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Exploring Community Residents' Intentions to Support for Tourism in China's National Park: A Two-Stage Structural Equation Modeling–Artificial Neural Network Approach

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Abstract

In the process of establishing a protected area system centered on national parks, China's policies inevitably impact the traditional livelihoods of original community residents, often leading to a diminished sense of social justice. Tourism, serving as a critical bridge between realizing the value of national parks' ecological products and transitioning community livelihoods, is pivotal for fostering coordination between conservation efforts and community support for tourism. This coordination is essential for enhancing the community's perception of social justice and achieving the sustainable development goals of national parks. This study aims to investigate the antecedents influencing community willingness to support tourism in national parks. Data were collected from 326 original residents of Wuyishan National Park in China and analyzed using a dual-stage approach that combines Structural Equation Modeling (SEM) and Artificial Neural Networks (ANN). The findings indicate that all three dimensions of perceived justice—distributive, procedural, and interactional—significantly and positively influence the community's willingness to support tourism. Community tourism empowerment mediates the relationship between these three dimensions of perceived justice and the support for tourism development. The contrasting results between PLS-SEM and ANN in Model A reveal the complex nature of how perceptions of fairness facilitate community empowerment.

Keywords: national park; justice; community tourism empowerment; support for tourism



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1. Introduction

National parks constitute the main body of China's nature reserve system and are vital sites for the realization of ecological product value [1]. However, management measures implemented during their establishment, such as resident relocation, land tenure reconstruction, and restrictions on resource use, can have multifaceted negative impacts on community livelihoods. Resource access prohibitions and the compression of traditional livelihood spaces weaken the livelihood autonomy of communities within national parks, leading to prominent issues of land loss and unemployment, reduced income sources, and increased livelihood vulnerability. The inequitable distribution of these negative impacts often prompts communities to adopt adverse coping strategies (e.g., illegal resource extraction and reversion to traditional livelihood models), creating a structural conflict between conservation objectives and community development needs, which in turn constrains the realization of sustainable development goals for national parks.

In this context, tourism activities can profoundly embody the dual functions of scientific conservation and rational utilization of national parks, while providing communities with greater opportunities for economic development, employment security, cultural exchange, and environmental improvement [2,3]. Consequently, the community's attitude towards tourism in national parks has become a crucial factor influencing their subsequent development.

Current research on the influence of residents' perceived justice in the tourism context primarily focuses on factors such as community participation, nepotism, and tourism benefits [4–6], as well as perceptions regarding resource allocation, opportunity access, and rights protection [7]. Residents may perceive inequities in resource distribution and opportunities, leading to a sense of injustice that negatively affects their engagement and support for tourism activities [8]. Therefore, this study posits that distributive, procedural, and interactional justice are key drivers of community support for tourism, consistent with the existing literature. While these factors influence community livelihoods and perceptions of national park development, a comprehensive investigation of the antecedents of perceived justice is lacking. Notably, existing studies lack systematic examination of how the three justice dimensions simultaneously influence community empowerment within national parks' unique governance context, where conservation priorities fundamentally alter traditional livelihoods.

To bridge this gap, this study, drawing on the Stimulus–Organism–Response (S-O-R) model, investigates the impact of perceived social justice (Stimulus) on the willingness to support tourism (Response) through the lens of community tourism empowerment (Organism). The theory of empowerment not only addresses community participation in the development process and the sharing of benefits but also emphasizes their control over tourism development, thereby elevating their status as empowered actors [9,10]. This may, in turn, influence their support for tourism. Accordingly, this study explores the mediating role of community tourism empowerment in the relationship between perceived social justice and tourism support, aiming to deepen the understanding of how community rights influence decision-making. By integrating S-O-R theory with organizational justice and empowerment frameworks, this study advances theoretical understanding by revealing the psychological mechanism through which fairness perceptions are internalized and transformed into behavioral support via the empowerment pathway.

To address these research objectives and the complex relationships between variables, this study adopts a two-stage method combining Structural Equation Modeling (SEM) and Artificial Neural Network (ANN) analysis. This approach allows for a comprehensive examination of both linear and non-linear relationships between variables, leveraging the strengths of SEM in hypothesis testing and the predictive power of ANN in handling complex non-linear interactions [11,12]. The combination of SEM and ANN not only enhances the robustness of the research findings but also provides a methodological contribution to the study of community behavior. The SEM-ANN integration represents a methodological advancement by combining rigorous hypothesis testing of causal relationships with the capacity to uncover non-linear dynamics and predictive hierarchies, thereby providing both theoretical confirmation and enhanced predictive accuracy beyond conventional linear approaches.

Specifically, this study addresses three research questions: How do the three dimensions of perceived justice influence community tourism empowerment? What is the relationship between perceived justice, community empowerment, and tourism support? How do non-linear dynamics shape these relationships?

2. Literature Review

2.1. Stimulus–Organism–Response (S-O-R) Theory

The Stimulus–Organism–Response (S-O-R) theory provides a fundamental framework for understanding how external stimuli affect an individual's internal state, which in turn leads to specific behavioral responses [13]. These stimuli (S) influence the organism (O), which represents the individual's internal state, including emotional and cognitive processes that interpret the stimuli. The organism's response, formed by these internal states, manifests as approach or avoidance behaviors (R) [14]. As a parsimonious framework in consumer behavior and environmental psychology, the S-O-R theory explains how external environmental stimuli affect consumers' cognitive and emotional states, thereby influencing their behavior. It emphasizes the importance of considering an individual's internal state when examining their response to external stimuli [13].

In the context of community behavior, the S-O-R framework enhances our understanding of the psychological mechanisms underlying community support for tourism. At the stimulus level, various external environmental changes brought about by tourism development, such as infrastructure improvements, increased employment opportunities, and enhanced cultural exchange, constitute significant stimuli affecting community residents. These stimuli include both tangible physical environmental changes and intangible shifts in the socio-cultural atmosphere. At the response level, residents' supportive behaviors, participation intentions, and cooperative attitudes reflect the externalization of their internal psychological processes.

2.2. Perceived Justice

Adams first proposed equity theory, conceptualizing the issue of fairness and concluding that salary distribution and subjective perceptions of fairness closely influence employee motivation, behavior, and job satisfaction. This later became known as “distributive justice” [15,16]. Thibaut, while studying fairness in legal proceedings, focused on the fairness of the decision-making process and its implementation, proposing “procedural justice.” This theory has been widely applied in legal systems, organizational management, and conflict resolution, providing an important theoretical basis for understanding the legitimacy of authority and rule compliance [17]. This theory later became a significant branch of organizational justice research, and together with Adams's theory of distributive justice, it forms the two main pillars of modern justice theory. Bies and Moag focused on interpersonal interactions during the implementation of procedures, terming it “interactional justice” [18].

