

Study on the Relationship among Social Capital, Perceived Value and Residents' Environmental Responsibility Behavior in Tourist Destinations

Chen Qi *, Liangju Wang

Anhui University of Finance and Economics, Bengbu, Anhui, 233000, China

* Corresponding author: Chen Qi (Email: 2691791320@qq.com)

Abstract: The development of tourism promotes the economic prosperity of tourist destinations, but at the same time, it also has a serious negative impact on the local environment, and the environmental problems of tourist destinations have gradually aroused widespread social concern. As one of the important stakeholders in a tourist destination, the residents of the tourist destination live in the local area for a longer time and have a stronger perception of local environmental changes. Therefore, the environmental responsibility behavior of the residents of the tourist destination has a far-reaching impact on the local environment. Promoting the residents of the tourist destination to implement environmental responsibility behavior is an effective measure to realize the sustainable development of the tourist destination. Based on the stimulus-organism-response (S-O-R) theory, this paper constructs a theoretical framework of the relationship between social capital, perceived value and residents' environmental responsibility behavior, so as to clarify the influence mechanism of social capital on the environmental responsibility behavior of tourists. The results show that: (1) social capital can significantly promote the environmental responsibility behavior of tourists; (2) Perceived value can significantly promote the environmental responsibility behavior of residents in tourist areas; (3) Perceived value mediates the relationship between social capital and residents' environmental responsibility behavior.

Keywords: Tourist Destinations; Environmental Problems; Stimulus-Organism-Response (S-O-R) Theory; Perceived Value; Social Capital; Environmental Responsibility Behavior.

1. Introduction

Since the reform and opening up, China's tourism development has made remarkable achievements, and tourism has become one of the main factors to promote national economic growth. (Dogru et al., 2018). Tourism brings many positive effects to tourist destinations, such as providing job opportunities. (He Ailin et al., 2014), improve public facilities, promote the protection of local cultural heritage, etc. (Huang Jie et al., 2003) But at the same time, it has also produced many negative effects. The influx of a large number of tourists has led to the rapid rise of local prices. (Dong-Wan et al., 2002) The impact of foreign culture on local traditional culture (Wang et al., 2023) And the destruction of the local natural environment and resources, affecting the quality of life of residents. (Wang et al., 2023). When there are more and more problems of environmental damage and resource consumption in tourist destinations, it will be more and more difficult to realize the sustainable development of tourism.

Many scholars have found that the environmental responsibility behavior of tourism stakeholders plays a vital role in promoting the sustainable development of tourism. (Brown et al., 2010; Chiu et al., 2014; Fan Jun et al., 2014). Environmental responsibility behavior (ERB) refers to all measures taken by individuals or groups to improve the ecological environment of the destination. (Borden et al., 1979). The daily behavior of residents in tourist destinations has the most direct and fundamental impact on the environment of tourist destinations (Tian Cuiqin et al., 2011), and the implementation of their environmental

responsibility behavior will greatly affect the sustainable development of tourist destinations (Kim et al., 2006). Not only these personal subjective factors and personal cognitive factors affect residents' environmental responsibility behavior, but also some interpersonal factors such as community support (Yan et al., 2021), community participation (Safshekan et al., 2020), social trust (Hua et al., 2021a) and social capital (Xu et al., 2024) will also affect residents' environmental responsibility behavior. As an important factor in shaping individual behavior (Liu et al., 2014), social capital will affect residents' perception level (Wang Xiaonan, 2020), thus further affecting residents' behavior (Mayer et al., 1995; Hu Rong et al., 2019). Some scholars have studied the influence of social capital and perceived value on farmers' willingness to participate in environmental governance (Xu Shui Tai et al., 2024a), but few have analyzed social capital, perceived value and environmental responsibility behavior of residents in tourist destinations in a research framework. Therefore, this study divides the dimensions of residents' perceived value of environmental responsibility behavior based on tourism situation, discusses the role of perceived value between social capital and residents' environmental responsibility behavior, and clarifies the relationship between social capital, perceived value and residents' environmental responsibility behavior.

