

# Study on the Influence of Environmental Destination Social Responsibility Strategies on Ecological Value Co-Creation Behavior of Island Tourists

Miaoling Liu<sup>1\*</sup>, Ying Tang<sup>2</sup>, An-Shin, Shia<sup>3</sup>

Corresponding Author: 1014483283@qq.com\*

<sup>1\*</sup>, Associate Professor, Business School, Lingnan Normal University, Zhanjiang, Guangdong, China; Guangdong Coastal Economic Belt Development Research Center, Zhanjiang, China

<sup>2</sup> Associate Professor, Business School, Lingnan Normal University, Zhanjiang, Guangdong, China

<sup>3</sup> Associate Professor, Business School, Lingnan Normal University, Zhanjiang, Guangdong, China

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**ABSTRACT:** Purpose: This study examines how environmental destination social responsibility (Env DSR) strategies affect tourists' ecological value co-creation behavior on islands, and tests the chain mediation of destination trust and altruism motives.

Patients and methods: The present study involved the execution of three research laboratory experiments utilizing a between-subjects factorial design. Study 1 (N=102) demonstrated significantly higher levels of eco-citizenship behavior among island tourists exposed to the pre-crisis environmental DSR strategy compared with the post-crisis strategy. In study 2 (N=202), we introduce a new dimension to assess the chain mediation of destination trust and altruistic motivation. Findings indicate that altruism motive and destination trust play an intermediary role between Env DSR strategies and tourist citizenship behavior, and there is a chain intermediary. In study 3 (N=84) reveals that apology strategies during crises specifically increased ecological participation behavior but not citizenship behavior.

Conclusion: Tourists' altruism motive, destination trust and ecological citizenship behavior tended to be higher when a destination applied the pre-crisis (vs. post-crisis) Env DSR strategy on islands. In fact, the findings provide valuable insights for island managers or resort managers.

**KEY WORD:** Destination social responsibility; Attribution theory; Destination trust; Ecological value co-creation behavior.

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## I. INTRODUCTION

Tourism has the potential to foster regional economic growth; however, overtourism may result in the degradation of the destination's social, cultural, and environmental fabric (Benner, 2020). Compared to the mainland, islands have a smaller area, depend heavily on marine ecological resources, and possess a fragile ecosystem (Bai et al., 2022), consequently, the adverse effects of overtourism on island regions are more pronounced. The detrimental impact of overtourism on island destinations extends beyond hindering their sustainable development, it also poses significant threats to marine ecosystems. Sustainable tourism serves as a vital strategic approach to mitigate the adverse impacts of overtourism (Gowreesunkar & Seraphin, 2019). Tourist value co-creation behaviors can significantly contribute to sustainable development (Elliot et al., 2023). Thus, it is crucial to comprehend the mechanisms for engaging tourists in value co-creation to enhance the ecological sustainability of the destination.

Since the 1990s, the concept of value co-creation has garnered significant academic attention. As research on value co-creation theory deepens, scholars have applied it to explore various perspectives, including management (Mathibe et al., 2022), innovative entrepreneurship (Portuguez-Castro, 2023) and marketing (Sohaib & Han, 2023), and it has become the most popular research topic in the tourism industry (Maruyama, Keith, & Woosnam, 2019). The research on value co-creation in the tourism sector primarily emphasizes enhancing the service experience of tourists (Finsterwalder & Kuppelwieser, 2020). From the perspective of a service ecosystem, the value of a tourism ecosystem encompasses not only tourist experiences but also the sustainable cultural, social, and emotional values contributed by various stakeholders (Font et al., 2021). However, the majority of existing research emphasizes the value of the visitor experience, while there is a notable gap in studies that examine tourists' participation in the co-

creation of sustainable value or ecological value. In addition, tourism value co-creation focuses on the interaction of different participants and their value co-creation, in particular, employees and tourists (Teng & Tsai, 2020 ; Uslu & Tosun, 2023 ; Leong et al., 2024), tourists and tourists (Lin et al., 2021), tourists and residents (Chen et al., 2020 ; Yang, et al., 2021), enterprises and enterprises (Hamidi et al., 2019 ; Tuan et al., 2019). The current research covers the tourism service fields such as hotels (Cui et al., 2024 ; Liet al.,2024), scenic spots (Leong et al., 2024), travel agencies (Singhet al., 2022), ethnic tourism communities (Hamidiet al., 2019), online platforms(Jiang, 2024), artificial intelligence platforms (Chuang, 2023 ; Solakiset al., 2022), and also discusses the value co-creation in various forms of natural tourism, cultural tourism. However, in the context of island tourism, existing literature reveals a notable gap in research. Compared to inland regions, the ecological stability of islands is generally lower, resulting in a more fragile ecological environment(Baiet al., 2022). Thus, exploring tourists' involvement in island ecological value co-creation is crucial for promoting the sustainable development of island ecosystems.

On the other hand, prior research has acknowledged the significant roles of tourist factors, interpersonal factors, and destination factors in fostering tourists' engagement in value co-creation (Carvalho & Alves, 2022). Specifically, studies focusing on the impact of destination factors have demonstrated that proactive fulfillment of social responsibilities can enhance tourist value co-creation behaviors (Badaret al., 2024). However, the impact of different types of destination social responsibility (DSR) strategies on tourist value co-creation remains underexplored. Environmental destination social responsibility (Env DSR) is an important part of DSR (Farrington et al., 2017). The eco-destination image will affect tourists' travel intention (Chi & Pham, 2022), therefore, Env DSR should also be paid attention to. Exploring the impact of Env DSR strategies holds significant value. Destination managers may adopt different Env DSR strategies, such as reactive and proactive strategies (Su et al., 2020), pre-crisis and post-crisis strategies (Kim & Choi, 2016).

To fill this research gap, this research explores how Env DSR strategies influence ecological value co-creation behavior of island tourist. Therefore, our study aims to answer the three fundamental research questions.

Q1. How does Env DSR Strategies (Pre-crisis or post-crisis Env DSR) affect tourist ecological value co-creation behavior ?

Q2. How do different crisis communication strategies (apology strategy or scapegoat strategy) incorporated into post-crisis Env DSR influence ecological value co-creation behavior of island tourist?

To address this issue, we employ attribution theory to posit that when tourists learn about the Env DSR strategies, they are likely to attribute these actions to the destination's management, thereby fostering robust trust in the destination. This trust can subsequently motivate tourists to allocate their exchangeable resources towards co-creating ecological value. First, we examine the influence of Env DSR strategies on ecological value co-creation of island tourist. Second, we examine the mediating effects of altruism motive attribution and destination trust. Thirdly, we also examine the chain mediation effects of altruism motive attribution and destination trust. Finally, based on situational crisis communication theory (SCCT), we study the relationship between different crisis communication strategies (apology or scapegoat strategy) in the post-crisis Env DSR and ecological value co-creation of island tourists.

Taking Chinese tourists as experimental subjects, this study explored the mechanism of influence of Env DSR strategies on ecological value co-creation of island tourist through investigation and experiment. After the end of the COVID-19, Chinese tourism industry has entered a phase of robust recovery. In 2023, the number of domestic tourists in China reached 4.891 billion, an increase of 93.3% over the previous year, and the number of inbound and outbound tourists exceeded 190 million, an increase of more than 2.8 times over 2022. This indicates that Chinese tourism industry has experienced a rapid recovery, and the Chinese tourism market is poised to make significant contributions to the global tourism sector. Consequently, Chinese tourists serve as a representative research subject.

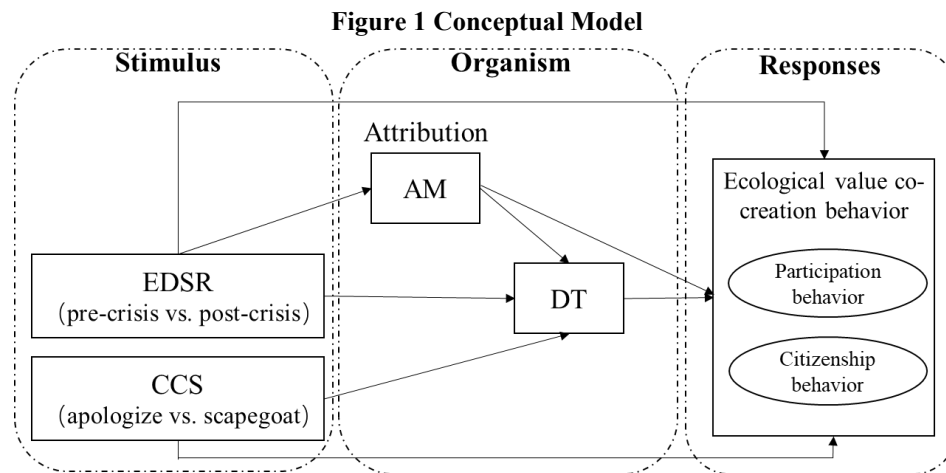
The remainder of this article is organized as follows. First, we present the theoretical background and review relevant literature. Next, we detail the design, execution, and analysis of results for experiment 1, experiment 2 and experiment 3. Finally, we provide conclusions, discuss limitations, and offer further discussion.