2.3. Community Tourism Empowerment

Community Tourism Empowerment refers to the process of enhancing the capabilities and status of local community residents across economic, social, political, and psychological dimensions through participation and sharing of decision-making power in tourism development. It emphasizes the transformation of community members from passive recipients of tourism development to active participants and beneficiaries, achieving self-management, self-development, and self-determination [9,10]. In terms of theoretical framework construction, Scheyvens proposed a groundbreaking four-dimensional theoretical framework for community tourism empowerment, including economic empowerment (economic benefits and employment opportunities), psychological empowerment (self-esteem and cultural pride), social empowerment (community cohesion and traditional preservation), and political empowerment (participation in decision-making and voice) [9], laying a solid theoretical foundation for subsequent related research. In the field of participation research, scholars have drawn on Arnstein's “ladder of participation” theory [19], and Pretty

further developed a typology of participation, classifying community participation into seven progressive levels from manipulative participation to self-mobilization, providing an important analytical tool for evaluating the effectiveness of community empowerment [20].

2.4. Support for Tourism

Community residents' support for national park tourism development is considered a key factor in achieving coordinated development of ecological protection and sustainable tourism [10,21–23]. This issue has received widespread attention from academia, and related research is growing rapidly. Previous research primarily viewed residents' support for national park tourism as a result of residents' perceived economic benefits and ecological costs based on Social Exchange Theory (SET) [24–28]. SET assumes that community residents tend to support national park tourism development only when their perceived tourism benefits (e.g., employment opportunities, infrastructure improvements) outweigh the perceived costs (e.g., ecological damage, cultural impact) [29]. Conversely, if local residents believe that the negative impacts outweigh the positive effects, they will be unwilling to participate in the development of national park tourism and may even resist [30].

This study integrates S-O-R theory, perceived justice theory, community empowerment theory, and tourism support theory to construct a comprehensive analytical framework for community tourism support behavior in national parks. S-O-R theory provides a process-oriented analytical perspective for the study, conceptualizing perceived justice (distributive justice, procedural justice, interactional justice) as stimulus factors, community empowerment (economic, psychological, social, political empowerment) as organismic responses, and willingness to support tourism as behavioral outcomes. This framework goes beyond traditional economic rationality analysis, placing fairness and justice at the core of theoretical analysis.

3. Hypothesis Development

3.1. The Relationship Between Perceived Justice and Community-Based Tourism Empowerment

There is a deep interdependent and dynamic interactive relationship between perceived social justice and community tourism empowerment, which can effectively promote the development of sustainable tourism. Perceived social justice, through its three dimensions of procedural justice, distributive justice, and interactional justice, provides the necessary psychological foundation and institutional conditions for community empowerment [31]. When community residents perceive transparency in decision-making processes, fairness in benefit distribution, and respect in communication and interaction during tourism development, they are more willing to actively participate in tourism activities and invest resources and energy [32], thereby achieving substantial empowerment at economic, psychological, social, and political levels [33].

H1: *Perceived distributive justice positively influences community tourism empowerment.*

H1a: *Perceived distributive justice positively influences community economic tourism empowerment.*

H1b: *Perceived distributive justice positively influences community psychological tourism empowerment.*

H1c: *Perceived distributive justice positively influences community social tourism empowerment.*

H1d: *Perceived distributive justice positively influences community political tourism empowerment.*

H2: *Perceived procedural justice positively influences community tourism empowerment.*

H2a: *Perceived procedural justice positively influences community economic tourism empowerment.*

H2b: *Perceived procedural justice positively influences community psychological tourism empowerment.*

H2c: *Perceived procedural justice positively influences community social tourism empowerment.*

H2d: *Perceived procedural justice positively influences community political tourism empowerment.*

H3: *Perceived interactional justice positively influences community tourism empowerment.*

H3a: *Perceived interactional justice positively influences community economic tourism empowerment.*

H3b: *Perceived interactional justice positively influences community psychological tourism empowerment.*

H3c: *Perceived interactional justice positively influences community social tourism empowerment.*

H3d: *Perceived interactional justice positively influences community political tourism empowerment.*

3.2. The Relationship Between Perceived Justice and Support for Tourism

According to organizational justice theory, a high level of perceived justice leads to a higher level of psychological satisfaction, including self-worth and dignity [34,35]. When individuals perceive fair treatment, they will exhibit positive behaviors such as willingness to cooperate, supportive attitudes, and positive evaluations [36]. Following this logic, perceived justice is an important antecedent variable for community residents' support for tourism development.

H4: *Perceived justice positively influences support for tourism development.*

H4a: *Perceived distributive justice positively influences support for tourism development.*

H4b: *Perceived procedural justice positively influences support for tourism development.*

H4c: *Perceived interactional justice positively influences support for tourism development.*

3.3. The Relationship Between Community-Based Tourism Empowerment and Support for Tourism

There is a close positive relationship between community tourism empowerment and tourism support [9,37]. When community residents gain more power and capabilities in tourism development, their willingness to support tourism projects significantly increases [38]. This relationship is reflected through the four core dimensions of empowerment: economic empowerment, psychological empowerment, social empowerment, and political empowerment. Economic empowerment directly influences residents' attitudes towards tourism development by providing employment opportunities, increasing income sources, and improving living conditions [39]. Psychological empowerment involves the enhancement of self-esteem, self-confidence, and cultural pride [40]. Social empowerment emphasizes the strengthening of community cohesion and collective action capabilities [41,42]. Political empowerment focuses on residents' voice and influence in decision-making processes [20,43].

H5: *Community empowerment positively influences support for tourism development.*

H5a: *Economic empowerment positively influences support for tourism development.*

H5b: *Psychological empowerment positively influences support for tourism development.*

H5c: Social empowerment positively influences support for tourism development.

H5d: Political empowerment positively influences support for tourism development.

3.4. Mediating Role of Community-Based Tourism Empowerment

According to social cognitive theory, individual attitudes and behaviors are jointly influenced by three dimensions: cognitive, affective, and behavioral. Among these, cognitive factors (perceived justice) influence individual attitudes and behavioral performance by affecting their sense of competence and control [44]. In the context of tourism development, perceived justice, as an important cognitive factor, first influences residents' perceptions and experiences of empowerment, then through the capacity enhancement and power expansion gained in the empowerment process, ultimately affects their supportive attitudes toward tourism development. External environmental factors (such as fair institutional arrangements) need to influence behavioral choices effectively through changes in individual internal states (such as enhanced sense of empowerment) [45]. Perceived justice enhances residents' sense of self-efficacy, control, and belonging, promoting the establishment of their subjective status in tourism development, thereby stimulating positive supportive behaviors.

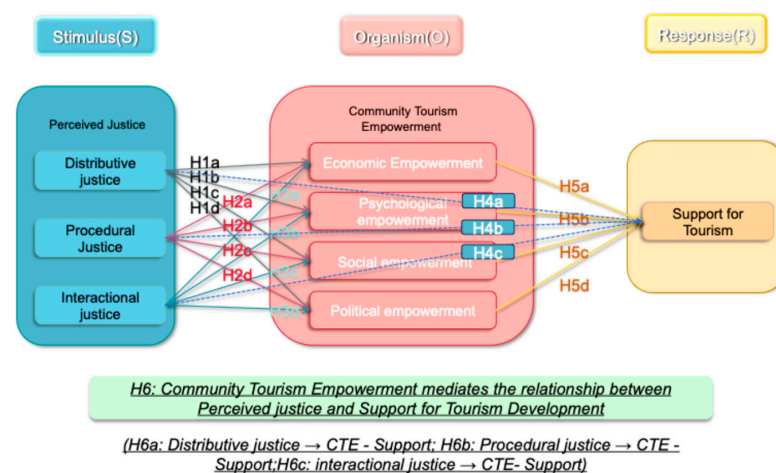
H6: Community tourism empowerment mediates the relationship between perceived justice and support for tourism development.