2. Theoretical Analysis and Research

2.1. Theoretical Analysis

2.1.1. Research on Social Capital

The concept of social capital was first put forward by Bourdieu, a French sociologist. He believed that social capital

is a collection of real or potential resources, which are related to having a more or less institutionalized network of common familiarity and recognition (Bourdieu,1986; Putnam et al.,1994). Coleman (1994) thinks that social capital originates from social network, and distinguishes three basic forms of social capital: obligation and expectation, information channel and standard and effective punishment. Putnam et al.(1994) holds that social capital is a certain feature of social organizations, such as norms, trust and networks, which can improve social efficiency by promoting people's cooperative actions. Putnam et al.(1994) has been widely recognized by scholars. Therefore, this study divides social capital into three dimensions: social network, social trust and social norms, and studies the influence of social capital on residents' environmental responsibility behavior.

2.1.2. Research on Perceived Value

Perceived value was first applied in the field of marketing, which is the subjective preference of customers for goods on the basis of perceived benefits and perceived costs (Porter et al.,1985). Zeithaml et al.(1988) Perceived value is the overall evaluation of product utility by customers according to the income obtained and the cost paid, which can be used to study the cognitive state of customers when they consume goods or services. Although the concept of perceived value is constantly updated in the follow-up research, its core connotation is basically the same, that is, perceived value is the balance of perceived benefits or perceived costs of products or services (Petrick et al.,2002).

Since 1990s, perceived value has been gradually applied to tourism (Huang Yinghua et al., 2007). He Qimin et al. (2023) divided tourists' perceived value into perceived cost value, perceived cultural value and perceived brand value, and found that tourists' perception of cultural value of eco-tourism destination can significantly affect tourists' environmental behavior intention. Because tourists belong to consumers, the dimensions of their perceived value are divided from the perspective of self-interest. Local residents have lived in tourist destinations for a long time. As individuals, they are rooted in the group and have a close relationship with the group (Dholakia et al.,2004). Therefore, the perceived value of local environmental responsibility behavior of residents in tourist destinations should not only be self-interested, but also include altruism and social benefit (Zhang Anmin et al., 2019). Following this viewpoint, this study divides the perceived value of residents in tourist destinations into self-reference value, group reference value and destination development value, and explores the role of perceived value between social capital and residents' environmental responsibility behavior.

2.1.3. Research on Environmental Responsibility Behavior

Environmental responsibility behavior (ERB) was first proposed by Borden et al. (1979). Based on the "attitude-behavior" theory, they defined environmental responsibility behavior as all measures taken by individuals or groups to control environmental problems. As an important stakeholder in a tourist destination, the residents' environmental responsibility behavior has a far-reaching impact on the sustainable development of a tourist destination (Byrd et al.,2009; He Xuehuan et al., 2018; Wu Jianxing et al., 2023). The sustainable development of tourism depends on the environment of the tourist destination. As a resident group of the tourist destination, residents have long-term and extensive contact with the natural environment of the tourist destination. The environmental responsibility behavior of the residents of

the tourist destination greatly affects the natural environment of the tourist destination and has an impact on the local sustainable development. By combing the concept of environmental responsibility behavior, this study defines the environmental responsibility behavior of tourist destination residents as all behaviors that residents are willing to implement that are conducive to environmental sustainable development and have the least negative impact on the environment.

2.1.4. Stimulus-body-response Theory

The theory of stimulus-organism-response (SOR) was first put forward by Mehrabian and Russel, and used to describe the influence mechanism of environmental stimulus on individual behavior (Mehrabian et al.,1974). This theoretical framework holds that external environmental factors (stimuli) will affect people's internal state (organism) and then lead to people's behavioral responses. This theoretical model is widely used in marketing, organizational behavior, tourism and other disciplines (He Xuehuan et al., 2021). Many scholars apply SOR theory to the study of environmental responsibility behavior. He Xuehuan et al. (2021) built a research model on the influence of tourist destination service quality on tourists' environmental responsibility behavior based on SOR theory, which proved that tourist destination service quality can influence tourists' environmental responsibility behavior through the internal organism feeling of tourists' satisfaction.