## **II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

### **2.1 SOR Model**

The SOR (Stimulus-Organism-Response) model is an evolution of the SR (Stimulus-Response) model proposed by behavioral ethologist John B. Watson and John Wilson in 1915. In this model, "S" refers to external environmental factors that trigger individual psychological and cognitive responses (Lin & Lo, 2015). "O" refers

to the cognitive and emotional processes that mediate between stimuli and behavior (Chanet al., 2017). “R” refers to the response, represents the ultimate behavioral or intentional reaction that is elicited following the influence of stimuli and organic factors. This study adopted the SOR model framework as a foundation, Env DSR strategies as stimuli, organics related to tourist’ altruistic motive and destination trust, ecological value co-creation of island tourists as the final response. (Figure 1)



**Fig.1.**

Notes: EDSR stands for Env DSR strategies; CCS stands for crisis communication strategies; AM stands for altruism motive attribution; DT stands for destination trust.

## 2.2 Env DSR Strategies

Environmental corporate social responsibility (Env CSR) is part of CSR (Farrington et al., 2017). Env CSR is characterized by two key dimensions: a company's commitment to climate responsibility and the sustainable utilization of natural resources (Johns & Khojastehpour, 2014). Env CSR promotes sustainable societal development, boosts corporate competitiveness and brand image, and encourages positive stakeholder interactions (Johns & Khojastehpour, 2014 ; Kumar et al., 2024). Scholars have extended the concept of CSR to the realm of destination management, thereby introducing the notion of DSR (Su & Swanson, 2017). The dimensions of DSR include economic, environmental, social, stakeholder, voluntariness, stakeholder responsibility (Su, Swanson, & He, 2019). This paper focuses on Env DSR, where destination managers incorporate environmental protection and management into daily governance to ensure sustainability and support regional economic development. At present, there are many researches on DSR (Agapito et al., 2022), but there are few researches on the impact of the single dimension of Env DSR. Based on Kim, Choi (2016) research, this paper divides Env DSR strategies into pre-crisis and post-crisis Env DSR. Pre-crisis Env DSR refers to the destination's proactive communication of environmental responsibility initiatives to tourists before an ecological crisis. Post-crisis Env DSR refers to the socially responsible actions taken by the destination after an ecological crisis.

## 2.3 Ecological value Co-Creation of Tourists

Value co-creation has garnered significant academic attention since the 1990s. With the advancement of social networks, examining value co-creation from a consumer perspective has emerged as a critical focus in marketing research (Hajli et al., 2017). With the in-depth study of value co-creation theory, scholars have increasingly applied it to explore various perspectives, such as tourism (Ribeiro et al., 2023), innovative entrepreneurship (Shams & Kaufmann, 2016) and social media (Rashid et al., 2019). From an ecological perspective, the value includes the total worth of ecosystem products and services that enhance human well-being and support sustainable social development (Nie et al., 2022). Ecological value encompasses the worth of ecological products and ecosystem services, integrating environmental, economic, and social values (Nie et al., 2022). This study considers ecological value in its broadest sense. Realizing, maintaining, and enhancing ecological value is a dynamic process influenced by stakeholders. However, literature on this process and the involved stakeholders is limited. Tourists' behaviors significantly impact destination ecology, so tourists and other stakeholders should collaborate to create and enhance ecological value.

Ecological value co-creation of tourists involves participating in local ecological management activities or interacting with stakeholders, thus contributing to ecological value during travel experiences (Nie et al., 2022). It covers eco-friendly behaviors, interactions with other tourists and local managers, feedback on environmental information, participation in eco-tourism initiatives, purchasing eco-friendly products, and

sharing ecological experiences. According to the research of consumer value co-creation behavior (Yi & Gong, 2013), ecological value co-creation behavior of tourists is divided into ecological participation behavior and ecological citizenship behavior.

## **2.4 Env DSR Strategies and Ecological Value Co-Creation Behavior of Island Tourists**

A substantial body of research showed that enterprises engaging in CSR can enhance their corporate image and customer trust (Kim & Ham, 2016 ; Liu et al., 2019). According to Wu, Huang, Tsai and You (2023), empirical research demonstrates that CSR enhances customer identification and trust, thereby stimulating customer citizenship behavior. CSR plays a key role in stimulating customer participation behavior and customer citizenship behavior (Mubushar et al., 2024). However, reactive CSR initiatives stemming from irresponsible behavior can lower consumer ratings and alter positive attitudes toward companies (Su et al., 2020 ; Ricks, 2005)

In addition, post-crisis CSR can be perceived by consumers as insincere or opportunistic (Vanhamme & Grobben, 2008), in turn, consumers have negative feelings towards enterprises (Rim & Kim, 2016). Tourists perceive pre-DSR as more sincere than post-crisis DSR. They may exhibit a more positive attitude toward pre-crisis DSR activities and demonstrate a greater willingness to engage in ecological value co-creation. Therefore, we assume that:

H1 Pre-crisis (vs. post-crisis) Env DSR strategy will have a positive effect on ecological value co-creation behavior of island tourists.

H1a Pre-crisis (vs. post-crisis) Env DSR strategy will have a positive effect on ecological participative behavior of island tourists.

H1b Pre-crisis (vs. post-crisis) Env DSR strategy will have a positive effect on and ecological citizenship behavior of island tourists.

## **2.5 The Mediating Effect of Altruism Motive Attribution**

Implementing Env DSR strategies can alter tourists' perceptions of island organizers' ecological conservation efforts. Attribution involves inferring the causes of events or behavior (Kelley & Michela, 1980). In CSR attribution research, motivations can be categorized as altruism or egoism motive (Jeon & An, 2019). Consumers show more trust and positive attitudes when they believe a company's CSR efforts are altruistically motivated (Dai & Guo, 2024). Conversely, perceiving CSR as egoistically driven leads to negative attitudes and lower purchase intentions (Min et al., 2023). After understanding Env DSR, island tourists can explore the underlying reasons instead of staying at a superficial level. Compared to post-crisis Env DSR strategy, pre-crisis Env DSR strategy is more likely to result in altruism motive attribution among island tourists (Su et al., 2020).

Reciprocity theory posits that when individuals perceive personal benefits, they experience psychological pressure to reciprocate with equivalent benefits (Falk & Fischbacher, 2006). DSR can stimulate the guilt of individuals for not making returns (Liua et al., 2024). After understanding Env DSR, island tourists can delve into the underlying reasons rather than remaining at a superficial level (Kim et al., 2023). When island tourists view DSR altruistically, they recognize the island's social contribution and are motivated to reciprocate. However, egoistic attribution makes it difficult for tourists to show similar effort. The following hypothesis is proposed:

H2 Tourists' altruism motive attributions play a mediating role in the relationship between Env DSR strategies and ecological value co-creation behavior of island tourists.

H2a Tourists' altruism motive attributions play a mediating role in the relationship between Env DSR strategies and ecological participative behavior of island tourists.

H2b Tourists' altruism motive attributions play a mediating role in the relationship between Env DSR strategies and ecological citizenship behavior of island tourists.

## **2.6 The Mediating Effect of Destination Trust**

In tourism, DSR strategies signal to visitors that the destination is reliable and trustworthy. Destination trust refers to tourists' confidence that the destination will fulfill their expectations and their willingness to accept associated risks. This concept encapsulates tourists' faith and assurance in the reliability of the destination (Liu & Derong, 2018). Trust develops when one party views the other as reliable and consistent with expectations (Blau, 1964). Many researches have confirmed that destination trust is an important antecedent for tourists' participation in value co-creation (Arica et al., 2023 ; Chuangxin et al., 2024).

H3 Destination trust will actively mediate the relationship between Env DSR strategies and ecological value co-creation behavior of island tourists.

H3a Destination trust plays a mediating role in the relationship between Env DSR strategies and ecological participative behavior of island tourists.

H3b Destination trust plays a mediating role in the relationship between will Env DSR strategies and ecologicalcitizenship behavior of island tourists.

## **2.7 Chain Mediation of Altruism Motive and Destination Trust**

Whether DSR strategies can enhance tourists' trust in a destination is contingent upon the specific attribution circumstances. Intrinsic motivation significantly enhances tourists' trust (Su et al., 2020). Destination trust often leads to positive behaviors, such as pro-environmental behaviors (Aziz & Niazi, 2024), visitor intentions (Su et al., 2022 ; Shen et al., 2022) and revisit intention(Chang et al., 2023). Trust is crucial for consumer participation in co-creation. In tourism, trust influences tourists' motivation to participate in co-creation and re-participate in co-creation (Arica et al., 2023). Therefore, we reasonably predict the chain mediating effect of altruism motive and destination trust between Env DSR strategies and tourist ecological value co-creation behavior, and proposed the following hypothesis:

H4 Altruism motive attribution and destination trust play a chain mediation role in the relationship between Env DSR strategies and ecological value co-creationbehavior of island tourists.

H4a Altruism motive attribution and destination trust play a chain mediation role in the relationship between Env DSR strategies and ecologicalparticipative behavior of island tourists.

H4b Altruism motive attribution and destination trust play a chain mediation role in the relationship between will Env DSR strategies and ecologicalcitizenship behavior of island tourists.