H6a: Community tourism empowerment mediates the relationship between perceived distributive justice and support for tourism development.

H6b: Community tourism empowerment mediates the relationship between perceived procedural justice and support for tourism development.

H6c: Community tourism empowerment mediates the relationship between perceived interactional justice and support for tourism development.

We have added a statement clarifying that all relationships between hypotheses are shown in Figure 1.



Note: CTE = Community Tourism Empowerment; Solid arrows indicate direct effects; Multiple paths indicate mediation effects

Figure 1. Conceptual framework figure.

4. Methods

4.1. Case Study Area

Wuyishan National Park was selected for its representativeness: it features diverse community types (internal, gateway, peripheral) with varying proximity to tourism resources and different livelihood dependencies (tea, agriculture, tourism). This diversity enables comprehensive examination of justice perceptions across different socioeconomic contexts. As one of China's first national parks, Wuyishan exemplifies the conservation-livelihood tensions typical of protected area management.

4.2. Data Collection and Sample

This study selected Wuyishan National Park in China as the research object. Wuyishan National Park (Fujian section) covers Wuyishan City, Jianyang District, Guangze County, and Shaowu City in Nanping City, Fujian Province, including 9 townships (sub-districts) such as Wuyi Street, Xingtian Town, Xingcun Town, Yangzhuang Township, Luanfeng Township, Siqian Township, Zhaile Town, Huangkeng Town, and Shuibei Town. Wuyishan National Park (Jiangxi section) covers Huangbi She Ethnic Township, Wuyishan Town, and Yingjiang Township in Yanshan County, Shangrao City, Jiangxi Province. The total area is 1279.8 km². The main sources of economic income for communities within and around the national park are tea, tourism, and agriculture. Based on the boundary division of Wuyishan National Park and the current status of community industrial development, different types of communities were selected, including 9 communities of three types: internal communities, entrance communities, and surrounding communities. Information on the main industries of the communities is shown in Table 1.

The communities selected for this study differ in terms of geographical location relative to the national park, socioeconomic conditions, and natural resource endowments. Therefore, the tourism development situations vary, and perceptions of fairness and benefits obtained differ. Residents of different communities hold different opinions on the construction of national parks and the development of tourism, thus the selection of this case is theoretically justifiable.

From 19 to 25 July 2023, the research team conducted a field survey in Wuyishan National Park. In the preliminary pre-survey, questionnaires were randomly distributed to local residents. A typical and sampling survey method was adopted by dividing into villages. A total of 343 questionnaires were distributed on-site, of which 17 invalid questionnaires were screened out, resulting in a total of 326 valid questionnaires, with an effective rate of 95%. The basic characteristics of the sample are as follows: The gender ratio of respondents is relatively balanced, with females slightly higher than males, accounting for 57.7%. In terms of age, 81.6% of the respondents are under 62 years old, among which 45–54 years old (25.5%) and 55–64 years old (24.5%) account for a larger proportion. The educational level of the respondents is relatively low, mainly below junior high school, accounting for 72.1% of the total sample. The average monthly personal income is low, with 1001–2000 yuan being the most common, accounting for 28.5% of the total sample. See Appendix A Table A1 for details.

Table 1. Wuyishan National Park Community Basic Information.

Region	County (City, District)	Township (Street)	Management Station	Administrative Village	Community Type	Main Industries
Fujian Region	Wuyishan City	Xingcun Town	Fujian Region Xingcun Management Station	Tongmu Village	Internal Community	Tea Industry, Tourism
Fujian Region	Wuyishan City	Xingcun Town	Xingcun Management Station	Xingcun Village	Gateway Community	Tea Industry, Tourism
Fujian Region	Wuyishan City	Xingtian Town	Wuyi Management Station	Nanyuanling Village	Gateway Community	Tourism, Tea Industry
Fujian Region	Wuyishan City	Xingtian Town	Wuyi Management Station	Dazhou Village	Peripheral Community	Agriculture
Fujian Region	Guangze County	Zhaili Town	Zhaili Management Station	Baishi Village	Peripheral Community	Agriculture, Tobacco Leaves
Fujian Region	Guangze County	Zhaili Town	Zhaili Management Station	Taolin Village	Gateway Community	Tobacco Leaves, Edible Mushrooms
Fujian Region	Jianyang District	Huangkeng Town	Huangkeng Management Station	Aotou Village	Internal Community	Tea Industry, Beekeeping
Fujian Region	Jianyang District	Huangkeng Town	Huangkeng Management Station	Changjian Village	Gateway Community	Agriculture, Bamboo Industry
Jiangxi Region	Yanshan County	Huangbi She Ethnic Township	Jiangxi Region Huangbi Management Station	Huangbi Village	Gateway Community	Tea Industry, Tourism

4.3. Research Instrument

This study utilized measurement items validated in previous research. Minor modifications were made to adapt to the research setting. The scales were initially referenced from English literature and then translated into the target language, Chinese. All constructs were assessed using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The social justice scale was adapted from Wang et al. [46], while community tourism empowerment followed the questionnaires of Wang and Pfister and Boley and McGehee [47,48]. Support for tourism was measured using items from Ribeiro et al. [49]. The list of measurement items is provided in Appendix A Table A2.

The questionnaire was translated from English to Chinese following the back-translation procedure. Two bilingual experts independently translated and back-translated the items, with discrepancies resolved through discussion. A pilot test with 30 residents confirmed the clarity and cultural appropriateness of the items.

4.4. Data Analysis Method

This study adopted a dual-stage approach, using SEM followed by ANN analysis, to explore the antecedents of original residents' support for local tourism activities in national parks. SEM is commonly used to estimate and verify proposed research models and hypotheses [50]. SEM methods are divided into two types: covariance-based and variance-based (Partial Least Squares SEM) methods [51]. This study adopted the variance-based Partial Least Squares SEM (PLS-SEM) method.

Table 2 shows a significant non-linear relationship ($p < 0.05$) between residents' willingness to support tourism activities in national parks and other influencing factors. Due to the violation of multivariate assumptions and the presence of non-linear relationships, we supplemented PLS-SEM with the ANN method using SPSS (version 22; IBM Corp., Armonk, NY, USA). ANN excels at capturing complex, non-linear relationships between variables and enhances predictive accuracy, surpassing linear models such as SEM [52]. However, due to its "black box" nature, it is not suitable for causal inference and hypothesis testing [53]. Therefore, a dual-stage approach combining PLS-SEM and ANN is necessary to reveal and accurately model non-linear dynamics to better predict the support of national park community residents for local tourism activities.

Figure 2 illustrates the analytical framework: (1) Data collection and screening, (2) PLS-SEM analysis for hypothesis testing, (3) ANN modeling for non-linear relationship examination, (4) Sensitivity analysis for predictor importance ranking, (5) Cross-validation of SEM and ANN results.