2.2. Research Hypothesis

2.2.1. Relationship between Social Capital and Residents' Environmental Responsibility Behavior

With the increasing influence of public behavior on environmental governance, determining the influencing factors of public environmental responsibility behavior plays an important role in solving environmental problems (Wang et al.,2020) (Wang et al.,2020; Pan Yue, 2004; Zheng Siqi et al., 2013). As a public resource, social capital can improve social efficiency through public cooperative behavior (Putnam et al.,1994). Many scholars have found that social capital with social network, social trust and social norms as its core content can effectively explain residents' participation in domestic waste classification (Wang et al.,2022; Han Hongyun et al., 2016; Jia Yajuan et al., 2021; Yi Chengzhi et al., 2021), Ecological Governance Behavior (Michiel P M M,2017; He Peipei et al., 2019; Ren Zhong et al., 2022; Zhu Qingying et al., 2019) and other pro-environmental behaviors.

Social network, as an interpersonal resource network composed of embedded relationships among members of a common organization, reflects the interaction and connection among members of the organization (Shi Hengtong et al., 2018). Social trust can promote the formation of cooperative participation by reducing fear of being used by others. Li Qiucheng et al. (2014) took xixi national wetland park as an example and found that social norms have a significant impact on tourists' willingness to behave in an environmentally friendly way. Therefore, this study puts forward the hypothesis:

Suppose H1a: Social network positively affects the environmental responsibility behavior of residents in tourist destinations.

Suppose H1b: Social trust positively affects the environmental responsibility behavior of residents in tourist destinations.

Suppose H1c: Social norms positively affect the

environmental responsibility behavior of residents in tourist destinations.

2.2.2. Relationship between Social Capital and Perceived Value

Individuals will strengthen their perceived value through social networks (Cheng Linlin and others, 2019). In a tourist destination, the social network composed of residents is conducive to the collection and dissemination of information. The richer the social network, the easier it is for residents to understand the environmental situation of the tourist destination and the economic, cultural and ecological benefits brought by participating in environmental protection (Shi Zhiheng et al., 2024). Accordingly, the hypothesis is put forward:

Suppose H2a: Social network positively affects self-reference value.

Suppose H2b: Social network positively affects group reference value.

Suppose H2c: Social network positively affects the development value of destination.

Some scholars have found that the higher the level of trust between the public, the smaller the perceived risk cost (Bord et al., 1992; Chang et al., 2008; Mayer et al., 1995), the higher the value perception. Accordingly, the hypothesis is put forward:

Suppose H2d: Social trust positively affects self-reference value.

Suppose H2e: Social trust positively affects the group reference value.

Suppose H2f: Social trust positively affects the development value of the destination.

Rice (1993) found that social norms are helpful to promote individuals' useful awareness. Social norms can stimulate residents' sense of morality and obligation to "do the right thing" (Zhang Fude, 2016). When they find that the surrounding groups support the environmental protection of the tourist destination, they are more likely to have a sense of identity with the environmental responsibility behavior (Cialdini et al., 1990), thus improving residents' value perception of the environmental responsibility behavior. Accordingly, the hypothesis is put forward:

Suppose H2g: Social norms positively affect self-reference value.

Suppose H2i: Social norms positively affect group reference value.

Suppose H2j: Social norms positively affect the development value of destinations.

2.2.3. Relationship between Perceived Value and Residents' Environmental Responsibility Behavior

Perceived value is one of the main factors that affect the subject's willingness to act (Ren Zhong et al., 2022; Zhang Jiaqi et al., 2021; Zhao Qingjun et al., 2023). The higher the perceived value of the subject, the more likely it is to have a positive behavioral tendency (Han Chunxian, 2015). As a stakeholder in a tourist destination, residents' positive value perception of local tourism impact can promote their participation in ecotourism activities (Lu Xiaoli, 2012). The higher the residents' value perception, the more they can promote their willingness to support behavior (Dyer et al., 2007; Lin et al., 2017; Tang Xiaoyun, 2015; Xie Lishan et al., 2019). Zhang Anmin et al. (2019) explored the perceived value of residents in tourist destinations from three dimensions: egoistic, altruistic and social-friendly, and found that these three dimensions of value perception can positively

affect residents' willingness to support tourism by influencing residents' satisfaction. Because local residents have lived in tourist destinations for a long time, the perception of self-interest, altruism and social value will deepen the connection between residents and tourist destinations and promote residents to make behaviors beneficial to tourist destinations (Dholakia et al., 2004). To sum up, this study puts forward the following assumptions:

Suppose H3a: self-reference value positively affects the environmental responsibility behavior of residents in tourist destinations.

Suppose H3b: the group reference value positively affects the environmental responsibility behavior of the residents in the tourist destination.

Suppose H3c: the value of destination development positively affects the environmental responsibility behavior of residents in tourist destinations.

2.2.4. The Intermediary Role of Perceived Value

Related studies have confirmed that social capital can influence individual behavior through perceived value (Pei Wenying et al., 2005). Xu Shuitai et al. (2024a) found that perceived value played an intermediary role in the relationship between different dimensions of social capital and residents' willingness to participate in the renovation of human settlements. To sum up, this study puts forward the following assumptions:

Suppose H4a: Self-reference value plays an intermediary role between social network and environmental responsibility behavior of residents in tourist areas.

Suppose H4b: Self-reference value plays an intermediary role between social trust and environmental responsibility behavior of residents in tourist areas.

Suppose H4c: Self-reference value plays an intermediary role between social norms and environmental responsibility behavior of residents in tourist areas.

Suppose H4d: Group reference value plays an intermediary role between social network and environmental responsibility behavior of residents in tourist areas.

Suppose H4e: Group reference value plays an intermediary role between social trust and environmental responsibility behavior of residents in tourist areas.

Suppose H4f: Group reference value plays an intermediary role between social norms and environmental responsibility behavior of tourists.

Suppose H4g: the value of destination development plays an intermediary role between social network and environmental responsibility behavior of residents in tourist destinations.

Suppose H4i: the value of destination development plays an intermediary role between social trust and environmental responsibility behavior of residents in tourist destinations.

Suppose H4j: the value of destination development plays an intermediary role between social norms and environmental responsibility behavior of tourists.

3. Data Source and Variable Description

3.1. Data Sources

The survey was conducted in a combination of online and offline. The research team went to the case site to conduct offline field research from June 3, 2024 to June 8, 2024. Go to Hongcun Town, Huangshan City to conduct a questionnaire survey of local residents. From June 15, 2024 to June 25, 2024,

the research team published an online questionnaire and set the screening item "How many years have you lived in Hongcun Town" to screen invalid questionnaires. A total of 534 questionnaires were distributed and 498 questionnaires

were collected, including 285 offline and 213 online, with an effective rate of 93.3%. The basic characteristics of the residents interviewed are shown in Table 1.

Table 1. Basic characteristics of interviewed residents

Item	frequency	Frequency (%)	Item	frequency	Frequency (%)
gender			Degree of education		
man	239	48.0	Primary school and below	104	20.9
woman	259	52.0	junior school	140	28.1
age			High school/technical secondary school	150	30.1
15~25	93	18.7	Undergraduate/junior college	101	20.3
26~35	108	21.7	Master degree or above	three	0.6
36~45	109	21.9	Average monthly income		
46~65	118	23.7	0	29	5.8
Over 65	70	14.1	0~3000	204	41.0
occupation			3000~6000	159	31.9
Professionals and civil servants	30	6.0	6000~10000	75	15.1
Service personnel	131	26.3	More than 10000	31	6.2
Freelancer	148	29.7	Length of life		
worker	30	6.0	1 ~5 years	120	24.1
company employee	43	8.6	6 to 10 years	116	23.3
student	11	2.2	More than 10 years	262	52.6
A farmer/herder/fisherman	86	17.3			
other	19	3.8	total	498	100.0

3.2. Variable Description

Richter's 7-level representation method is used to quantitatively set the explained variables, core explanatory variables and intermediate variables.