## **2.8 Crisis Communication Strategies and Ecological Value Co-Creation Behavior of Island Tourists**

According to SCCT, different crisis communication strategies should be used for different types of crises. For preventable crises, reconstruction strategies like apology and compensation are recommended. For unpreventable crises, denial strategies such as denying or scapegoating are suggested (Coombs & Holladay, 2007). The apology strategy in the reconstruction approach can lessen consumers' negative emotions, especially when seen as sincere and paired with corrective actions (Langaro et al., 2022). Denial and silence can rebuild trust, and denial is the best strategy for preventable crises like scapegoating69,70.Yu, Cheng, Yang and Yu (2022) found that hotels using the scapegoat strategy during COVID-19 reduced consumers' perception of the company's crisis responsibility, controllability, and stability. However, the apology strategy was more effective in enhancing consumer reputation. In this study, when an ecological pollution crisis occurs at the destination, it suffers from reduced tourist numbers and a decline in the local tourism economy (Prideaux et al., 2021). Therefore, based on SCCT, the destination can use an apology strategy to mitigate negative impacts. However, the ecological crisis may also stem from organizational inaction (Stovall et al., 2019), and the destination should adopt the scapegoat strategy. Therefore, the coping strategies used by destinations based on SCCT can be categorized into apology and scapegoat strategies. Adopting an apology strategy to address environmental pollution crises is more likely to evoke positive emotions, promoting higher levels of ecological value co-creation among island tourists. Based on this, this paper assumes:

H5 Compared with scapegoat strategy, apology strategy can promote ecological value co-creation behavior of island tourists.

H5a Compared with scapegoat strategy, apology strategy can promote ecologicalparticipative behavior of island tourists.

H5b Compared with the scapegoat strategy, apology strategy can promote ecologicalcitizenship behavior of island tourists.

## **2.9 The Mediating Effect of Destination Trust on Ccs and Ecological Value Co-Creation Behavior of Island Tourist**

Under the brand crisis communication strategies, consumers will form different degrees of brand trust (Hegner et al., 016). Apology is an effective way to rebuild trust when the brand has a trust crisis (Yang, 2024), and the apology in the case of competence crisis is more effective than that in the case of moral crisis (Lewicki & Brinsfield, 2017). Denial strategies are also a way to rebuild trust, but denial alone can undermine brand trust (Li & Yang, 2024). Denial strategy is more effective than apology strategy in moral crisis, and apology strategy is more effective than denial strategy in competency-based crisis (Lewicki & Brinsfield, 2017). When consumers have higher trust in the brand, their participation in value co-creation will be more active (Wallace et al., 2021 ; Sohaib & Han, 2023). Therefore, the higher the degree of trust in the destination, the higher the tourists perceive the ecological governance efforts of the destination, and the more active they may participate in the co-creation of ecological value. Based on this, this paper proposes the following hypothesis:

H6 Destination trust will actively mediate the relationship between CCS and ecological value co-creation behavior of island tourists.

H6a Destination trust will actively mediate the relationship between CCS and ecologicalparticipative behavior of island tourists.



H6b Destination trust will actively mediate the relationship between CCS and ecological citizenship behavior of island tourists.

### III. STUDY 1

#### 3.1. Study Design and Stimulus Development

The purpose of Study 1 is to validate Hypotheses 1 and Hypothesis 3. In Experiment 1, we used a single-factor between-groups design with two conditions: pre-crisis and post-crisis Env DSR strategies. We recruited 102 subjects on the platform (<https://www.credamo.com>) and randomly assigned them to different experimental groups.

Before answering questions, subjects imagined traveling to an island to view pre-designed news stimuli (see **Appendix 1**). The pre-crisis group noted consistent ecological protection efforts by island managers. In contrast, the post-crisis group reported current measures addressing prior ecological neglect. After reviewing the stimuli, participants assessed ecological value co-creation and destination trust, followed by demographic measurements. The experiment then concluded.

#### 3.2. Sample and Data Collection

In experiment 1, we recruited 102 participants and randomly assigned them to two groups. The participants imagined themselves traveling on an island and answered questions about news content to ensure the questionnaire's reliability. To assess the validity, we included a test item that participants read: "If you see this question, please select option 1." Among the 102 participants, 8 participants gave incorrect responses and were excluded, resulting in a final sample of 94 valid responses. Each group consisted of 47 participants, with males accounting for 64.9% of the total sample.

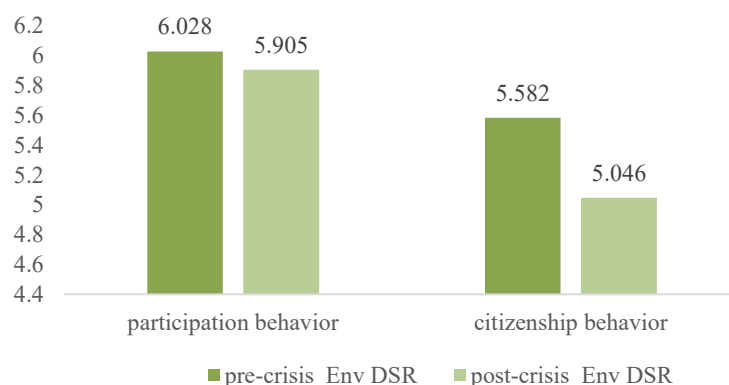
#### 3.3. Dependent Measures

In order to measure ecological value co-creation behavior of island tourists, we referred to the studies conducted by (Ricks, 2005 ; Hsiao et al., 2015) and (Nie et al., 2022), and put forward the measurement scale of ecological value co-creation behavior (see **Appendix 3**). Ecological value co-creation behavior includes participation behavior and citizenship behavior. The Cronbach's  $\alpha$  coefficients for participation behavior and citizenship behavior were 0.804 and 0.786.

#### 3.4. Results

##### 3.4.1 The Impact of Env Dsr Strategies on Ecological Value Co-Creation Behavior of Island Tourists

The results of the ANOVA, which utilized participation behavior and citizenship behavior as dependent variables, indicated that the Env DSR strategies do not significantly influence ecological participation behavior of island tourists ( $M_{pre} = 6.028, SD = 0.599$  vs.  $M_{post} = 5.905, SD = 0.668, F = 0.878, p = 0.351$ ) (see Figure 2). H1a were not supported. Compared with post-crisis strategy, pre-crisis Env DSR strategy improved ecological citizenship behavior of island tourists ( $M_{pre} = 5.582, SD = 0.716$  vs.  $M_{post} = 5.046, SD = 1.088, F = 7.938, p = 0.006$ ), so H1b was supported (see **Figure 2**).



**Figure 2 Impact of Env DSR Strategies on Ecological Value Co-Creation of Island Tourists**

##### 3.4.2 The Mediation Effect of Destination Trust

Because there is no significant correlation between Env DSR strategies and ecological participation behavior of island tourists, so H2a was not supported. We only test the mediation effect of destination between Env DSR strategies and citizenship behavior. To test the mediation of destination trust, we used (Hayes, 2013) bootstrapping method (PROCESS Macro Model 4), the results are shown in **Table 1** and **Table 2**. The results showed that Env DSR strategies reduce destination trust ( $\beta = -0.963, SE = 0.199, T \text{ value} =$

−4.830,  $\rho = 0.000$ ), and destination trust positively affects ecological citizenship behavior ( $\beta = 0.522$ ,  $SE = 0.084$ ,  $T$  value = 6.628,  $\rho = 0.000$ ). After controlling for the direct effects of Env DSR strategies ( $\beta = -0.033$ ,  $SE = 0.179$ ,  $T$  value = −0.182,  $\rho = 0.856$ ), the mediation effect of destination trust ( $\beta = -0.503$ , 95% CI = −0.859~ −0.213 ) was significant. So H2b was supported.

**Table 1 Destination Trust Mediation Effect Results (1)**

	CB		DT		CB	
	$\beta$	t	$\beta$	t	$\beta$	T
EDRS	-0.536	-2.818*	-0.963	-4.83***	-0.033	-0.182
DT					0.522	6.248***
R2	0.079		0.202		0.356	
F(df)	7.938		23.324		25.128	

Notes:\* for  $\rho < 0.05$ ; \*\* for  $\rho < 0.01$ ;\*\*\* for  $\rho < 0.001$

**Table 2 Destination Trust Mediation Effect Results (2)**

Effect type	path	Effect size	boot SE	boot 95% CI	
				LLCI	ULCI
total effect	EDSR-CB	-0.536	0.190	-0.913	-0.158
direct effect	EDSR-CB	-0.033	0.179	-0.388	0.323
indirect effect	EDSR-DT-CB	-0.503	0.165	-0.859	-0.213

## IV. STUDY 2

### 4.1. Study Design and Stimulus Development

The purpose of Study 2 is to validate H1, H2 and H3. Experiment 2 replicated Experiment 1 with different samples of actual island tourists. The procedure was identical to Experiment 1 and involved two groups: pre-crisis strategy and post-crisis strategy. The same stimuli materials from Experiment 1 were used for reading news (see **Appendix 1**).

### 4.2. Sample And Data Collection

This experiment was carried out on the island of Zhanjiang City, and a total of 202 tourists volunteered to participate in the experiment. A total of 200 valid questionnaires (40.5% male) were obtained by eliminating the wrong answers to the test questions in the experiment.