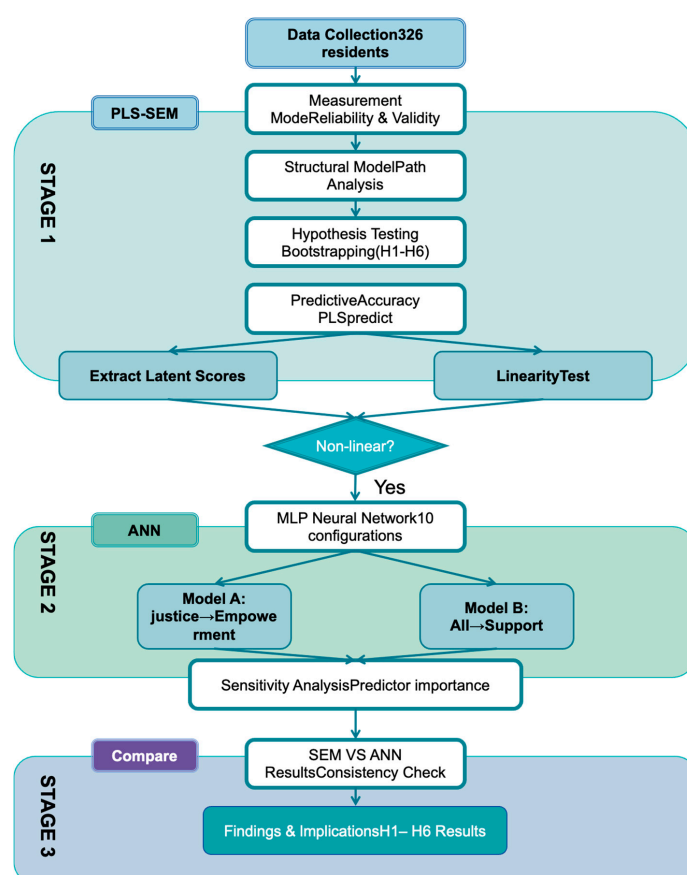
4.5. Non-Response Bias and Common Method Bias

Since the data source for this study is singular, procedural and statistical measures were implemented to address common method bias (CMB) according to Podsakoff et al. [54]. The common method variance (CMV) analysis reveals that common method bias does not pose a substantial threat to the validity of this study. The results demonstrate a clear dominance of substantive variance over method variance across all constructs. The list of measurement items is provided in Appendix A Table A3. This finding holds consistently for both the exogenous constructs (distributive, procedural, and interactional justice) and the endogenous constructs (four dimensions of community tourism empowerment and support for tourism).

Table 2. Linearity of Relationships.

		Sum of Squares	Df	Mean Square	F Test	Sig.
SFT × DJ	combined	77.07	16	4.82	7.39	0.000
	Linearity	48.38	1	48.38	74.25	0.000
	Deviation from linearity	28.69	15	1.91	2.94	0.015
SFT × PJ	combined	54.56	16	3.41	4.71	0.000
	Linearity	38.57	1	38.57	53.23	0.000
	Deviation from linearity	15.99	15	1.07	1.47	0.124
SFT × IJ	combined	27.23	15	1.82	2.24	0.007
	Linearity	17.65	1	17.65	21.78	0.000
	Deviation from linearity	9.58	14	0.68	0.84	0.622
SFT × ECET	combined	28.46	16	1.78	2.20	0.006
	Linearity	16.31	1	16.31	20.17	0.000
	Deviation from linearity	12.14	15	0.81	1.00	0.462
SFT × SOET	combined	71.67	15	4.78	7.16	0.000
	Linearity	56.86	1	56.86	85.25	0.000
	Deviation from linearity	14.81	14	1.06	1.59	0.092
SFT × POET	combined	41.06	16	2.57	3.34	0.000
	Linearity	31.76	1	31.76	41.34	0.000
	Deviation from linearity	9.30	15	0.62	0.81	0.663
SFT × PSET	combined	49.51	16	3.09	4.18	0.000
	Linearity	35.76	1	35.76	48.28	0.000
	Deviation from linearity	13.75	15	0.92	1.24	0.259

Note: DJ = Distributive justice; PJ = procedural justice; IJ = interactional justice; ECET= Community Tourism Economic Empowerment; SOET = Community Tourism Social Empowerment; POET = Community Tourism Political Empowerment; PSET = Community Tourism Psychological Empowerment; SFT = support for tourism.

**Figure 2.** Methodological Diagram.

5. Results

5.1. Assessing the Outer Measurement Model

The outer measurement model examined internal reliability, convergent validity, and discriminant validity. The results are shown in Table 3. To assess internal consistency, composite reliability (CR) and rho_A were used. When CR and rho_A values exceeded the 0.70 benchmark, a satisfactory level was achieved, indicating strong internal reliability.

Table 3. Results of validity and reliability.

Construct	Item	Outer Loading	AVE	CR	Rho_A
Distributive Justice	1	0.789	0.623	0.868	0.856
	2	0.812			
	3	0.798			
	4	0.756			
Procedural Justice	1	0.834	0.682	0.895	0.887
	2	0.847			
	3	0.798			
	4	0.823			
Interactional Justice	1	0.756	0.623	0.868	0.845
	2	0.798			
	3	0.812			
	4	0.789			
Community Tourism Economic Empowerment	1	0.823	0.686	0.897	0.891
	2	0.856			
	3	0.834			
	4	0.798			
Community Tourism Social Empowerment	1	0.867	0.719	0.911	0.912
	2	0.845			
	3	0.823			
	4	0.856			
Community Tourism Political Empowerment	1	0.798	0.654	0.883	0.878
	2	0.834			
	3	0.812			
	4	0.789			
Community Tourism Psychological Empowerment	1	0.812	0.668	0.890	0.886
	2	0.789			
	3	0.823			
	4	0.845			
Support For Tourism	1	0.778	0.644	0.916	0.901
	2	0.823			
	3	0.845			
	4	0.798			
	5	0.812			
	6	0.756			

Discriminant validity was assessed using the Fornell & Larcker criterion and the more stringent Heterotrait–Monotrait (HTMT) ratio [55]. Table 4 shows that the square root of the AVE for each construct exceeded the off-diagonal correlation coefficients. Therefore, discriminant validity was established.

Table 4. Result of discriminate validity.

	SFT	DJ	PJ	IJ	ECET	SOET	POET	PSET
SFT	0.752							
DJ	0.417	0.798						
PJ	0.372	0.305	0.785					
IJ	0.252	0.199	0.298	0.806				
ECET	0.242	0.398	0.294	0.357	0.773			
SOET	0.452	0.333	0.284	0.239	0.313	0.791		
POET	0.338	0.344	0.332	0.262	0.266	0.311	0.782	
PSET	0.358	0.348	0.424	0.285	0.337	0.327	0.340	0.768

Note: DJ = Distributive justice; PJ = Procedural Justice; IJ = Interactional Justice; ECET = Community Tourism Economic Empowerment; SOET = Community Tourism Social Empowerment; POET = Community Tourism Political Empowerment; PSET = Community Tourism Psychological Empowerment; SFT = support for tourism. Bold values on the diagonal represent the square root of AVE.