(1) Explained variables

In this study, residents' environmental responsibility behavior is divided into multiple dimensions. Referring to the research of Cheng et al. (2013) and Lee et al. (2013), six items are set up. See Table 2 for details.

Table 2. Measurement of residents' environmental responsibility behavior

Variable name	Measurement item	code	Literature source
Residents' environmental responsibility behavior (RERB)	I support and abide by the environmental protection policy of this town, and do not damage the environment of this town.	RERB1	(Cheng et al.,2013; Lee et al.,2013)
	When I find serious environmental pollution and damage, I will report it to the management department.	RERB2	
	When I see garbage or branches, I will throw them into the trash can.	RERB3	
	I encourage people around me to protect the environment of this town.	RERB4	
	In my life, I try not to destroy the animals and plants in this town.	RERB5	
	If there is an environmental protection activity in this town, I would like to participate if time permits.	RERB6	

(2) Explanatory variables

Table 3. Social capital measurement

Variable name	Measurement item	code	Literature source
Social network (SN)	I have frequent relatives and friends in this town.	SN1	(Dallago et al.,2009; Lubben et al.,2006)
	I'll keep in touch with the management of this town.	SN2	
	I often interact with well-connected residents.	SN3	
	I will participate in group activities with my neighbors.	SN4	
Social trust (ST)	I trust the management of this town.	ST1	(Cudjoe et al.,2024; Dallago et al.,2009)
	I trust the tourism enterprises in this town.	ST2	
	I think the residents of this town are friendly and trustworthy.	ST3	
	When I am in trouble, I can ask other people in this town for help.	ST4	
Social norm (SR)	The cadres in this town have encouraged us to take care of the environment in this town.	SR1	(Ajzen et al.,1991; Chaudhary et al.,2023)
	My relatives and friends think I should protect the environment in this town.	SR2	
	People around me will try to avoid environmental damage.	SR3	
	I think I have an obligation to protect the environment in this town.	SR4	

This study divides social capital into three dimensions: social network, social trust and social norms to measure. Among them, the measurement of social network refers to the research of Lubben et al. (2006) and Dallago et al.(2009), and four items are set; The measurement of social trust refers to the research of Dallago et al.(2009) and Cudjoe et al.(2024), and sets up four items; The measurement of social norms refers to the research of Ajzen et al.(1991) and Chaudhary et al.(2023), and four items are set.

See Table 3 for details.

(3) Intermediate variables

This study divides perceived value into three dimensions: self-reference value, group reference value and destination development value. Among them, the measurement of self-reference value and group reference value refers to the research of Dholakia et al.(2004), and three items are set respectively, and the destination development value refers to the research of Lee et al.(2013), and three items are also set.

See Table 4 for details.

Table 4. Perceived value measurement

Variable name	Measurement item	code	Literature source
Self-reference value (SV)	Participating in environmental protection activities in this town can help me learn more about the environment.	SV1	(Dholakia et al.,2004; Zhang Anmin et al., 2019)
	Participating in environmental protection activities in this town can help me better understand my views on environmental protection behavior.	SV2	
	The improvement of the environment in this town is conducive to promoting the development of tourism in this town and bringing me more job opportunities.	SV3	
Group reference value (GV)	Participating in protecting the environment of this town together can make me interact with others better.	GV1	
	In the process of jointly protecting the environment of this town, I let others feel that my participation is important.	GV2	
	In the process of jointly protecting the environment of this town, my words and deeds can leave a deep impression on others	GV3	
Destination development value (DV)	The residents' attention to environmental protection can promote the improvement of local public facilities.	DV1	(Lee et al.,2013; He Mang et al., 2022)
	The improvement of the environment in this town is conducive to increasing the local tourism income.	DV2	
	The improvement of the environment in this town can improve the cultural identity of the residents in this town, and everyone is more recognized for the local culture.	DV3	