### 4.3. Dependent Measures

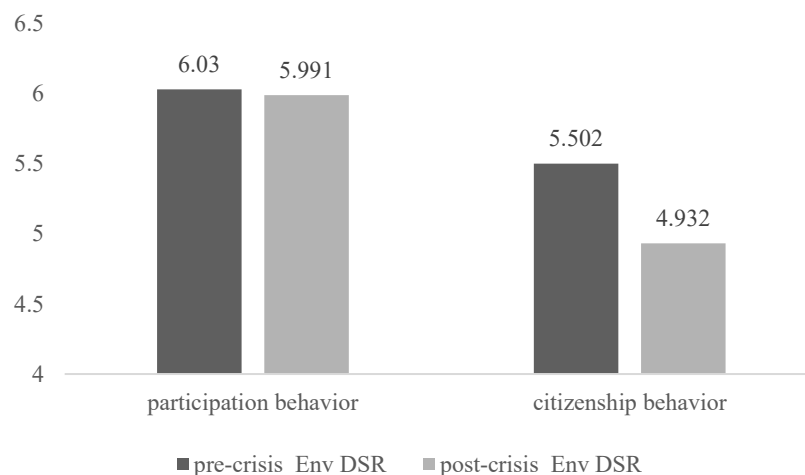
The measurement scale of ecological value co-creation behavior and destination trust is consistent with experiment 1 (see **Appendix 3**). Cronbach's  $\alpha$  of destination trust, altruistic motivation, participation behavior and citizenship behavior were all greater than 0.7. The values are 0.887, 0.863, 0.830 and 0.766.

## 4.4. Result

### 4.4.1 The Influence of Env Dsr Strategies on Ecological Value Co-Creation Behavior of Island Tourists

The results of ANOVA showed that there is no significant difference between ecological participation behavior ( $M_{as} = 5.78$ ,  $SD = 0.66$  vs.  $M_{ps} = 5.74$ ,  $SD = 0.83$ ,  $F = 0.364$ ,  $\rho = 0.716$ ) of tourists under either pre-crisis strategy or post-crisis strategy (see **Figure 3**). H1a were not supported again. Compared with post-crisis strategy, pre-crisis strategy improved ecological citizenship behavior ( $M_{as} = 5.92$ ,  $SD = 0.70$  vs.  $M_{ps} = 5.56$ ,  $SD = 0.98$ ,  $F = 2.955$ ,  $\rho = 0.004$ ), so H1b was supported again (see **Figure 3**).

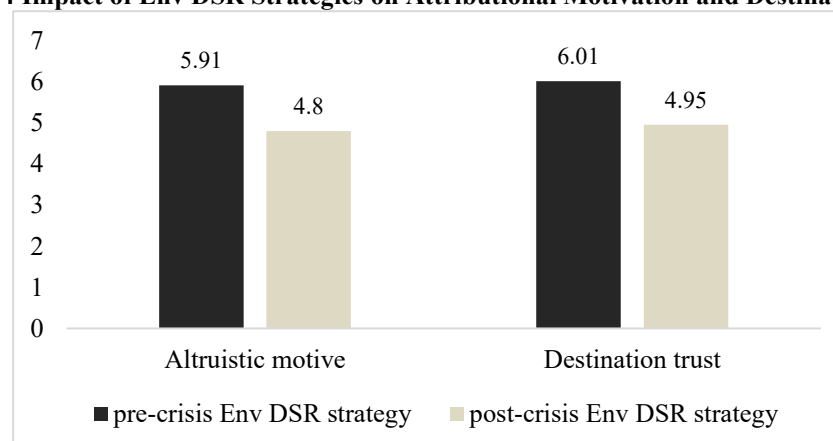
**Figure 3 Impact of Env DSR Strategies on Ecological Value Co-Creation of Island Tourist**



#### 4.4.2 The Mediation Effect of Altruism Motive Attribution and Destination Trust

We used two mediating variables as dependent variables to conduct ANOVA, the results are shown in **Figure 4**. The pre-crisis strategy is more likely to cause tourists' altruism motive attribution ( $M_{as} = 5.91, SD = 0.72$  vs.  $M_{ps} = 4.80, SD = 1.30$ ,  $T$  value = 7.487,  $p = 0.000$ ) and destination trust ( $M_{as} = 4.96, SD = 1.26$  vs.  $M_{ps} = 5.43, SD = 0.97$ ,  $T$  value = -2.954,  $p = 0.004$ ), while the post-crisis strategy is more likely to reduce tourists' destination trust.

**Figure 4 Impact of Env DSR Strategies on Attributional Motivation and Destination Trust**



Then, the study tested the chain mediation mechanism of Env DSR strategies on island tourists' ecological value co-creation behavior using (Hayes, 2013) bootstrapping method (PROCESS Macro Model 6). Because there was no significant correlation between Env DSR strategies and ecological participation behavior of island tourists, so H2a, H3a and H4a were not supported. We only tested the mediation effect of destination between Env DSR strategies and citizenship behavior.

The results of chain mediating effects are shown in **Table 3 and Table 4**. According to the hypothesis, there are three mediating paths between destination social responsibility strategy and tourist citizenship behavior: "Env DSR strategies → altruism motive → tourist citizenship behavior" "Env DSR strategies → trust → tourist citizenship behavior" "Env DSR strategies → altruism motive → trust → tourist citizenship behavior". Their 95% confidence intervals respectively are [-0.333, -0.017], [-0.308, 0.052], [-0.339, -0.101], confidence interval does not contain 0. These indicate that altruism motive and destination trust play an intermediary role between Env DSR strategies and tourist citizenship behavior, and there is a chain intermediary. So H2b, H3b and H4b were supported.



**Table 3 Chain Mediation Effect Results.**

Effect type	path	Effect size	boot SE	boot 95% CI	
				LLCI	ULCI
total effect	EDSR-CB	-0.570	0.115	-0.758	-0.343
direct effect	EDSR-CB	-0.046	0.114	-0.270	0.178
	EDSR-AM- CB	-0.154	0.078	-0.322	-0.019
indirect effect	EDSR-DT- CB	-0.161	0.065	-0.307	-0.055
	EDSR-AM-DT- CB	-0.209	0.059	-0.334	-0.107

Notes: EDSR stands for Env DSR strategies; CB stands for citizenship behavior; DT stands for destination trust; AM stands for altruism motive attribution.

**Table 4 Destination Trust Results in Mediation between Ccs and Participating Behavior (1).**

	PB		DT		PB	
	$\beta$	t	$\beta$	t	$\beta$	T
CCS	0.546	3.464***	0.756	3.399***	0.199	0.128
DT					0.458	7.499***
R2	0.133		0.129		0.496	
F(df)	11.997		11.550		37.935	

Note: \* for  $p < 0.05$ ; \*\* for  $p < 0.01$ ;\*\*\* for  $p < 0.001$

## V. STUDY 3

### 5.1. Study Design

The purpose of Study 3 is to validate Hypotheses 4 and Hypothesis 5. In experiment 3, a single-factor intergroup experimental design was used to test the effects of crisis repair strategies (apology strategy vs. Scapegoat strategy) on destination trust and co-creation of tourists' ecological value. The third experiment was conducted through the Credamo platform(<https://www.credamo.com>), and the subjects were all from the official test database of the platform, and they were randomly assigned to different experimental groups. Before answering questions, subjects imagined traveling to an island to view pre-designed news stimuli (see Appendix 2).

### 5.2. Sample and Data Collection

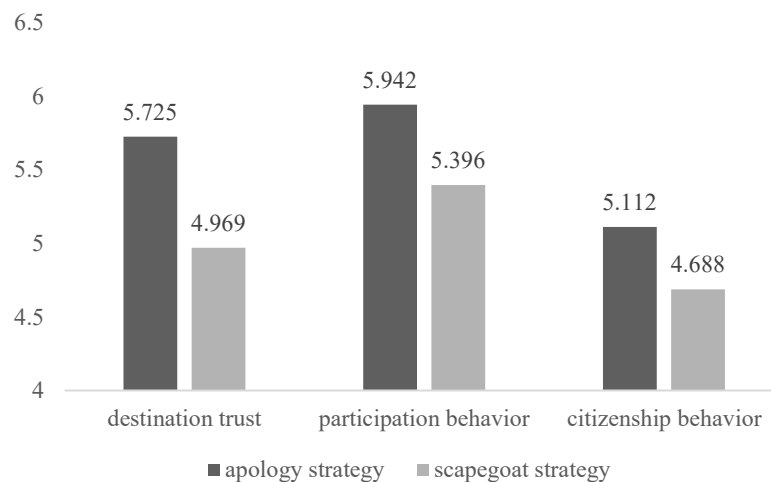
A total of 85 subjects were tested in this experiment. Of these, four samples answered in less than 90 seconds. After excluding these two invalid samples, 81 sample data remained. In addition, a measurement item of subjects' attention was added to the test to exclude and eliminate low-intervention sample data. The question was "What is 20+40?" and one of the subjects failed the attention test. After removing this sample, 80 valid sample data were obtained, and the effective rate was 97.2%. 63.7% were males and 36.3% were females.

### 5.3. Result

The measurement scale of tourist ecological value co-creation was consistent with experiment 1. All items were scored on a 7-point Likert scale (1 = completely disagree; 7 = completely agree). Ecological value co-creation was divided into ecological participation behavior and citizenship behavior, and Cronbach'  $\alpha$  coefficients were 0.851 and 0.841.

In this paper, The results (see Figure 5) of ANOVA showed that, the apology strategy significantly improved the destination trust of the subjects compared with the scapegoat strategy (M apology=5.725, SD=0.711 vs. M scapegoat=4.969, SD=1.214,  $F=11.550$ ,  $p=0.001$ ). Compared with the scapegoat strategy, the apology strategy significantly improved tourist participation behavior (M apology =5.942, SD=0.460 vs. Mscapegoat =5.396, SD=0.884,  $F=11.997$   $p=0.001$ ). It indicated that H5a was supported. But there was no significant difference between the tourist citizenship behavior under either apology strategy or scapegoat strategy (Mapology =5.112, SD=0.780 vs. Mscapegoat=4.688, SD=1.185,  $F=3.588$ ,  $p=0.062$ ), indicating that H5b was not supported.