5.2. Inspecting the Inner Structural Model

Table 5 shows the results of hypothesis testing using the percentile bootstrapping technique with 5000 resamples [56]. All VIF values for the hypothesized relationships were between 1.22 and 2.14, well below the threshold of 5 [57]. Therefore, there was no multicollinearity among the variables in the study. As shown in Table 5, all three types of justice had a significant positive impact on the four empowerment dimensions. All three types of justice directly and positively influenced tourism support, with procedural justice having the strongest impact. All community empowerment dimensions mediated the relationship between perceived justice and tourism support.

Table 5. Results of hypothesis testing.

Effect	Stdβ	t-Value	95%CIs	Remark	VIF	R ²
Direct effects						
H1 DJ→CTE	0.391	6.854	[0.279, 0.503]	Supported	1.723	0.387
H1a DJ→CTE(ECET)	0.426	7.503	[0.315, 0.537]	Supported	1.658	0.342
H1b DJ→CTE(POET)	0.384	6.723	[0.272, 0.496]	Supported	1.689	0.298
H1c DJ→CTE(PSET)	0.371	6.512	[0.259, 0.483]	Supported	1.634	0.285
H1d DJ→CTE(SOET)	0.403	7.087	[0.291, 0.515]	Supported	1.712	0.324
H2 PJ→CTE	0.313	5.489	[0.201, 0.425]	Supported	1.847	0.387
H2a PJ→CTE(ECET)	0.349	6.125	[0.237, 0.461]	Supported	1.784	0.342
H2b PJ→CTE(POET)	0.295	5.178	[0.183, 0.407]	Supported	1.823	0.298
H2c PJ→CTE(PSET)	0.287	5.034	[0.175, 0.399]	Supported	1.756	0.285
H2d PJ→CTE(SOET)	0.331	5.801	[0.219, 0.443]	Supported	1.812	0.324
H3 IJ→CTE	0.272	4.767	[0.160, 0.384]	Supported	1.698	0.387
H3a IJ→CTE(ECET)	0.298	5.234	[0.186, 0.410]	Supported	1.623	0.342
H3b IJ→CTE(POET)	0.261	4.579	[0.149, 0.373]	Supported	1.667	0.298
H3c IJ→CTE(PSET)	0.254	4.456	[0.142, 0.366]	Supported	1.634	0.285
H3d IJ→CTE(SOET)	0.279	4.893	[0.167, 0.391]	Supported	1.656	0.324
H4 JUSTICE→SFT	0.347	6.500	[0.242, 0.452]	Supported	2.141	0.456
H4a DJ→SFT	0.417	7.321	[0.305, 0.529]	Supported	1.723	0.456
H4b PJ→SFT	0.372	6.534	[0.260, 0.484]	Supported	1.847	0.456
H4c IJ→SFT	0.252	4.423	[0.140, 0.364]	Supported	1.698	0.456
H5 CTE→SFT	0.495	8.689	[0.383, 0.607]	Supported	1.000	0.245
H5a CTE(ECET)→SFT	0.487	8.545	[0.375, 0.599]	Supported	2.145	0.534
H5b CTE(POET)→SFT	0.453	7.954	[0.341, 0.565]	Supported	2.089	0.534
H5c CTE(PSET)→SFT	0.469	8.234	[0.357, 0.581]	Supported	2.067	0.534
H5d CTE(SOET)→SFT	0.476	8.356	[0.364, 0.588]	Supported	2.123	0.534

Table 5. *Cont.*

Effect	Stdβ	t-Value	95%CIs	Remark	VIF	R ²
Indirect effects						
H6 JUSTICE→CTE→SFT	-	-	-	-	-	-
H6a DJ→CTE→SFT	0.194	4.234	[0.108, 0.280]	Supported	-	-
H6b PJ→CTE→SFT	0.155	3.512	[0.069, 0.241]	Supported	-	-
H6c IJ→CTE→SFT	0.135	3.089	[0.049, 0.221]	Supported	-	-

Note: DJ = Distributive justice; PJ = Procedural Justice; IJ = Interactional Justice; ECET = Community Tourism Economic Empowerment; SOET = Community Tourism Social Empowerment; POET = Community Tourism Political Empowerment; PSET = Community Tourism Psychological Empowerment; SFT = support for tourism.

The in-sample explanatory power was examined using R² measures. As shown in Table 5. Finally, the predictive accuracy of the model for out-of-sample data was estimated using the method of Shmueli et al. [58]. The PLS predict procedure with 10 cross-validation folds and repetitions was used. As shown in Table 6, the Q² predict values for the endogenous structural items were greater than zero. The root mean square error (RMSE) values for all endogenous items were lower than the original linear model (LM) benchmark. These results indicate that the research model achieved moderate to high predictive accuracy [59].

Table 6. Results of PLSpredict.

Item	Q ² Predict	RMSE PLS-SEM	RMSE LM	Difference
ECET	0.293	0.948	1.133	−0.185
SOET	0.249	1.055	1.226	−0.171
POET	0.284	0.858	1.021	−0.164
PSET	0.264	0.887	1.053	−0.166
SFT1	0.187	1.028	1.150	−0.122
SFT2	0.094	1.057	1.121	−0.064
SFT3	0.105	1.158	1.233	−0.075
SFT4	0.159	1.029	1.129	−0.100
SFT5	0.171	1.026	1.135	−0.109
SFT6	0.114	1.050	1.129	−0.079

Note: ECET = Community Tourism Economic Empowerment; SOET = Community Tourism Social Empowerment; POET = Community Tourism Political Empowerment; PSET = Community Tourism Psychological Empowerment; SFT = Support For Tourism.

5.3. Mediating Effect of Perceived Consumer Effectiveness

The mediating effect of community tourism empowerment was analyzed using the research of Rungtusanatham et al. [60]. The indirect effects were analyzed and evaluated, and a 5000-resample bootstrapping procedure was used to estimate the confidence intervals of the indirect effects. Therefore, the lower limit (LL) and upper limit (UL) values of the confidence intervals did not cross zero [61]. As shown in Table 5, community tourism empowerment played a mediating role in the impact of perceived justice on community willingness to support tourism. The indirect effects were significant and had similar (positive) effects to the direct effects.

5.4. Artificial Neural Network (ANN) Analysis

In the dual-stage method, the artificial neural network method was adopted to reveal non-linear relationships and prioritize the relative importance of important predictors [62]. ANN is a computational model inspired by neural networks in the human brain, consisting of interconnected nodes or neurons arranged in layers: an input layer, one or more hidden layers, and an output layer [63].

In this study, the most commonly used artificial neural network method, the Multilayer Perceptron (MLP) backpropagation feedforward algorithm, was used for the study [64]. This algorithm processes inputs forward and calculates errors backward to adjust the model [62]. After modeling with PLS-SEM, standardized latent variable scores were derived, and two ANN models were developed for endogenous variables: community tourism empowerment (Model A) and original residents' willingness to support local tourism activities in national parks (Model B) [65].