4. Results and Analysis

4.1. Reliability and Validity Analysis

Table 5. Reliability analysis results

variable	code	Standardized factor load	Cronbach's α	CR	AVE
Social network (SN)	SN1	0.846	0.899	0.901	0.695
	SN2	0.810			
	SN3	0.829			
	SN4	0.849			
Social trust (ST)	ST1	0.884	0.918	0.920	0.743
	ST2	0.881			
	ST3	0.862			
	ST4	0.820			
Social norm (SR)	SR1	0.877	0.907	0.908	0.712
	SR2	0.827			
	SR3	0.867			
	SR4	0.803			
Self-reference value (SV)	SV1	0.885	0.893	0.895	0.739
	SV2	0.875			
	SV3	0.818			
Group reference value (GV)	GV1	0.841	0.892	0.893	0.735
	GV2	0.880			
	GV3	0.850			
Destination development value (DV)	DV1	0.860	0.901	0.901	0.753
	DV2	0.851			
	DV3	0.891			
Residents' environmental responsibility behavior (RERB)	RERB1	0.841	0.924	0.924	0.670
	RERB2	0.798			
	RERB3	0.816			
	RERB4	0.808			
	RERB5	0.823			
	RERB6	0.824			

Firstly, the Cronbach's α coefficient of each variable was measured by SPSS software, which was greater than the standard value of 0.7 and ranged from 0.892 to 0.924. The combined reliability (CR) of each variable is greater than the standard value of 0.7, ranging from 0.893 to 0.924. It shows that the internal consistency and reliability of the scale are high, and the reliability reaches the standard. See Table 5 for details.

Validity analysis is used to evaluate whether the questionnaire design is reasonable and whether the internal structure division of the questionnaire is in line with expectations. Specifically, it mainly tests the structural validity, convergence validity and discrimination validity of the scale. Through SPSS software, the KMO value of the total

scale is 0.971, which is greater than the standard value of 0.6, and the P value of Bartlett spherical test is 0.000, which is less than the standard value of 0.005, indicating that the structural validity of the scale reaches the standard. The standardized factor load of each item is greater than the standard value of 0.5, ranging from 0.798 to 0.891; AVE values of all variables are greater than the standard value of 0.5, ranging from 0.670 to 0.753, indicating that the convergence validity of the scale reaches the standard. Finally, the discriminant validity of the scale is tested, as shown in Table 6. The Pearson correlation coefficient values between all variables are less than the square root values of the corresponding AVE values, indicating that the scale has good discriminant validity.

Table 6. Discriminant validity analysis

	SN	ST	SR	SV	GV	DV	RERB
SN	0.695						
ST	0.780**	0.743					
SR	0.629**	0.730**	0.712				
SV	0.624**	0.691**	0.639**	0.739			
GV	0.573**	0.625**	0.656**	0.718**	0.735		
DV	0.584**	0.695**	0.755**	0.742**	0.641**	0.753	
RERB	0.586**	0.713**	0.792**	0.720**	0.665**	0.808**	0.670
Square root of AVE	0.834	0.862	0.844	0.860	0.857	0.868	0.819

4.2. Hypothetical Path Test

The regression coefficients of social network (M1, $\beta=0.591$, $P < 0.01$), social trust (M2, $\beta=0.734$, $P < 0.01$) and social norms (M3, $\beta=0.788$, $P < 0.01$) to residents' environmental responsibility behavior are all significantly greater than 0, assuming H1a and H1. The regression coefficients of social network to self-reference value (M7, $\beta=0.629$, $P < 0.01$), group reference value (M10, $\beta=0.554$, $P < 0.01$) and destination development value (M13, $\beta=0.580$, $P < 0.01$) are all significantly greater than 0, assuming that H2. The regression coefficients of social trust to self-reference value (M8, $\beta=0.692$, $P < 0.01$), group reference value (M11,

$\beta=0.611$, $P < 0.01$) and destination development value (M14, $\beta=0.700$, $P < 0.01$) are all significantly greater than 0, assuming H2d and H21. The regression coefficients of social norms to self-reference value (M9, $\beta=0.621$, $P < 0.01$), group reference value (M12, $\beta=0.631$, $P < 0.01$) and destination development value (M15, $\beta=0.749$, $P < 0.01$) are all significantly greater than 0, assuming that H2g, $\beta = 0.749$, $P < 0.01$. The regression coefficients of self-reference value (M4, $\beta=0.700$, $P < 0.01$), group reference value (M5, $\beta=0.640$, $P < 0.01$) and destination development value (M6, $\beta=0.793$, $P < 0.01$) to residents' environmental responsibility behavior are all significantly greater than 0, assuming that H3a and H3A. See Table 7 and Table 8 for details.