**Figure 5 Mean Comparisons: Apology Strategy and Scapegoat Strategy**



Then, this study used the bootstrapping method of Hayes (2013) to test the intermediary mechanism of CCS affecting the co-creation behavior of tourists' ecological value on islands (Model 4).

Because there is no significant correlation between CCS and ecological citizenship behavior of island tourists, so H6b were not supported. We only took ecological participation behavior as the dependent variable, the results (see Table 4 and Table 5) showed that compared with the scapegoat strategy, the apology strategy improved destination trust ( $\beta = 0.756$ ,  $SE = 0.223$ ,  $T \text{ value} = 3.399$ ,  $\rho = 0.001$ ). Destination trust positively affected ecological participation behavior of island tourists ( $\beta = 0.458$ ,  $SE = 0.062$ ,  $T \text{ value} = 7.449$ ,  $\rho = 0.000$ ). The total effect ( $\beta = 0.546$ ,  $T \text{ value} = 3.464$ ,  $\rho = 0.001$ ,  $[LLCI=0.231, ULCI=0.860]$ ) and indirect effect ( $\beta = 0.347$ ,  $[BootLLCI=0.121, BootULCI=0.625]$ ) on ecological participation behavior were significant. The direct effect ( $\beta = 0.199$ ,  $T \text{ value} = 1.538$ ,  $\rho = 0.128$ ,  $[LLCI=-0.059, ULCI=0.457]$ ) was not significant. Therefore, destination trust played a mediating role between crisis communication strategies and tourist's ecological participation behavior. So H6a was supported.

**Table 5 Destination Trust Results in Mediation between Ccs and Participating Behavior (2)**

Effect type	path	Effect size	boot SE	boot 95% CI	
				LLCI	ULCI
total effect	CCS-PB	0.546	0.158	0.232	0.859
direct effect	CCS-PB	0.199	0.130	-0.059	0.457
indirect effect	CCS-DT-PB	0.347	0.132	0.119	0.624

Note: CCS stands for crisis communication strategies; PB stands for Participation behavior; DT stands for destination trust.

## VI. CONCLUSION AND DISCUSSION

This study examines how Env DSR strategies affect the ecological value co-creation behavior of island tourists. We found that post-crisis Env DSR strategies reduce tourist trust and subsequently lower their ecological citizenship behavior. In contrast, pre-crisis Env DSR strategies lead tourists to perceive destination managers as altruistic, enhancing trust and promoting ecological citizenship behavior. Conversely, post-crisis strategies may be seen as self-serving, reducing trust and diminishing ecological participation. Additionally, adopting an apology strategy during an ecological crisis can promote tourist participation.

### 6.1 Theoretical Implications

Although many previous studies have explored tourist value co-creation behavior (e.g., Hayes, 2013 ; Ribeiro et al., 2023), particularly focusing on their experiences (Finsterwalder & Kuppelwieser, 2020), but few have considered tourists' participation in creating sustainable or ecological value. Previous studies have demonstrated that tourists' value-co-creation behaviors can significantly promote sustainable development (Elliot et al., 2023). Therefore, integrating tourist value co-creation with an environmental sustainability perspective is essential. To address the existing research gap, this study represents a pioneering effort in investigating ecological value co-creation behavior of island tourists. Drawing upon the theory of value co-creation and prior research (Teng & Tsai, 2020 ; Yi & Gong, 2013), this study verifies the scale of tourist ecological value co-creation behavior, which is divided into ecological participation behavior and civic behavior.

Social responsibility provides tourist destinations with a competitive edge, attracting recent academic attention. Most studies on DSR have shown its significant impact on tourists' visit intention (Su et al., 2020), re-visit intention (Hassan & Soliman, 2021), pro-environment behavior (Su & Swanson, 2017 ; Li et al., 2023) and destination brand loyalty (Tran et al., 2023). However, few studies have explored the relationship between DSR and tourist value-co-creation behavior, especially DSR in island tourism. Actually, previous studies have shown that CSR can promote the value co-creation behavior of stakeholders (Mubushar et al., 2024). This study explored the influence of Env DSR strategies on ecological value co-creation of tourist in island tourism. This study broadens the research of DSR, and responds to the academic concerns expressed by Suet al., 2020.

We explored the mediating role of attribution motivation attribution and destination trust. Previous studies have explored the impact of destination trust on tourist value-co-creation behavior (Arica et al., 2023) and the impact of DSR on destination trust (Su et al., 2020 ; Hassan & Soliman, 2021). However, few studies have examined the mediating effects of destination trust on DSR and tourists value co-creation. The study distinguished two types of Env DSR strategies (pre-crisis and post-crisis) and found that pre-crisis strategy can induce the tourists' perception of altruistic motivation and destination trust, so as to generate the tourist citizenship behavior. These findings substantiate the role of attribution motivation and destination trust as chain mediators in the relationship between Env DSR strategies and value co-creation behavior. These conclusions enrich the literature of destination trust in this field and offer some new insights.

Moreover, we explore the relationship between CCS adopted by the destination after ecological crisis and ecological value co-creation behavior. Previous research has explored how interactions lead to value co-creation and co-destruction during major service disruptions (Assiouras et al., 2023), and how argument quality and source credibility of CSR communication influence value co-creation during a pandemic (Chang & Berwanger, 2024). However, the relationship between specific CCS and value co-creation is not discussed. The conclusion of this study enriches the literature of value co-creation after destination ecological crisis.

## **6.2. Managerial Implications**

The findings of this study have significant implications for destination management practices. Destination managers, especially island managers, can use DSR strategies and motivations to build trust among tourists, which in turn fosters ecological value co-creation of both current and potential tourists.

Firstly, pre-crisis Env DSR strategy is more effective than post-crisis strategy in generating altruistic motivation and destination trust among island tourists, thereby promoting their citizenship behavior. Therefore, destination managers should proactively communicate with tourists about Env DSR to inspire citizenship behavior among tourists. Enhancing destination trust and altruistic attributions requires proactive ecological protection. Destination managers should engage tourists on Env DSR before ecological damage occurs.

Secondly, it is also very necessary to adopt DSR after the occurrence of ecological damage events. At the same time, when using the strategy, we should pay attention to using the apology strategy rather than the scapegoat strategy, so as to improve destination trust and stimulate the tourists to jointly create ecological value.

## **6.3. Limitations and Future Research**

### **Like all research, this study has limitations.**

First, this paper only analyzes from the perspective of pre-crisis and post-crisis strategies. In the future, more different types of strategies can be considered, such as collective interests and individual interests, concrete and abstract, etc., to explore tourist ecological value co-creation from the perspective of frame effect.

Secondly, Current research focuses on Chinese consumer data, offering deep insights into the Chinese market. To enhance understanding and generalizability, future studies should include cross-country samples. Comparing tourists from different countries can reveal how cultural differences influence ecological value co-creation behavior, highlighting both commonalities and differences between markets. This approach will help destination managers develop more accurate global strategies and provide new perspectives for cross-cultural research.

## **Data Sharing Statement**

The datasets are available from the corresponding author upon reasonable request.

### **Ethics Approval**

This study followed the principles of the Declaration of Helsinki and received approval from the Ethics Research Committee of Lingnan normal University. All study participants provided informed consent before participating in the research, and the study procedures were formulated to safeguard participant privacy and ensure confidentiality.

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## Disclosure

The author(s) report no conflicts of interest in this work.