As shown in Table 7, Model A: the standard deviation is moderate, reflecting the normal variability of different architectures. The difference between the test set and the training set was small, indicating no better fit. Model B: The standard deviation is slightly larger, indicating a higher complexity. Both models show good generalization capability. Ten different NN architectures produced some variability. This level of variability is consistent with the random initialization and architectural differences in neural networks. Model A has less prediction error, probably because CTE is more predictable as an intermediary variable, confirming the reliability and accuracy of the ANN model [66].

Table 7. Assessment of ANN predictive accuracy.

Neural Network	Modal A		Modal B	
Input: DJ, PJ, IJ; Output: CTE			Input: DJ, PJ, IJ, CTE; Output: SFT	
	Training	Testing	Training	Testing
ANN1	0.532	0.426	0.781	0.687
ANN2	0.525	0.500	0.769	0.810
ANN3	0.519	0.543	0.760	0.861
ANN4	0.517	0.559	0.764	0.840
ANN5	0.519	0.548	0.770	0.789
ANN6	0.519	0.528	0.769	0.800
ANN7	0.535	0.390	0.771	0.760
ANN8	0.521	0.541	0.765	0.820
ANN9	0.524	0.500	0.777	0.749
ANN10	0.527	0.458	0.784	0.654
Mean	0.524	0.499	0.771	0.777
Std. Dev.	0.006	0.054	0.007	0.062

Note: DJ = Distributive justice; PJ = Procedural Justice; IJ = Interactional Justice; CTE = Community Tourism; SFT = Support For Tourism.

Subsequently, sensitivity analysis was performed on the two models to evaluate or prioritize the importance of input data in predicting the output. Sensitivity analysis is a method used to express the normalized relative importance of each input in the model as a percentage [67]. The results of the sensitivity analysis are shown in Table 8. In Model B, the most effective predictors for estimating original residents' willingness to support local tourism activities in national parks were found to be community tourism empowerment.

It is crucial to assess the consistency and reliability of results from different modeling techniques. For this purpose, Table 9 compares the outputs of PLS-SEM and ANN. Thus, the influence of predictors on the desired output was prioritized based on path coefficients in PLS-SEM and normalized relative importance in ANN, respectively. The outputs of PLS-SEM and ANN were found to be fully compatible and mutually supportive. For example, in Model A, perceived procedural justice became the most important predictor of community support for tourism. The ranking of predictor importance in Model B was also the same between PLS-SEM and ANN. This finding indicates a certain degree of robustness in the results, as the components of the dual-stage analysis are consistent with each other.

Table 8. Results of sensitivity analysis.

Neural Network	Modal A (Output: CTE)			Modal B (Output: SFT)			
	DJ	PJ	IJ	DJ	PJ	IJ	CTE
ANN1	0.329	0.338	0.333	0.260	0.251	0.215	0.275
ANN2	0.377	0.313	0.310	0.285	0.192	0.222	0.301
ANN3	0.379	0.350	0.271	0.300	0.170	0.155	0.375
ANN4	0.416	0.317	0.267	0.299	0.240	0.175	0.287
ANN5	0.364	0.293	0.343	0.357	0.171	0.142	0.329
ANN6	0.377	0.304	0.319	0.299	0.205	0.186	0.310
ANN7	0.384	0.287	0.329	0.287	0.229	0.181	0.303
ANN8	0.364	0.325	0.311	0.292	0.177	0.239	0.291
ANN9	0.386	0.318	0.295	0.295	0.202	0.116	0.387
ANN10	0.348	0.343	0.309	0.314	0.195	0.151	0.340
Average relative importance	0.372	0.319	0.309	0.299	0.203	0.178	0.320
Normalized relative importance	100.0	85.6	82.9	93.4	63.5	55.7	100.0

Note: DJ = Distributive Justice; PJ = Procedural Justice; IJ = Interactional Justice; CTE = Community Tourism Empowerment; SFT = Support For Tourism.

Table 9. Outcome comparison for PLS-SEM and ANN.

Path	Std.β	Normalized Relative Importance	Ranking (PLS-SEM)	Ranking (ANN)	Remark
Model A					
DJ→CTE	0.391	100.0	1	1	Consistent
PJ→CTE	0.313	85.6	2	2	Consistent
IJ→CTE	0.272	82.9	3	3	Consistent
Model B					
DJ→SFT	0.323	93.4	2	2	Consistent
PJ→SFT	0.318	63.5	3	3	Consistent
IJ→SFT	0.208	55.7	4	4	Consistent
CTE→SFT	0.663	100.0	1	1	Consistent

Note: DJ = Distributive Justice; PJ = Procedural Justice; IJ = Interactional Justice; CTE = Community Tourism Empowerment; SFT = Support For Tourism.

6. Discussion and Implications

6.1. Discussion

Our findings align with Wang et al. who demonstrated justice's positive impact on tourism support in Chinese contexts [46], yet extend their work by revealing empowerment's mediating role. Interestingly, our results contrast with Western studies (e.g., Boley & McGehee, 2014) [48] where economic empowerment dominates; in Wuyishan, procedural justice emerged as the strongest predictor, reflecting China's institutional context where transparent governance holds greater salience for communities historically excluded from decision-making.

The conceptual framework of this study effectively extends the S-O-R theory by employing a dual-stage approach to investigate the drivers of community residents' willingness to support tourism during national park development. Structural equation modeling analysis indicates that all three dimensions of perceived social justice significantly and positively promote community support for tourism activities. When individuals in a society perceive fair treatment, they are more willing to support and participate in national park tourism projects. Perceived justice can promote cooperation and unity within and outside the community, reduce internal conflicts, and provide a more solid foundation for the sustainable development of national parks.

Within the S-O-R framework, this study confirms that community tourism empowerment is a critical mediating variable. Community tourism empowerment refers to the enhancement of the community's power and influence in the process of tourism development, including power in decision-making, resource allocation, and benefit sharing. Perceived social justice refers to the degree to which individuals perceive the fairness of

social resource and opportunity distribution. Firstly, perceived social justice can indirectly influence community support for tourism activities by affecting community tourism empowerment. When community members' opinions are equally heard, resources are fairly distributed, and benefits are reasonably shared in tourism activities, they are more inclined to support the development of these tourism activities. This depends on whether perceived social justice can promote community members' sense of participation and identity, thereby enhancing their supportive attitudes towards tourism businesses. Secondly, community tourism empowerment, as a mediator of perceived social justice, can further strengthen the impact of perceived social justice on tourism activity support. When community members have more power and influence in tourism businesses, they will identify with and support these tourism activities more. Community tourism empowerment can enable the community to participate more actively in the decision-making and management of tourism businesses, further strengthening their support for tourism activities. Finally, there is a mutually influencing and reinforcing relationship between perceived social justice and community tourism empowerment. The enhancement of perceived social justice helps to strengthen community members' self-confidence and identity, thereby promoting the enhancement of their power and influence in tourism activities. The strengthening of community tourism empowerment, in turn, can further strengthen perceived social justice, forming a virtuous cycle that promotes community support for tourism activities. In summary, community tourism empowerment plays an important mediating role between perceived social justice and community support for tourism activities. Community tourism empowerment, as an enhancement of perceived justice, an increase in support, and an important channel for information and needs, helps to promote community support for tourism activities and lays the foundation for establishing a good relationship between the community and the tourism industry.

