aims to explore the relationships between perceived susceptibility, perceived health risk, and behavioral outcomes in recreational contexts, focusing on the moderating effect of trust in government. Understanding these relationships will provide valuable insights for policymakers and tourism managers to develop effective risk communication and safety strategies that encourage safe participation in recreational activities.

Literature Review

1. Perceived Susceptibility and Perceived Health Risk

Perceived susceptibility refers to an individual's belief about the likelihood of encountering a health threat. It plays a crucial role in shaping an individual's risk perception, as shown by studies highlighting that individuals who perceive higher susceptibility often exhibit heightened health risk perceptions (Slovic, 1987; Brewer et al., 2007). For instance, in the tourism context, individuals who believe they are susceptible to waterborne diseases or environmental hazards are more likely to perceive these as significant health risks when considering beach or water-based recreation (Lucrezi et al., 2015). Research in health psychology further supports this by indicating that perceived susceptibility influences individuals' behaviors and perceptions regarding various health risks, including pandemics and environmental hazards (Weinstein, 1988; Floyd et al., 2000). The linkage between perceived susceptibility and perceived health risk highlights the importance of understanding how these constructs interact to form a comprehensive risk perception framework. Moreover, studies emphasize that increasing awareness of health threats, such as public health campaigns, can elevate perceived susceptibility and, subsequently, perceived risk

(Rundmo & Iversen, 2004; Kim & Kim, 2022). Thus, perceived susceptibility is a significant predictor of perceived health risk, supporting H1.

2. Perceived Susceptibility and Risk Aversion

Perceived susceptibility is a key determinant of risk-averse behaviors, with higher perceived susceptibility leading to increased caution. Research on tourism behavior reveals that individuals who feel more susceptible to health threats, such as disease outbreaks or environmental hazards, are more likely to engage in risk-averse behaviors, such as avoiding travel or outdoor activities (Bae & Chang, 2021; Quintal et al., 2021). Studies in health and behavioral psychology show that perceived susceptibility contributes to precautionary actions, as people often change their behavior when they feel at risk (Rundmo & Moen, 2006; Chen & Tsai, 2010). For example, travelers who perceive a higher susceptibility to COVID-19 reported significantly lower travel intentions and exhibited higher risk aversion, which was influenced by their trust levels in public health authorities (Jiang & Wen, 2020; Nhamo et al., 2020). Additionally, the health belief model suggests that individuals' perceived susceptibility can be a motivational factor that compels them to take preventive measures, further indicating the impact on risk aversion (Champion & Skinner, 2008). The consistent findings in tourism and health contexts demonstrate the positive relationship between perceived susceptibility and risk aversion, affirming H2.

3. Perceived Susceptibility and Recreational Intentions

Perceived susceptibility not only affects risk aversion but also significantly influences recreational intentions. Research indicates that heightened perceived susceptibility can reduce individuals' participation in recreational and tourism activities due to the fear of encountering health threats (Mowen et al., 2012). In beach tourism, for example, beachgoers who perceive higher susceptibility to risks such as water pollution or marine hazards often show reluctance to visit coastal areas (Pendleton et al., 2001; Prat-Guitart et al., 2022). The negative relationship between perceived susceptibility and recreational intentions has also been observed during health crises, where individuals with heightened susceptibility perceptions were less likely to engage in public and outdoor recreational activities (Wen et al., 2021; Lee & Chen, 2020). This aligns with findings from research on water-based recreation, where individuals with higher perceived susceptibility to illnesses or accidents tend to avoid such activities, further affirming H3 (Dorfman et al., 2016; Ward et al., 2019). This consistent pattern highlights the need for effective communication and safety measures that reduce perceived susceptibility, ensuring that recreational intentions are maintained, even when health risks are present.

4. Perceived Health Risk and Risk Aversion

Perceived health risk is a critical factor influencing risk-averse behaviors, particularly in travel and tourism contexts. Individuals with higher perceived health risks are more likely to adopt precautionary measures, such as avoiding risky environments or activities (Renn, 2008; Wang & Hsu, 2022). In the context of beach tourism, higher perceptions of risks related to water quality, pollution, or marine hazards have been shown to significantly increase risk aversion, leading individuals to modify their behavior, such as visiting alternative locations or avoiding beaches altogether (Leatherman & Houser, 2009; Lucrezi et al., 2018). The COVID-19 pandemic has amplified this relationship, with studies highlighting that increased perceived health risks related to the virus led to a rise in precautionary

measures, including avoiding travel (Gössling et al., 2020; Zhan et al., 2020). The link between perceived health risk and risk aversion is supported by theoretical frameworks like the health belief model, which emphasizes the role of perceived threat in motivating protective behaviors (Champion & Skinner, 2008). This evidence consistently supports the positive relationship between perceived health risk and risk aversion, as outlined in H4.