## BIBLIOGRAPHY

- [1]. Agapito, D., Kronenburg, R., & Pinto, P. (2022). A review on destination social responsibility: Towards a research agenda. *\*Current Issues in Tourism*, 26\*(4), 554-572. <https://doi.org/10.1080/13683500.2020.1856304>
- [2]. Arica, R., Kodas, B., Cobanoglu, C., Parvez, M. O., Oongsakul, V., & Della Corte, V. (2023). The role of trust in tourists' motivation to participate in co-creation. *\*Tourism Review*, 78\*(4), 1182-1202. <https://doi.org/10.1108/TR-09-2021-0385>
- [3]. Assiouras, I., Vallström, N., Skourtis, G., & Buhalis, D. (2023). Exploring how interaction leads to value co-creation, value co-destruction, and value no-creation during service mega-disruptions. *\*Current Issues in Tourism*, 27\*(20), 3231-3248. <https://doi.org/10.1080/13683500.2022.2153267>
- [4]. Aziz, S., & Niazi, M. A. K. (2024). Developing destination brand equity for achieving sustainable destination environment: S - O - R theory to influence tourists' environment responsible behavior. *\*Tourism Review International*, 28\*(3), 183-201. <https://doi.org/10.3727/154427224X17144893386856>
- [5]. Badar, S., Waheed, A., Tanveer, A., & Fayyaz, H. (2024). Hotel' s customer empowerment, environmental corporate social responsibility, and online customer value co-creation to attain sustainable development goals (SDGs). *\*Spanish Journal of Marketing - ESIC\**. Advance online publication. <https://doi.org/10.1108/SJME-07-2023-0061>
- [6]. Bai, R., Shi, Y., & Pan, Y. (2022). Land-use classifying and identification of the production-living-ecological space of island villages—A case study of islands in the western sea area of Guangdong Province. *\*Land*, 11\*(5), Article 5. <https://doi.org/10.3390/land11050506>
- [7]. Benner, M. (2020). Overcoming overtourism in Europe: Towards an institutional-behavioral research agenda. *\*Zeitschrift für Wirtschaftsgeographie*, 64\*(2), 74-87. <https://doi.org/10.1515/zfw-2019-0020>
- [8]. Blau, P. (1964). *\*Exchange and power in social life\**. Wiley Press.
- [9]. Carvalho, P., & Alves, H. (2022). Customer value co-creation in the hospitality and tourism industry: A systematic literature review. *\*International Journal of Contemporary Hospitality Management*, 35\*(1), 250-273. <https://doi.org/10.1108/IJCHM-04-2021-0365>
- [10]. Chan, T. K. H., Cheung, C. M. K., & Lee, Z. W. Y. (2017). The state of online impulse-buying research: A literature analysis. *\*Information & Management*, 54\*(2), 204-217. <https://doi.org/10.1016/j.im.2016.06.006>
- [11]. Chang, K.-C., Cheng, Y.-S., Kuo, N.-T., & Cheng, Y.-H. (2023). Impacts of tourists' shopping destination trust on post-visit behaviors: A loss aversion perspective. *\*International Journal of Hospitality & Tourism Administration\**. Advance online publication. <https://doi.org/10.1080/15256480.2023.2215631>
- [12]. Chen, Y., Cottam, E., & Lin, Z. (2020). The effect of resident-tourist value co-creation on residents' well-being. *\*Journal of Hospitality and Tourism Management*, 44\*, 30-37. <https://doi.org/10.1016/j.jhtm.2019.12.004>
- [13]. Chuang, C.-M. (2023). The conceptualization of smart tourism service platforms on tourist value co-creation behaviours: An integrative perspective of smart tourism services. *\*Humanities and Social Sciences Communications*, 10\*(1), Article 1. <https://doi.org/10.1057/s41599-023-01521-2>
- [14]. Chuangxin, L., Rong, L., & Liqing, Y. (2024). Understanding the value co-creation behavior of rural tourists: An application of FSQCA. *\*Journal of Resources and Ecology*, 15\*(3), 614-625. <https://doi.org/10.5814/j.issn.1674-764x.2024.03.008>
- [15]. Chi, N. T. K., & Pham, H. (2022). The moderating role of eco-destination image in the travel motivations and ecotourism intention nexus. *\*Journal of Tourism Futures*, 10\*(2), 317-333. <https://doi.org/10.1108/JTF-11-2021-0284>
- [16]. Coombs, W. T., & Holladay, S. J. (2007). The negative communication dynamic. *\*Journal of Communication Management*, 11\*(4), 300-312. <https://doi.org/10.1108/13632540710839919>
- [17]. Cui, M., Cheng, L., & Shang, Y. (2024). The influence of experiencescape of home-based accommodation on tourists' subjective well-being at cultural heritage sites: The role of value co-creation. *\*Journal of Destination Marketing & Management*, 31\*, Article 100932. <https://doi.org/10.1016/j.jdmm.2023.100932>
- [18]. Dai, L., & Guo, Y. (2024). Perceived CSR impact on purchase intention: The roles of perceived effectiveness, altruistic attribution, and CSR-CA belief. *\*Acta Psychologica*, 248\*, Article 104147. <https://doi.org/10.1016/j.actpsy.2024.104147>
- [19]. Elliot, E. A., Adams, R., & Tsetse, E. K. K. (2023). Customer value co-creation: Environmental sustainability as a tourist experience. *\*Sustainability*, 15\*(13), Article 13. <https://doi.org/10.3390/su151310452>
- [20]. Falk, A., & Fischbacher, U. (2006). A theory of reciprocity. *\*Games and Economic Behavior*, 54\*(2), 293-315. <https://doi.org/10.1016/j.geb.2005.04.001>
- [21]. Farrington, T., Curran, R., Gori, K., O' Gorman, K. D., & Queenan, C. J. (2017). Corporate social responsibility: Reviewed, rated, revised. *\*International Journal of Contemporary Hospitality Management*, 29\*(1), 30-47. <https://doi.org/10.1108/IJCHM-10-2015-0580>
- [22]. Finsterwalder, J., & Kuppelwieser, V. G. (2020). Intentionality and transformative services: Wellbeing co-creation and spill-over effects. *\*Journal of Retailing and Consumer Services*, 52\*, Article 101775. <https://doi.org/10.1016/j.jretconser.2019.06.009>
- [23]. Font, X., English, R., Gkritzali, A., & Tian, W. (2021). Value co-creation in sustainable tourism: A service-dominant logic approach. *\*Tourism Management*, 82\*, Article 104242. <https://doi.org/10.1016/j.tourman.2020.104242>
- [24]. Gowreesunkar, V., & Seraphin, H. (2019). Introduction. *\*Worldwide Hospitality and Tourism Themes*, 11\*(5), 484-491. <https://doi.org/10.1108/WHATT-08-2019-0046>
- [25]. Hamidi, F., Shams Gharneh, N., & Khajeheian, D. (2019). A conceptual framework for value co-creation in service enterprises (Case of tourism agencies). *\*Sustainability*, 12\*(1), Article 1. <https://doi.org/10.3390/su12010001>
- [26]. Hassan, S. B., & Soliman, M. (2021). COVID-19 and repeat visitation: Assessing the role of destination social responsibility, destination reputation, holidaymakers' trust and fear arousal. *\*Journal of Destination Marketing & Management*, 19\*, Article 100542. <https://doi.org/10.1016/j.jdmm.2020.100542>