This study adopted a comprehensive method to complement the results of SEM and ANN, benefiting from the advantages of both methods [12]. Considering the findings of artificial neural networks, this study yielded outputs with high predictive accuracy. Table 9 shows that the PLS-SEM results are consistent with the ANN results, and in both methods, perceived procedural justice is the most important predictor. Overall, this paper reveals the research path of “perceived social justice—community tourism empowerment—support” for tourism activities in national parks, clarifying that enhancing perceived social justice and community tourism empowerment are key elements for increasing support. The virtuous cycle of perceived social justice—community tourism empowerment is an important basis and carrier for strengthening national park construction.

The ANN analysis complements SEM findings by revealing non-linear dynamics and ranking predictor importance. While SEM confirms the hypothesized causal pathways, ANN demonstrates that community tourism empowerment is the most critical predictor of tourism support, followed by distributive justice. This dual-stage validation enhances confidence in our theoretical model while providing actionable priorities for practitioners.

This study's innovations include: (1) first integration of S-O-R, justice, and empowerment theories in national park tourism contexts; (2) pioneering application of SEM-ANN methodology revealing both causal mechanisms and non-linear dynamics; (3) empirical evidence from China's national park pilot program, addressing the geographic research gap.

6.2. Implications

6.2.1. Theoretical Implications

This study advances S-O-R theory by integrating organizational justice and empowerment frameworks in the national park context. The mediating role of community empow-

erment reveals the psychological transformation mechanism from fairness perceptions to behavioral support, extending beyond direct effect models.

6.2.2. Practical Implications

For policymakers, enhancing procedural justice through transparent decision-making and community participation mechanisms is critical. National park authorities should prioritize empowerment programs that provide economic opportunities, political voice, and psychological recognition to foster sustainable tourism support.

Based on the above research, this paper proposes the following countermeasures and suggestions from the perspective of enhancing community residents' sense of fairness and community tourism empowerment.

In the research framework for exploring stakeholders' intention to support national park tourism (Figure 3), livelihood capital constitutes the foundational resources for community participation (Figure 3①), including six dimensions: natural capital, human capital, material capital, financial capital, cultural capital, and political capital. These diversified capital elements provide resource support for community participation in national park governance. National park governance presents a multi-centric collaborative pattern (Figure 3②), where government/management agencies play a leading role, forming a complex governance network with multiple entities such as public services, ecological protection, co-management, social organizations/enterprises, ecological restoration/social enterprises, private governance, and traditional knowledge/community protection, reflecting the deep integration of community governance, community organizations, and community protection.

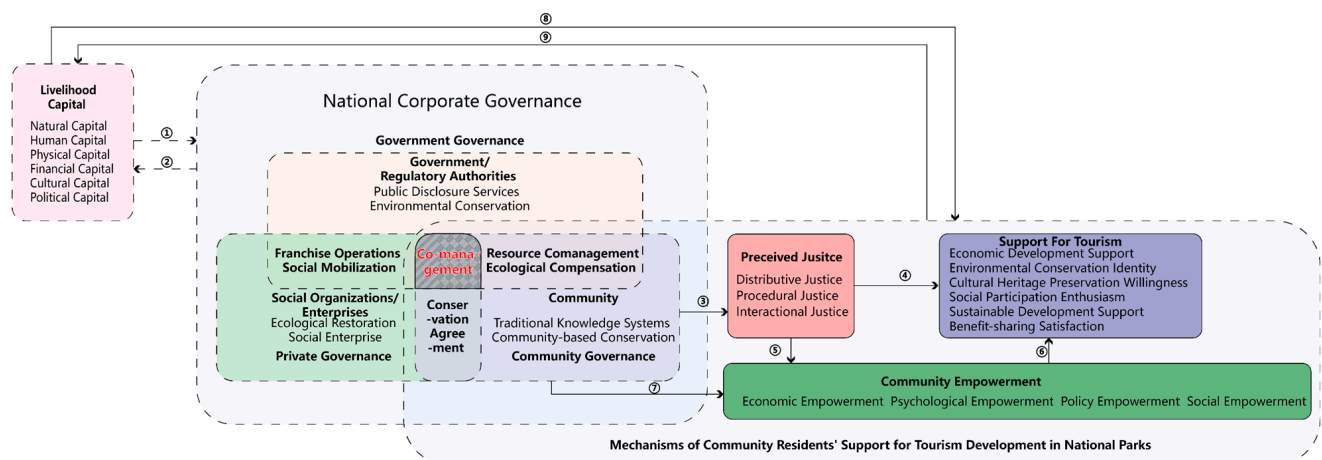


Figure 3. Theoretical Framework for the Formation Mechanism and Empowerment Path of National Park Community Tourism Support Intention. Note: The circled numbers (①–⑨) indicate the pathways and relationships in the theoretical framework: ① livelihood capital to community participation; ② collaborative governance pattern; ③ governance to perceived justice; ④ governance to community empowerment; ⑤ empowerment to tourism support; ⑥ dimensions of tourism support; ⑦ moderating effect of perceived justice; ⑧ direct effect of perceived justice on tourism support; ⑨ feedback effect of tourism support on empowerment.

This collaborative governance model directly affects stakeholders' perception of fairness (Figure 3③), specifically in three dimensions: distributive justice, procedural justice, and interactional justice. Perceived fairness then promotes the realization of community empowerment (Figure 3⑤), including four levels: economic empowerment, psychological empowerment, political empowerment, and social empowerment. Community empowerment plays a crucial mediating role in this study, transforming perceived fairness into actual willingness to support tourism development (Figure 3④). Community support is

reflected in multiple aspects such as support for economic development, recognition of ecological protection, willingness to inherit culture, enthusiasm for social participation, and satisfaction with sustainable development support and benefit sharing (Figure 3⑥). The model also considers the feedback effect of community empowerment on national park governance (Figure 3⑦), forming a dynamic and cyclical theoretical framework that reveals the formation mechanism and realization path of stakeholders' willingness to support tourism in the context of national parks.

7. Conclusions

This study addressed three research questions regarding community support for national park tourism. For RQ1, all three justice dimensions significantly influence the four empowerment dimensions, with distributive justice showing the strongest effect. For RQ2, community empowerment fully mediates the justice–support relationship, confirming the S-O-R framework. For RQ3, ANN analysis revealed non-linear dynamics, with empowerment as the most critical predictor (100% importance), followed by distributive justice (93.4%).

8. Limitations and Future Research

This study has several limitations. First, the cross-sectional design limits causal inference; longitudinal studies could track empowerment and support dynamics over time. Second, the single case study (Wuyishan National Park) may limit generalizability; comparative studies across different national parks and cultural contexts are needed. Third, demographic factors were not included as controls, which may influence the relationships examined. Future research should investigate the moderating effects of age, education, and income on justice–empowerment–support linkages. Additionally, qualitative approaches could provide deeper insights into community empowerment processes and the contextual factors shaping justice perceptions in national park settings.