5. Perceived Health Risk and Recreational Intentions

The impact of perceived health risk on recreational intentions has been widely documented, with studies showing that high-risk perceptions often lead to reduced participation in recreational activities. For example, research on beachgoers indicates that perceived risks associated with water quality, such as contamination or hazardous marine life, can significantly deter visitors from participating in beach activities (Lucrezi et al., 2015; Prat-Guitart et al., 2022). In a broader tourism context, the COVID-19 pandemic has illustrated how perceived health risks can drastically alter recreational intentions, with travelers canceling or postponing trips due to heightened concerns about exposure to the virus (Wen et al., 2021). The relationship is also observed in outdoor recreation contexts, where individuals with high perceived health risks tend to avoid public or crowded spaces (Mowen et al., 2012; Rice et al., 2020). The existing literature consistently demonstrates the negative impact of perceived health risk on recreational intentions, supporting H5 and highlighting the importance of managing risk perceptions to maintain tourism and recreation engagement.

6. Perceived Susceptibility and Risk Aversion

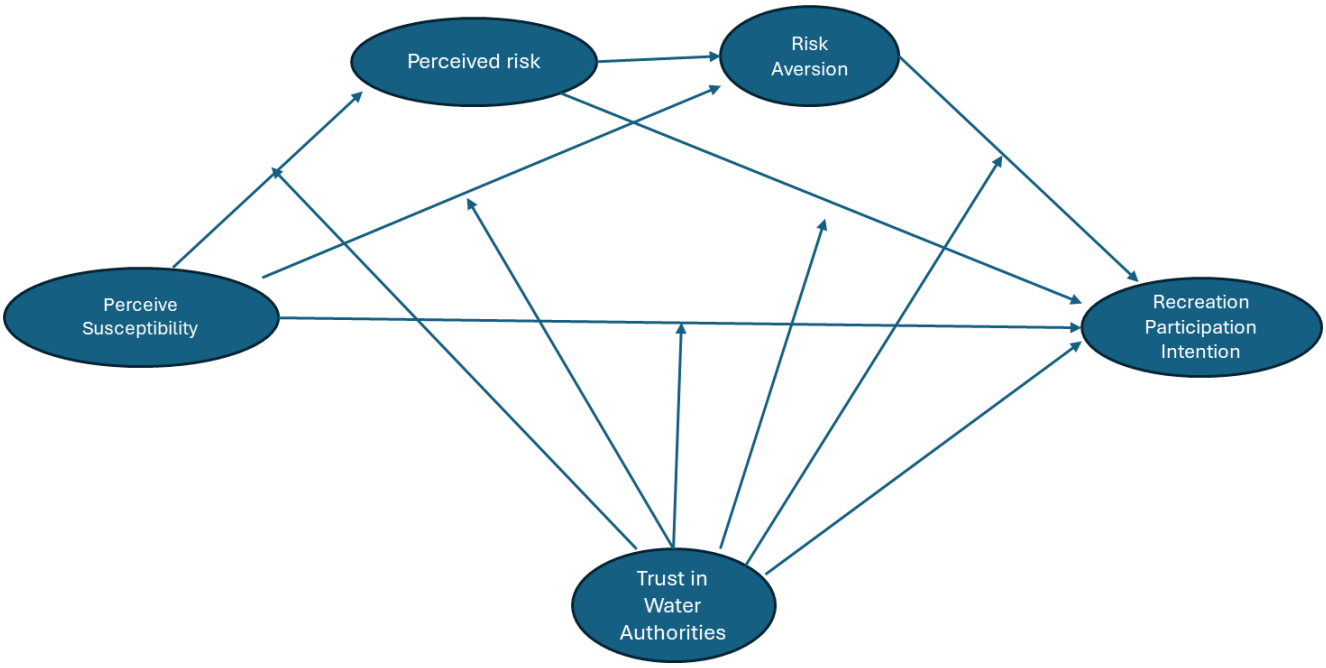
Risk aversion significantly influences recreational intentions, as individuals who are risk-averse are more likely to avoid situations that might expose them to health threats. Research on coastal tourism suggests that risk-averse beachgoers are less likely to visit beaches with perceived safety issues, such as poor water quality or strong currents (Botero et al., 2014; Leatherman & Houser, 2009). Similarly, during the COVID-19 pandemic, risk-averse individuals exhibited lower travel intentions and opted for safer recreational alternatives, such as remote or low-contact activities (Bae & Chang, 2021; Gössling et al., 2020). The tourism literature also shows that risk aversion can be moderated by factors such as destination safety measures and communication strategies, which may influence whether risk-averse individuals decide to engage in recreational activities (Wang & Hsu, 2022). Overall, these findings confirm the negative relationship between risk aversion and recreational intentions (H6).