- [27]. Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis. *\*Journal of Educational Measurement*, 51\*(3), 335-337. <https://doi.org/10.1111/jedm.12031>
- [28]. Hegner, S. M., Beldad, A. D., & Kraesgenberg, A.-L. (2016). The impact of crisis response strategy, crisis type, and corporate social responsibility on post-crisis consumer trust and purchase intention. *\*Corporate Reputation Review*, 19\*(4), 357-370. <https://doi.org/10.1057/s41299-016-0015-5>
- [29]. Hsiao, C., Lee, Y.-H., & Chen, W.-J. (2015). The effect of servant leadership on customer value co-creation: A cross-level analysis of key mediating roles. *\*Tourism Management*, 49\*, 45-57. <https://doi.org/10.1016/j.tourman.2015.02.012>
- [30]. Jin, Y. (2009). The effects of public' s cognitive appraisal of emotions in crises on crisis coping and strategy assessment. *\*Public Relations Review*, 35\*(3), 310-313. <https://doi.org/10.1016/j.pubrev.2009.02.003>
- [31]. Jin, Y. (2013). Examining publics' crisis responses according to different shades of anger and sympathy. *\*Journal of Public Relations Research*, 26\*(1), 79-101. <https://doi.org/10.1080/1062726X.2013.795466>
- [32]. Johns, R., & Khojastehpour, M. (2014). The effect of environmental CSR issues on corporate/brand reputation and corporate profitability. *\*European Business Review*, 26\*(4), 330-339. <https://doi.org/10.1108/EBR-10-2013-0120>
- [33]. Jiang, H., Meng, F., & Liu, B. (2024). Unlocking nontransactional value co-creation: Insights from online travel communities. *\*Journal of Travel Research\**. Advance online publication. <https://doi.org/10.1177/00472875241234567>
- [34]. Jeon, M. A., & An, D. (2019). A study on the relationship between perceived CSR motives, authenticity and company attitudes: A comparative analysis of cause promotion and cause-related marketing. *\*Asian Journal of Sustainability and Social Responsibility*, 4\*(1), Article 1. <https://doi.org/10.1186/s41180-019-0018-3>
- [35]. Kelley, H. H., & Michela, J. (1980). Attribution theory and research. *\*Annual Review of Psychology*, 31\*(1), 457-501. <https://doi.org/10.1146/annurev.ps.31.020180.002325>
- [36]. Kim, E., & Ham, S. (2016). Restaurants' disclosure of nutritional information as a corporate social responsibility initiative: Customers' attitudinal and behavioral responses. *\*International Journal of Hospitality Management*, 55\*, 96-106. <https://doi.org/10.1016/j.ijhm.2016.03.005>
- [37]. Kim, G., & Duffy, L. N. (2023). Importance of residents' perception of tourists in establishing a reciprocal resident-tourist relationship: An application of tourist attractiveness. *\*Tourism Management*, 94\*, Article 104632. <https://doi.org/10.1016/j.tourman.2023.104632>
- [38]. Kim, S., & Choi, S. M. (2016). Congruence effects in post-crisis CSR communication: The mediating role of attribution of corporate motives. *\*Journal of Business Ethics*, 153\*(2), 447-463. <https://doi.org/10.1007/s10551-016-3325-0>
- [39]. Langaro, D., Loureiro, S., Schivinski, B., & Neves, H. (2022). In the eye of the (fire)storm: Better safe or sorry? Crisis communication strategies for managing virality of online negative brand-related content. *\*Journal of Marketing Communications*, 30\*(3), 301-317. <https://doi.org/10.1080/13527266.2022.2053415>
- [40]. Leong, A. M. W., Yeh, S.-S., Zhou, Y., Hung, C.-W., & Huan, T.-C. (2024). Exploring the influence of historical storytelling on cultural heritage tourists' value co-creation using tour guide interaction and authentic place as mediators. *\*Tourism Management Perspectives*, 50\*, Article 101037. <https://doi.org/10.1016/j.tmp.2023.101037>
- [41]. Lewicki, R. J., & Brinsfield, C. (2017). Trust repair. *\*Annual Review of Organizational Psychology and Organizational Behavior*, 4\*(1), 287-313. <https://doi.org/10.1146/annurev-orgpsych-032315-012345>
- [42]. Li, X., & Yang, Y. (2024). The impact of affective repair strategies on brand trust: The mediating role of positive emotions. *\*International Journal of Linguistics, Literature & Translation*, 7\*(7), 26-37. <https://doi.org/10.32996/ijllt.2024.7.7.3>
- [43]. Li, Y., Xia, L., Wang, L., Qiu, M., & Utomo, S. (2024). How are rural homestays achieving sustainable development in the post-COVID-19 period: Value co-creation by operators, tourists, and government. *\*Sustainability*, 16\*(3), Article 3. <https://doi.org/10.3390/su16031234>
- [44]. Li, Z.-F., Wu, J.-C., & Deng, S. (2023). The effect of destination social responsibility on tourists' pro-environmental behavior. *\*Asia Pacific Journal of Tourism Research*, 27\*(12), 1233-1246. <https://doi.org/10.1080/10941665.2022.2151234>
- [45]. Lin, H., Zhang, M., & Gursoy, D. (2021). Effects of tourist-to-tourist interactions on experience cocreation: A self-determination theory perspective. *\*Journal of Travel Research*, 61\*(5), 1105-1120. <https://doi.org/10.1177/00472875211012345>
- [46]. Lin, S.-W., & Lo, L. Y.-S. (2015). Evoking online consumer impulse buying through virtual layout schemes. *\*Behaviour & Information Technology*, 35\*(1), 38-56. <https://doi.org/10.1080/0144929X.2015.1081234>
- [47]. Liu, M. T., Liu, Y., Mo, Z., Zhao, Z., & Zhu, Z. (2019). How CSR influences customer behavioural loyalty in the Chinese hotel industry. *\*Asia Pacific Journal of Marketing and Logistics*, 32\*(1), 1-22. <https://doi.org/10.1108/APJML-07-2018-0178>
- [48]. Liu, W., Ismail, H. N., Yee, T. P., & Li, F. (2024). Exploring the effect of destination social responsibility on responsible tourist behavior: Symmetric and asymmetric analysis. *\*Asia Pacific Journal of Tourism Research*, 29\*(2), 209-224. <https://doi.org/10.1080/10941665.2023.2234567>
- [49]. Liu, W., & Derong, L. (2018). Mechanism of word-of-mouth tourism recommendations based on destination trust. *\*Tourism Tribune*, 33\*(10), 63-74.
- [50]. Maruyama, N. U., Keith, S. J., & Woosnam, K. M. (2019). Incorporating emotion into social exchange: Considering distinct resident groups' attitudes towards ethnic neighborhood tourism in Osaka, Japan. *\*Journal of Sustainable Tourism*, 27\*(8), 1125-1141. <https://doi.org/10.1080/09669582.2019.1578385>
- [51]. Mathibe, M. S., Chinyamurindi, W. T., & Hove-Sibanda, P. (2022). Value co-creation as a mediator between strategic planning and social enterprise performance. *\*Social Enterprise Journal*, 19\*(1), 23-39. <https://doi.org/10.1108/SEJ-06-2021-0045>
- [52]. Min, J., Kim, J., & Yang, K. (2023). CSR attributions and the moderating effect of perceived CSR fit on consumer trust, identification, and loyalty. *\*Journal of Retailing and Consumer Services*, 72\*, Article 103274. <https://doi.org/10.1016/j.jretconser.2022.103274>
- [53]. Mubushar, M., Cerchione, R., Rasool, S., Centobelli, P., & Morelli, M. (2024). The effect of corporate social responsibility on customer engagement and citizenship behavior. *\*Corporate Social Responsibility and Environmental Management\**. Advance online publication. <https://doi.org/10.1002/csr.2345>
- [54]. Nie, K., & Tang, X. (2022). Study on ecological value co-creation of tourism enterprises in protected areas: Scale development and test. *\*Sustainability*, 14\*(16), Article 16. <https://doi.org/10.3390/su14169876>
- [55]. Portuguese-Castro, M. J. A. S. (2023). Exploring the potential of open innovation for co-creation in entrepreneurship: A systematic literature review. *\*Sustainability*, 15\*(9), Article 9. <https://doi.org/10.3390/su15091980>
- [56]. Prideaux, B., Thompson, M., Pabel, A., & Cassidy, L. (2021). Managing climate change crisis events at the destination level. *\*Journal of Hospitality and Tourism Management*, 49\*, 451-459. <https://doi.org/10.1016/j.jhttm.2021.09.003>



- [57]. Rashid, Y., Waseem, A., Akbar, A. A., & Azam, F. (2019). Value co-creation and social media. *\*European Business Review*, 31\*(5), 761–782. <https://doi.org/10.1108/EBR-12-2018-0206>
- [58]. Ricks, J. M. (2005). An assessment of strategic corporate philanthropy on perceptions of brand equity variables. *\*Journal of Consumer Marketing*, 22\*(3), 121–134. <https://doi.org/10.1108/07363760510595928>
- [59]. Rim, H., & Kim, S. (2016). Dimensions of corporate social responsibility (CSR) skepticism and their impacts on public evaluations toward CSR. *\*Journal of Public Relations Research*, 28\*(5–6), 248–270. <https://doi.org/10.1080/1062726X.2016.1223322>
- [60]. Shams, S. M. R., & Kaufmann, H. R. (2016). Entrepreneurial co-creation: A research vision to be materialised. *\*Management Decision*, 54\*(6), 1250–1268. <https://doi.org/10.1108/MD-10-2015-0456>
- [61]. Shen, Y., Jo, W., & Joppe, M. (2022). Role of country image, subjective knowledge, and destination trust on travel attitude and intention during a pandemic. *\*Journal of Hospitality and Tourism Management*, 52\*, 275–284. <https://doi.org/10.1016/j.jhtm.2022.01.003>
- [62]. Shing-Wan, C., & Berwanger, G. A. D. S. (2024). How CSR communication and value co-creation shape consumer well-being and brand love in the post-COVID-19 pandemic: Evidence from the UK. *\*Corporate Communications: An International Journal*, 29\*(6), 1034–1053. <https://doi.org/10.1108/CCIJ-02-2024-0034>
- [63]. Singh, A., Rana, N. P., & Parayitam, S. (2022). Role of social currency in customer experience and co-creation intention in online travel agencies: Moderation of attitude and subjective norms. *\*International Journal of Information Management Data Insights*, 2\*(2), Article 100058. <https://doi.org/10.1016/j.ijime.2022.100058>
- [64]. Sohaib, M., & Han, H. (2023). Building value co-creation with social media marketing, brand trust, and brand loyalty. *\*Journal of Retailing and Consumer Services*, 74\*, Article 103442. <https://doi.org/10.1016/j.jretconser.2023.103442>
- [65]. Solakis, K., Katsoni, V., Mahmoud, A. B., & Grigoriou, N. (2022). Factors affecting value co-creation through artificial intelligence in tourism: A general literature review. *\*Journal of Tourism Futures*, 10\*(1), 116–130. <https://doi.org/10.1108/JTF-07-2021-0145>
- [66]. Stovall, W., Higham, J., & Stephenson, J. (2019). Prepared for take-off? Anthropogenic climate change and the global challenge of twenty-first-century tourism. *\*Journal of Sustainable Tourism*, 27\*(2), 157–171. <https://doi.org/10.1080/09669582.2018.1563456>
- [67]. Su, L., Chen, H., & Huang, Y. (2022). The influence of tourists' monetary and temporal sunk costs on destination trust and visit intention. *\*Tourism Management Perspectives*, 42\*, Article 100972. <https://doi.org/10.1016/j.tmp.2022.100972>
- [68]. Su, L., Gong, Q., & Huang, Y. (2020). How do destination social responsibility strategies affect tourists' intention to visit? An attribution theory perspective. *\*Journal of Retailing and Consumer Services*, 54\*, Article 102028. <https://doi.org/10.1016/j.jretconser.2019.102028>
- [69]. Su, L., Lian, Q., & Huang, Y. (2020). How do tourists' attribution of destination social responsibility motives impact trust and intention to visit? The moderating role of destination reputation. *\*Tourism Management*, 77\*, Article 104017. <https://doi.org/10.1016/j.tourman.2019.104017>
- [70]. Su, L., & Swanson, S. R. (2017). The effect of destination social responsibility on tourist environmentally responsible behavior: Compared analysis of first-time and repeat tourists. *\*Tourism Management*, 60\*, 308–321. <https://doi.org/10.1016/j.tourman.2016.12.011>
- [71]. Su, L., Swanson, S. R., & He, X. (2019). A scale to measure residents perceptions of destination social responsibility. *\*Journal of Sustainable Tourism*, 28\*(6), 873–897. <https://doi.org/10.1080/09669582.2019.1651550>
- [72]. Teng, H.-Y., & Tsai, C.-H. (2020). Can tour leader likability enhance tourist value co-creation behaviors? The role of attachment. *\*Journal of Hospitality and Tourism Management*, 45\*, 285–294. <https://doi.org/10.1016/j.jhtm.2020.08.004>
- [73]. Thiago de Luca Sant' ana Ribeiro, T., Benny Kramer Costa, B., Manuel Portugal Ferreira, M., & Freire, O. B. d. L. (2023). Value co-creation in tourism and hospitality: A systematic literature review. *\*European Management Journal*, 41\*(6), 985–999. <https://doi.org/10.1016/j.emj.2023.01.004>
- [74]. Tran, P. K. T., Nguyen, H. K. T., Nguyen, L. T., Nguyen, H. T., Truong, T. B., & Tran, V. T. (2023). Destination social responsibility drives destination brand loyalty: A case study of domestic tourists in Danang city, Vietnam. *\*International Journal of Tourism Cities*, 9\*(1), 302–322. <https://doi.org/10.1108/IJTC-06-2022-0123>
- [75]. Tuan, L. T., Rajendran, D., Rowley, C., & Khai, D. C. (2019). Customer value co-creation in the business-to-business tourism context: The roles of corporate social responsibility and customer empowering behaviors. *\*Journal of Hospitality and Tourism Management*, 39\*, 137–149. <https://doi.org/10.1016/j.jhtm.2019.02.004>
- [76]. Uslu, A., & Tosun, P. (2023). Tourist personality, value co - creation, and emotional well - being. *\*International Journal of Consumer Studies*, 48\*(1), e12345. <https://doi.org/10.1111/ijcs.12901>
- [77]. Vanhamme, J., & Grobben, B. (2008). “Too good to be true!”. The effectiveness of CSR history in countering negative publicity. *\*Journal of Business Ethics*, 85\*(S2), 273–283. <https://doi.org/10.1007/s10551-008-9749-5>
- [78]. Wallace, E., Torres, P., Augusto, M., & Stefurny, M. (2021). Do brand relationships on social media motivate young consumers' value co-creation and willingness to pay? The role of brand love. *\*Journal of Product & Brand Management*, 31\*(2), 189–208. <https://doi.org/10.1108/JPBM-01-2020-2523>
- [79]. Wei, L., Hairul Nizam, I., Tan, P. Y., & Li, F. (2024). Exploring the effect of destination social responsibility on responsible tourist behavior: Symmetric and asymmetric analysis. *\*Asia Pacific Journal of Tourism Research*, 29\*(2), 209–224. <https://doi.org/10.1080/10941665.2023.2234567>
- [80]. Wu, S.-H., Huang, S. C.-T., Tsai, C.-Y. D., & You, Y.-X. (2023). Doing good for good: How does corporate social responsibility drive customer citizenship behavior? The mediation of engagement, trust, and identification. *\*Service Business*, 17\*(4), 937–967. <https://doi.org/10.1007/s11628-023-00512-3>
- [81]. Yang, K. (2024). How to rebuild trust through apology: Evidence from public apology letters. *\*Journal of Pragmatics*, 224\*, 36–45. <https://doi.org/10.1016/j.pragma.2024.01.003>
- [82]. Yang, Y., Wang, S., Cai, Y., & Zhou, X. (2021). How and why does place identity affect residents' spontaneous culture conservation in ethnic tourism community? A value co-creation perspective. *\*Journal of Sustainable Tourism*, 30\*(6), 1344–1363. <https://doi.org/10.1080/09669582.2021.1901234>
- [83]. Yi, Y., & Gong, T. (2013). Customer value co-creation behavior: Scale development and validation. *\*Journal of Business Research*, 66\*(9), 1279–1284. <https://doi.org/10.1016/j.jbusres.2012.02.026>
- [84]. Yu, M., Cheng, M., Yang, L., & Yu, Z. (2022). Hotel guest satisfaction during COVID-19 outbreak: The moderating role of crisis response strategy. *\*Tourism Management*, 93\*, Article 104499. <https://doi.org/10.1016/j.tourman.2022.104499>