Table 7. Assuming path test result 1

variable	Residents' environmental responsibility behavior (RERB)					
	M1	M2	M3	M4	M5	M6
SN	0.591***					
ST		0.734***				
SR			0.788***			
SV				0.700***		
GV					0.640***	
DV						0.793***
GENDER	-0.014	-0.006	0.014	0.003	0.077**	0.081***
AGE	-0.074	-0.103***	0.072**	-0.026	-0.027	-0.028
EDU	0.005	0.044	0.037	0.014	-0.009	-0.012
CAREE	0.007	-0.008	-0.016	0.038	-0.036	0.018
INCOME	0.011	-0.007	0.026	0.015	0.019	-0.005
YEARS	0.06	0.096***	0.001	0.109***	0.028	-0.008
R^2	0.35	0.523	0.633	0.53	0.452	0.659
adjust R^2	0.34	0.516	0.628	0.523	0.445	0.654
F	37.634***	76.838***	120.637***	78.885***	57.835***	134.981***

4.3. Intermediary Role Test

In this study, the mediating effect of perceived value is analyzed through the PROCESS plug-in in SPSS26.0 software (see Table 9 for the results).

The 95% confidence interval of the three paths mediated by self-reference value (SV) does not include 0, which shows that self-reference value plays an intermediary role between social capital and residents' environmental responsibility behavior, assuming that H4a, H4b and H4c are established.

The 95% confidence interval of the three paths mediated by GV does not include 0, which shows that GV plays an intermediary role between social capital and residents' environmental responsibility behavior, assuming that H4d, H4e and H4f are valid.

The 95% confidence interval of the three paths with

destination development value (DV) as the intermediary does not include 0, which shows that the destination development value plays an intermediary role between social capital and residents' environmental responsibility behavior, assuming that H4g, H4i and H4j are established.

Table 8. Assuming path test result 2

variable	Self-reference value (SV)			Group reference value (GV)			Destination development value (DV)		
	M7	M8	M9	M10	M11	M12	M13	M14	M15
SN	0.629***			0.554***			0.580***		
ST		0.692***			0.611***			0.700***	
SR			0.621***			0.631***			0.749***
GENDER	-0.025	-0.017	-0.004	0.019	0.026	0.041	0.017	0.025	0.043
AGE	-0.006	-0.012	0.157***	0.005	-0.001	0.146***	-0.031	-0.054	0.114***
EDU	-0.017	0.018	0.004	0.056	0.088**	0.080**	-0.020	0.017	0.009
CAREE	-0.038	-0.050	-0.052	-0.009	-0.019	-0.025	0.020	0.006	-0.001
INCOME	0.020	0.011	0.050	0.016	0.008	0.037	0.043	0.028	0.059*
YEARS	-0.008	0.045	-0.010	0.079*	0.125***	0.053	0.021	0.059	-0.032
R ²	0.392	0.482	0.433	0.335	0.408	0.455	0.343	0.488	0.584
adjustR ²	0.383	0.475	0.425	0.326	0.399	0.447	0.334	0.48	0.578
F	45.08***	65.218***	53.49***	35.279***	48.158***	58.423***	36.567***	66.655***	98.205***