7. The Moderating Effect of Trust in Government

Trust in government serves as a moderating factor in the relationships between perceived susceptibility, health risks, and behavioral intentions. When individuals trust that government agencies are effectively managing health threats, their perceived susceptibility and health risks may be mitigated, leading to more favorable recreational intentions (Siegrist & Cvetkovich, 2000; Bargain & Aminjonov, 2020). During the COVID-19 pandemic, travelers who trusted governmental actions, such as vaccination campaigns or safety protocols, reported higher confidence in engaging in recreational activities despite potential risks (Kim & Kim, 2022). Moreover, trust in government has been found to moderate the relationship between perceived health risks and travel intentions, with individuals feeling safer and more inclined to travel when

they trust authorities to manage public health risks (Jiang & Wen, 2020). Similarly, this trust can influence risk aversion, as those with higher trust levels may exhibit less avoidance behavior (Wen et al., 2021). Therefore, trust in government significantly moderates these relationships, as proposed in H7a–H7e.

Figure 1. Conceptual Model



HYPOTHESES

H1: Perceived susceptibility has a significant positive impact on perceived risk.
H2: Perceived susceptibility has a significant positive impact on risk aversion.
H3: Perceived susceptibility has a significant negative impact on recreational intentions.
H4: Perceived risk has a significant positive impact on risk aversion.
H5: Perceived risk has a significant negative impact on recreational intentions.
H6: Risk aversion has a significant negative impact on recreational intentions.
H7a: Trust in government has a significant moderating effect between perceived susceptibility and travel intentions.
H7b: Trust in government has a significant moderating effect between perceived susceptibility and perceived risk.
H7c: Trust in government has a significant moderating effect between perceived risk and travel intentions.
H7d: Trust in government has a significant moderating effect between perceived susceptibility and risk aversion.
H7e: Trust in government has a significant moderating effect between risk aversion and travel intentions.

METHODS

The study focused exclusively on adults over the age of 18 living in South Carolina from July 2024 to August 2024. The research data was gathered through an online questionnaire, which was modeled after the RBC Canadian Water Attitudes Study conducted in 2012, 2016, and 2017, incorporating elements from a broader investigation (citation). To meet the study's aims, five key areas were explored in the survey: susceptibility, risk perception, risk aversion, trust in authorities and travel intention. A total of 167 surveys were completed.

A panel of three experts in various fields—water quality and conservation, crisis management in tourism, health and human performance with a focus on recreation and tourism, public opinion polling, and survey methodology—guided the development of the survey to ensure its reliability and validity. Participants rated their water quality concerns using a four-point Likert scale, with options ranging from no concern to great concern. To assess who should be responsible for managing clean water, a binary choice was presented, ranging from not responsible to responsible, across various stakeholders including federal, state, and municipal governments, corporations, consumers, NGOs, international commissions, or none.

Five variables are included in the model. Specifically, the items to measure perceived susceptibility (3 items) (Wang et al., 2021), risk aversion (3 items) (Zheng et al., 2020; Wang et al., 2021), perceived risk (3 items), trust in authorities (8 items) (Lee, 2011) and recreation participation intention (1 item). The measurement items of the variables were obtained through literature reviews. All the measurement items in the paper were measured on a 5-point Likert scale (where 1 = strongly disagree, and 7 = strongly agree).

Data collection was facilitated by Pollfish™, a research firm specializing in public opinion polling through a non-probability Random Device Engagement (RDE) approach. This method employs machine learning to identify and filter out fraudulent or insincere responses, ensuring the integrity of the data. Participants were incentivized with unique non-monetary rewards to discourage permanent panel membership, and a detailed demographic analysis was performed to understand the respondent profile, which included a balanced gender distribution among participants.