This cross-sectional design limits causal inference; longitudinal studies could track empowerment dynamics. The single-case focus limits generalizability; comparative studies across national parks are needed. Future research should examine local entrepreneurs as key stakeholders, investigating how business empowerment influences tourism support. Additionally, experimental designs could test specific interventions enhancing procedural justice and community empowerment.

Demographic variables (age, education, income) were not included as control variables to maintain model parsimony and focus on the theoretical relationships. However, these factors may influence justice perceptions and empowerment, warranting investigation in future research.

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Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Table A1. Sample Basic Information (Units: Count, %).

	Sample Size	Proportion (%)	Feature	Sample Size	Proportion (%)
Gender			Age		
Male	138	42.3	35 years old and below	56	17.1
Female	188	57.7	36–44 years old	47	14.4
Educational Level			45–54 years old	83	25.5
Primary school and below	138	42.3	55–64 years old	80	24.5
Junior high school	97	29.8	65 years old and above	60	18.4
High school or technical secondary school	46	14.1	Occupation		
Bachelor’s degree and above (including college)	45	13.8	Self-employed	166	50.9
Length of Residence			Public institution/Civil servant	22	6.7
11–20 years	17	5.2	Other	15	4.6
21–30 years	28	8.6	Average Monthly Income		
31 years and above	257	78.8	Below 1000 yuan	43	13.2
Below 5 years	17	5.2	1001–2000 yuan	92	28.2
6–10 years	7	2.1	2001–3000 yuan	57	17.5
Income Proportion from Tourism			3001–4000 yuan	60	18.4
Partially from tourism	188	57.7	4001–5000 yuan	19	5.8
Not related to tourism	49	15.0	5001–6000 yuan	20	6.1
Mainly from tourism	89	27.3	Above 6001 yuan	35	10.7

Table A2. List of measurement items. The questionnaire required approximately 15–20 min to complete.

Dimension	Variable	Item Code	Measurement Item
Social Justice	Distributive Justice	DJ1	My tourism outcomes reflect my contribution to the village
		DJ2	Villagers with high tourism participation have high tourism outcomes
		DJ3	Considering the effort I put into my work, the tourism results I get are reasonable
		DJ4	Compared to other villagers in the village, the tourism outcomes I get are reasonable
	Procedural Justice	PJ1	My complaints in tourism development have been handled very promptly
		PJ2	In tourism development, the procedures for handling my complaints are simple
		PJ3	The organization's staff or employees make efforts to adjust the procedures for handling my complaints according to my needs in tourism development
		PJ4	My complaints can be resolved quickly
	Interactional Justice	IJ1	The organization's staff or employees are very polite to me in tourism development
		IJ2	The communication between the organization's staff or employees and me is appropriate in tourism development
		IJ3	The organization's staff or employees put appropriate effort into solving my problems in tourism development
		IJ4	The organization's staff or employees show concern for tourism development
Community Tourism Empowerment	Economic Empowerment	EET1	Local tourism development has improved my income level
		EET2	Local tourism development has increased my household income
		EET3	Part of my income or household income is related to local tourism development
		EET4	Local tourism development has created and provided me with more employment opportunities
	Policy Empowerment	POET1	I have opportunities and channels to provide opinions and ideas on local tourism development
		POET2	When formulating local tourism development plans, I can participate and express my opinions and ideas
		POET3	I can participate in local tourism planning and express my opinions and ideas
		POET4	I can participate in local tourism decision-making (attending meetings, voting, expressing opinions) and have certain decision-making power in local tourism development
	Social Empowerment	SET1	Local tourism development has made my relationship with other people in the village/community closer
		SET2	Local tourism development has made me more integrated into the village/community collective
		SET3	Local tourism development has provided me with more opportunities to participate in village/community collective affairs
		SET4	Local tourism development has strengthened my sense of collectivism
	Psychological Empowerment	PET1	I am proud to be a community villager where the national park is located
		PET2	The high visibility of the national park has improved my local confidence
		PET3	Because many tourists come here for tourism, I feel that the natural resources, environment, and historical culture of the national park are of high quality and value, which is recognition of the local area
		PET4	Because many tourists come here for tourism, I feel that the natural resources, environment, and historical culture of the national park are of high quality and value, which is recognition of the local area
Support For Tourism	Tourism Support Level	S1	I look forward to and welcome the arrival of tourists, and am willing to receive tourists warmly and friendly
		S2	I am willing to contribute to the sustainable development of local tourism
		S3	I am willing to participate in local tourism business activities (providing accommodation and catering services, etc.)
		S4	I am willing to support the management bureau/government/enterprises to increase investment in tourism development and build better tourism attractions
		S5	I am willing to participate in the benefit distribution of tourism development and share the results of local tourism development with stakeholders (other villagers, enterprises, managers)
		S6	My neighbors are willing to support local tourism development

Table A3. Common method bias test.

Construct	Item	Substantive Outer Loading	Substantive Variance (Ra ²)	Method Outer Loading (Rb)	Method Variance	FCT Value
Distributive justice (DJ)	1	0.714	0.510	0.077	0.006	***
	2	0.745	0.556	0.006	0.000	
	3	0.804	0.646	−0.138	0.019	
	4	0.893	0.798	−0.124	0.015	
Procedural Justice (PJ)	1	0.870	0.757	−0.044	0.002	***
	2	0.841	0.707	−0.013	0.000	
	3	0.708	0.501	0.021	0.000	
	4	0.703	0.495	−0.062	0.004	
Interactional justice (IJ)	1	0.700	0.490	−0.131	0.017	***
	2	0.744	0.554	−0.122	0.015	
	3	0.778	0.606	0.135	0.018	
	4	0.731	0.535	−0.011	0.000	
Community Tourism Economic Empowerment (ECET)	1	0.725	0.525	0.094	0.009	***
	2	0.847	0.717	−0.062	0.004	
	3	0.797	0.635	0.056	0.003	
	4	0.803	0.645	−0.026	0.001	
Community Tourism Social Empowerment (SOET)	1	0.686	0.470	−0.121	0.015	***
	2	0.653	0.426	−0.057	0.003	
	3	0.736	0.541	−0.121	0.015	
	4	0.842	0.709	0.058	0.003	
Community Tourism Political Empowerment (POET)	1	0.673	0.453	0.039	0.001	***
	2	0.749	0.560	−0.075	0.006	
	3	0.857	0.735	−0.018	0.000	
	4	0.730	0.532	−0.121	0.015	
Community Tourism Psychological Empowerment (PSET)	1	0.736	0.542	0.102	0.010	***
	2	0.647	0.419	0.115	0.013	
	3	0.890	0.792	−0.124	0.015	
	4	0.659	0.434	0.090	0.008	
Support for tourism (SFT)	1	0.804	0.647	−0.041	0.002	***
	2	0.753	0.566	−0.049	0.002	
	3	0.893	0.797	−0.011	0.000	
	4	0.760	0.578	0.007	0.000	
	5	0.811	0.658	−0.037	0.001	
	6	0.745	0.555	−0.145	0.021	

Note: *** $p < 0.001$, FCT values represent the statistical significance test comparing substantive variance to method variance.

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