## Appendix 1

### Experiment1 Condition 1: pre-crisis Env DSR



**NEWS CENTER**

#### Protect Island Ecology and Build a Zero-carbon Island

2025年01月11日 14:54

Destination A is an island renowned for its ecological beauty. To preserve this environment, the local government and island managers have initiated various eco-protection activities.

Recently, they launched a "Protect Island Ecology and Build a Zero-Carbon Island" campaign. This included coastal cleanups of cigarette butts, beverage bottles, and plastic bags, as well as waste sorting. Local businesses were encouraged to adopt low-carbon practices, such as harmless disposal of kitchen waste and promoting green travel for tourists. Additionally, environmental slogans were posted in scenic areas, and tree planting events were held to encourage sustainable marine conservation.



Reading ranking

Review ranking

### Experiment 1 Condition 2: post-crisis Env DSR



**NEWS CENTER**

#### Protect Island Ecology and Build a Zero-carbon Island

2025年01月11日 14:54

Destination A, an island renowned for its ecological beauty, has seen a rise in tourist numbers in recent years. However, due to poor ecological management by the island's authorities, the environment has deteriorated significantly. Issues such as coastal garbage, sea pollution, and foul-smelling shores have forced marine life to migrate. This not only impacted local residents but also led to a sharp decline in tourism, hindering sustainable development and attracting media attention.

Under pressure from public opinion, complaints, and declining profits, the island managers launched the "Protect Island Ecology and Build a Zero-carbon Island" initiative. This included organizing volunteer clean-up activities, promoting low-carbon practices among businesses, advocating green travel, and setting up environmental protection signs and tree-planting events to encourage tourists to support sustainability.



Reading ranking

Review ranking

## Appendix 2

### Experiment2 Condition 1: apology strategy

Hemei Island -- Ecological protection

目的地A 2024年11月29日 14:55

In the past, there were ecological environmental pollution problems such as coastal pollution and piles of garbage on the island, which seriously affected the lives of local residents and tourists' travel experience. After an in-depth investigation, there are indeed some loopholes in the island's ecological management. **We apologize for this.** In the future, we will strengthen ecological protection and create a better ecological environment. To this end, we have taken a variety of ecological management measures, launched the "Love Island ecology, build a zero-carbon island series of activities" to take sewage treatment, beach cleaning, harmless treatment of domestic waste, tree planting and other activities, while strengthening environmental protection publicity in the island.



After ecological restoration, island resident Chen said: "After this period of management, the island ecology has gradually been restored and improved, and now there are more trash cans on the island, there is no garbage on the beach, the sea has turned blue, and I recently saw white dolphins when I went out to sea, indicating that the island ecological protection has achieved better results." I have been living on this island and have a deep affection for it, and I am very happy to see the gradual restoration of the island's ecology.



阅读1245



目的地A  
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Experiment1 Condition 2: scapegoat strategy

Hemei Island -- Ecological protection

目的地A 2024年11月29日 14:55

In the past, there were ecological environmental pollution problems such as coastal pollution and piles of garbage on the island, which seriously affected the lives of local residents and tourists' travel experience. After in-depth investigation, it was found that the island has always paid attention to ecological protection and management, but in recent years, more and more tourists on the island have caused pressure on the local ecological environment.

To this end, we have taken a variety of ecological management measures, launched the "Love Island ecology, build a zero-carbon island series of activities" to take sewage treatment, beach cleaning, harmless treatment of domestic waste, tree planting and other activities, while strengthening environmental protection publicity in the island.



After ecological restoration, island resident Chen said: "After this period of management, the island ecology has gradually been restored and improved, and now there are more trash cans on the island, there is no garbage on the beach, the sea has turned blue, and I recently saw white dolphins when I went out to sea, indicating that the island ecological protection has achieved better results." I have been living in this island and have deep feelings for the island, and I am very happy to see the gradual restoration of the island ecology.



阅读1245



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Appendix 3

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Measures (1=strongly disagree through 7=strongly agree)

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Altruism Motive (adopted from 89)

The destination launched the campaign because it truly cares about the public.

The destination has a genuine concern for the welfare of their tourists

The destination really cares about providing a better environment to its stakeholders.

The destination is trying to give something back to the community.

Destination trust (adopted from 62)

I believe that if there is a problem with the island's ecological environment, the management will deal with it immediately.

I believe the island manager is capable of protecting the ecological environment.

I believe the ecological environment of the island will become better and better.

I think the management of the island is trustworthy.

Ecological participation behavior of tourist (adopted from 43,44)

I will provide useful ecological and environmental protection information to the relevant administrative departments of the island.

I will provide necessary eco-protection advice to relevant management department of island tourism.

When I find problems in the ecological environment during my tour on the island, I will give feedback to the relevant management department.

When I have constructive opinions on the ecological environment development of tourism on the island, I will tell the relevant management department.

If other tourists are ecological vandals, I will correct their behavior

When traveling on the island, I will fulfill my ecological obligations as a tourist (e.g. not wearing sunscreen while swimming in the sea, not littering, etc.).

I will follow relevant regulations of the island tourism administration when traveling on the island.

During my trip to the island, I will do my best to protect the ecological environment as expected by the tourism authorities.

Ecological citizenship behavior of tourist (adopted from 43,44)

I will share the ecological benefits of the island with others.

I would recommend the ecology here to others.

I would encourage friends and relatives to travel here to experience the ecological environment.

If the island's ecological environment does not meet expectations, I will be willing to put up with it.

If ecological environment of the island is destroyed, I am willing to wait patiently for management.

If it takes longer than expected to improve island's ecological environment, I am willing to accept it.

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