Trust in Authorities- Q3 & q4 (5 items + 3 items)
Perceived Susceptibility- Q9 (3 items)-
Recreation participation-Q16 (1 Item)-
Perceived risk-Q18- (3 items)
Risk aversion -q16 (3 items)

Construct	Item
Perceived Susceptibility	
PS1	I am at risk of getting a waterborne illness from high levels of bacteria or algae when swimming or recreating in South Carolina Lakes
PS2	I will easily get a waterborne illness if I swim/recreate in South Carolina lakes
PS3	I am vulnerable to waterborne illnesses from high levels of bacteria or algae if I swim or recreate
Risk Perception	
RP1	I think the water is unpleasant for swimming (yucky)
RP2	I am afraid of getting sick
RP3	I am afraid of long-term health effects
Risk aversion	
RA1	I won't get in the water during my travel to South Carolina, so I don't have to worry about illness from recreational freshwater.
RA2	I have always been healthy and have a strong immune system, so I will be fine if I get in the freshwater in SC (reverse code)
RA3	I do not think much about health risks when I travel, my trip to freshwater sites in SC is no exception (reverse code)
Recreational participation intention	
RP1	I plan to visit South Carolina's fresh water sites in the near future
Trust in water authority	
TA1	The water authority is dependable
TA2	The water authority is honest
TA3	The water authority is reliable
TA4	The water authority is sincere
TA5	The water authority is trustworthy

Results

Table 1: ***Demographics of Respondents***

Gender			
	Frequency	Percent	Cumulative Percent
Female	81	48.5	48.5
Male	86	51.5	100.0
Total	167	100.0	
Age			
	Frequency	Percent	Cumulative Percent
> 54	23	13.8	16.8
18 - 24	32	19.2	32.9
25 - 34	44	26.3	59.3
35 - 44	45	26.9	86.2
45 - 54	23	13.8	100.0
Total	167	100.0	
Education			
	Frequency	Percent	Cumulative Percent
High School	73	43.7	43.7
Middle School	12	7.2	50.9
Postgraduate	21	12.6	63.5
University	31	18.6	82.0
Vocational Technical College	30	18.0	100.0
Total	167	100.0	

Table 1 (con't): Demographics of Respondents : Employment Status			
	Frequency	Percent	Cumulative Percent
Employed	82	49.1	49.1
Homemaker	14	8.4	57.5
Other	5	3.0	60.5
Retired	5	3.0	63.5
Self Employed	18	10.8	74.3
Student	15	9.0	83.2
Unable To Work	8	4.8	88.0
Unemployed but Looking	19	11.4	99.4
Unemployed Not Looking	1	0.6	100.0
Total	167	100.0	
Race			
	Frequency	Percent	Cumulative Percent
Asian	1	0.6	0.6
Black	48	28.7	29.3
Hispanic	4	2.4	21.7
Latino	4	2.4	34.1
Multiracial	3	1.8	35.9
Other	6	3.6	39.5
Prefer Not To Say	7	4.2	43.7
White	94	56.3	100.0
Total	167	100.0	

Construct	Item	Mean	Std. Dev.
Perceived Susceptibility		3.23	1.20
PS1	I am at risk of getting a waterborne illness from high levels of bacteria or algae when swimming or recreating in South Carolina Lakes	3.16	1.48
PS2	I will easily get a waterborne illness if I swim/recreate in South Carolina lakes	3.36	1.41
PS3	I am vulnerable to waterborne illnesses from high levels of bacteria or algae if I swim or recreate	3.18	1.47
Risk Perception		2.50	1.05
RP1	I think the water is unpleasant for swimming (yucky)	2.37	1.35
RP2	I am afraid of getting sick	2.64	1.29
RP3	I am afraid of long-term health effects	2.50	1.38
Risk aversion		3.11	0.80
RA1	I won't get in the water during my travel to South Carolina, so I don't have to worry about illness from recreational freshwater.	2.75	1.32
RA2	I have always been healthy and have a strong immune system, so I will be fine if I get in the freshwater in SC (reverse code)	3.36	1.32
RA3	I do not think much about health risks when I travel, my trip to freshwater sites in SC is no exception (reverse code)	3.23	1.35
Recreational participation intention		2.45	1.27
RP1	I plan to visit South Carolina's fresh water sites in the near future	2.45	1.27
Trust in water authority		3.52	0.86
TA1	The water authority is dependable	3.57	1.18
TA2	The water authority is honest	3.46	1.17
TA3	The water authority is reliable	3.55	1.12
TA4	The water authority is sincere	3.47	1.17
TA5	The water authority is trustworthy	3.54	1.21