Table 9. Test results of intermediary effect

effect	path	Standardization coefficient β	Standard error SE	Confidence interval
Total effect	SN→RERB	0.451	0.048	(0.355,0.544)
Direct effect	SN→RERB	0.173	0.040	(0.096,0.256)
Indirect effect	SN→SV→RERB	0.278	0.035	(0.212,0.346)
Indirect effect	SN→GV→RERB	0.216	0.034	(0.153,0.287)
Indirect effect	SN→DV→RERB	0.317	0.038	(0.239,0.390)
Total effect	ST→RERB	0.597	0.040	(0.516,0.673)
Direct effect	ST→RERB	0.346	0.048	(0.253,0.444)
Indirect effect	ST→SV→RERB	0.251	0.040	(0.175,0.332)
Indirect effect	ST→GV→RERB	0.189	0.032	(0.130,0.257)
Indirect effect	ST→DV→RERB	0.351	0.038	(0.275,0.425)
Total effect	SR→RERB	0.782	0.036	(0.704,0.845)
Direct effect	SR→RERB	0.555	0.046	(0.464,0.640)
Indirect effect	SR→SV→RERB	0.228	0.035	(0.162,0.298)
Indirect effect	SR→GV→RERB	0.166	0.031	(0.108,0.230)
Indirect effect	SR→DV→RERB	0.363	0.040	(0.285,0.440)

5. Results, Suggestions and Discussion

5.1. Results

Based on S-O-R theory, this study explores the mechanism of social capital in Hongcun town of Huangshan city on the environmental responsibility behavior of residents in tourist destinations, and draws the following conclusions:

(1) The three dimensions of social capital can significantly and positively affect the environmental responsibility behavior of residents in tourist destinations.

(2) The three dimensions of perceived value can significantly and positively affect the environmental responsibility behavior of residents in tourist destinations. Among them, the value of destination development has the greatest positive impact on the environmental responsibility behavior of residents in tourist destinations, followed by self-reference value, and the positive impact of group reference value on the environmental responsibility behavior of residents in tourist destinations is relatively weak.

(3) The three dimensions of social capital have a significant positive impact on perceived value, among which social trust and social norms have a stronger positive impact on perceived value than social networks. Among the three dimensions of perceived value, social trust has the most significant positive impact on destination development value, followed by self-reference value and finally group reference value.

5.2. Suggestions

(1) Pay attention to the cultivation of social capital.

To enhance the social capital of residents in tourist destinations, we should broaden the social network of residents and promote exchanges and contacts among residents. The managers of tourist destinations can make local residents more involved in the sustainable development of tourist destinations by strengthening the construction of non-governmental grassroots organizations. It is also very important for the improvement of social capital to enhance residents' trust in other residents and managers of tourist destinations. Build a platform for residents to participate in

community construction, ensure the universality and timeliness of information dissemination, minimize the possibility of asymmetric information transmission, create a community atmosphere in which residents trust and help each other, and then increase the frequency of residents' interaction with others and the level of residents' trust in others. The managers of tourist destinations should pay attention to the binding effect of informal norms such as village rules and regulations on local residents, improve the contents of environmental protection treaties in village rules and regulations, and publicize and guide them through radio and major online platforms to encourage local residents to actively implement environmental responsibility behaviors.

(2) Pay attention to improving residents' perceived value level.

Tourist destination managers can spread environmental protection knowledge through radio, community bulletin boards, publicity banners, distribution of brochures and other publicity methods, so as to make environmental protection closer to residents' lives and deepen local residents' understanding of environmental responsibility behavior. We should also establish a reasonable income distribution system, enrich residents' ways to participate in tourism development, and attract as many local residents as possible to local tourism development, such as homestays, farmhouses, cultural and creative shops, gourmet huts, etc., to provide some job opportunities for those who are unemployed at home, and at the same time attract some local college students to return to their hometowns, thus injecting young vitality into local tourism culture construction.

5.3. Discussion

In this study, the data of residents in tourist destinations are collected only at one time point. In order to measure the dynamic changes of residents' social capital, perceived value and environmental responsibility behavior in tourist destinations, future research can measure residents' social capital, perceived value and environmental responsibility behavior several times on a time line to improve the research conclusion. We can select various types of tourist destinations, conduct questionnaire surveys on local residents respectively, expand the sample size, and study how social capital and perceived value affect the environmental responsibility behavior of residents in different types of tourist destinations, so as to make the research conclusions more applicable.

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