***N=1000**

DISCUSSION

The comprehensive analysis of public opinion on water quality and management in South Carolina highlights a deeply ingrained concern among residents regarding the state of their water resources. This concern spans from the direct implications of water quality on health to broader environmental and economic impacts. Studies consistently show that water quality is a critical issue for communities worldwide, affecting not only public health but also biodiversity, ecosystem services, and local economies (Schwarzenbach et al., 2010). In South Carolina, residents have expressed significant anxiety over the potential health risks associated with water pollution, including the unpleasantness of water for recreational activities, the immediate risk of getting sick, and the long-term health effects of exposure to contaminated water (WHO, 2019).

The identification of major pollution sources, such as illegal dumping of toxins, runoff of pollutants, and industrial wastage, underscores the necessity for stringent regulatory measures and responsible corporate practices (Harrison, 2001). This aligns with global findings where effective water management has been linked to the implementation of comprehensive regulatory frameworks that ensure sustainable water use and pollution control (OECD, 2015).

The assignment of responsibility to a wide range of stakeholders, including government bodies, corporations, and individuals, reflects a broader understanding that water management is a shared responsibility. This is consistent with the principles of integrated water resources management (IWRM), which advocate for a coordinated approach to managing water and related resources to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems (Global Water Partnership, 2000).

Moreover, the strong public support for stricter water use standards and the incorporation of scientific research into water management decisions mirrors the global consensus on the need for evidence-based policies and practices in environmental stewardship (United Nations World Water Assessment Programme, 2018). The call for full-cost pricing mechanisms for water services suggests a recognition of the true value of water resources and the importance of economic instruments in promoting conservation and sustainable use (Rogers, De Silva, & Bhatia, 2002).

These findings from South Carolina offer valuable insights into public perceptions and expectations regarding water quality and management, echoing broader global concerns and priorities. It highlights the urgent need for concerted efforts and innovative approaches to safeguard water resources, underscoring the critical role of governance, corporate responsibility, and community engagement in achieving sustainable water management outcomes. Future policies and strategies should be informed by these insights, integrating public concerns with best practices from around the world to ensure the long-term viability and quality of water resources in South Carolina and beyond.

RECOMMENDATIONS

To address the concerns highlighted by the residents of South Carolina regarding water quality and management, the following recommendations are proposed for the state government, relevant stakeholders, and policymakers:

1. Strengthen environmental regulations concerning water quality to include stringent limits on pollutants, regular monitoring, and enforcement actions against non-compliance. This should encompass both point sources, such as industrial discharges, and non-point sources, like agricultural runoff.
2. Encourage industries to adopt cleaner production techniques and water-saving technologies through incentives and support programs. Implementing full-cost pricing for industrial water use can also drive efficiency and conservation.
3. Allocate resources towards upgrading and expanding water treatment facilities to handle pollutants effectively and cope with the demands of a growing population. This includes investments in modernizing sewage systems to reduce leaks and prevent contamination.
4. Develop comprehensive education campaigns to raise public awareness about the importance of water conservation, the impacts of pollution, and ways individuals can contribute to water quality improvement. Engaging communities in water management decisions can foster a sense of responsibility and collective action.
5. Utilize scientific research and data analytics in water management policies and practices to ensure they are effective and adaptive to changing environmental conditions. This includes embracing innovative technologies for water quality monitoring and treatment.
6. Foster collaborations between state and local governments, industries, NGOs, and communities to facilitate integrated water resources management (IWRM). Such partnerships can leverage the strengths and resources of each stakeholder for more effective water management.
7. Implement conservation and restoration projects for lakes, rivers, and wetlands that serve as critical water sources and habitats. Protecting these areas from pollution and degradation is essential for maintaining biodiversity and ecosystem services.
8. Develop and implement adaptation strategies to address the challenges posed by climate change on water resources, including increased droughts, flooding, and sea-level rise. This includes improving water storage and distribution infrastructure to enhance resilience.
9. Enact laws that regulate the extraction of groundwater to prevent overexploitation and contamination. Licensing for groundwater use by commercial enterprises should be mandatory to ensure sustainable usage.

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