

Analysis of the Impact of Rural Human Environment Improvement On Rural Economic Development: Based On the Mediating Effect of Rural Tourism

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Abstract: Improving the rural human environment is essential in the rural revitalization strategy and is significant to rural economic development. The improvement of infrastructure can lead to the development of the local tourism industry, and tourism can also promote the economic level. Therefore, this paper analyzes the influence mechanism of the rural human environment and rural tourism on rural economic development through field research and a questionnaire survey of 205 villagers in Luquan County, Yunnan Province, using SPSS software. The results show that (1) The improvement of the rural human environment is positively related to the development of the rural economy. (2) Rural tourism is positively related to the development of the rural economy. (3) Rural tourism plays an intermediary role between the improvement of rural human environments and the level of rural economic development.

Keywords: Rural human environment, Rural economic development, Rural tourism.

1. Introduction

The beautiful and livable living environment is the material condition for rural revitalization. It has an essential impact on the construction of rural civilization, effective governance, economic development and other aspects. For a long time, the state has attached great importance to improving rural human settlements and has formulated a series of guidelines, policies and plans. In the five-year action plan issued by the state in 2021, the new goal of significantly improving the rural human environment and making new progress in the construction of ecologically livable and beautiful villages by 2025 was put forward.

Rural human environment improvement is a critical development strategy in China, an important carrier for constructing a "beautiful countryside", and an essential means to promote the high-quality development of the rural economy. Second, the current development of rural tourism has injected a strong impetus for rural economic growth. In contrast, rural human environment improvement has laid the foundation for developing rural tourism (Chen, Jianping & Junjie, 2020). In conclusion, rural human environment, rural tourism and economic development complement each other. However, when promoting rural construction, Yunnan Province still has many problems with the rural human environment, restricting economic development. At the same time, the low economic level affects the improvement of the environment. This status quo eventually makes it more challenging to retain talents in rural areas, to improve the living standard and quality of life of farmers, and to achieve high-quality, sustainable development in rural areas.

Yunnan Province, as a critical national support area in the rural revitalization strategy, has deeper poverty and all the differences in resources and environment compared with other regions and faces new development opportunities under the rural revitalization strategy. Meanwhile, Yunnan Province has rich tourism resources, and many counties are important Netflix hit spots, which are popular with tourists from all

over the world. Therefore, it is typical to study the role of local rural human environment improvement in promoting economic development. According to the data of the Yunnan Statistical Yearbook 2011-2020, the income of rural residents in Yunnan Province has continued to proliferate in recent years. However, overall it is relatively backward compared to the income of urban residents, and accelerating the level of rural economic development has become a significant task in modernization. Many scholars have also continued to increase their research on rural human settlements and environmental remediation. For example, Bohua et al. (2015), Jingjing (2019), Zhang (2020) and other scholars have conducted extensive and in-depth research on the relationship between rural human settlements and economic development in different regions. The research aims to construct panel data for empirical analysis through the evaluation index system. Combining the existing literature reveals that, on the one hand, the existing studies focus on analysing different cities. At the same time, there needs to be more research in rural areas. On the other hand, the situation in rural areas is more complicated, and the existing studies need to include the relationship between rural human settlement improvement, rural tourism and economic level through face-to-face interviews with villagers on a village-by-village basis. Therefore, it is crucial to understand the real needs of villagers and promote the rural economy to a higher level by building a better rural area and providing a more beautiful and livable living environment.

To sum up, this study selects County A of Kunming City, Yunnan Province, as the research area of this paper and obtains data through field research visits to empirically analyze the influence mechanism of rural human settlement and rural tourism on the improvement of rural economic development. Based on the empirical results, it is reasonable to speculate on the main improvement points of the rural human settlement improvement in the less economically developed rural areas of Yunnan Province in the future and provide a scientific basis for the construction of the less economically developed rural areas of Yunnan Province.

2. Theoretical Analysis and Research Hypothesis

The construction of rural human settlement environment has received widespread attention from all walks of life, and regions have stepped up efforts to promote waste classification and treatment, sanitary toilet renovation, village appearance improvement, and domestic sewage treatment, and the rural human settlement has been effectively improved in some areas (Gu & Liu, 2018). However, comprehensive management projects are mainly concentrated in the better economic areas, and there are many less economically developed areas where the progress of rural human settlement improvement work is slow. Studies have shown that some regions are affected by various factors such as geographical location, regional culture, and ideology. There are many weak links in environmental management, such as little village planning (Zeng, 2021), insufficient human resources and technical support (Wang & Hu, 2021), unbalanced supply and demand structures for infrastructure and public services (Ma & Liu, 2020), and The motivation of villagers to improve the village is insufficient (Xiao et al., 2022). Rural human settlements and rural tourism are related to farmers' lives. Rural human settlements include living environment, infrastructure, public services and ecological environment. Perfect infrastructure helps to cultivate modern farmers and change the concept and mode of rural development. Excellent human settlements are the basis for sustainable social development; Rural tourism drives consumption and expands villagers' income channels. These factors have a significant impact on promoting rural economic development (Pan, Wang and Wei, 2020). Jie (2020) believed that improving rural human settlements would help promote the sustainable development of the rural economy. The reason is that if rural land cannot be effectively protected, infrastructure construction is lacking, garbage is everywhere in the village, domestic sewage is discharged at will, and other problems cannot be effectively treated, a large number of people will be lost in the countryside, leading to the phenomenon of hollow villages. Retaining talent to develop the countryside is more challenging, which will also significantly impact rural tourism and other industries and will ultimately directly affect the local economic development. Han (2021) pointed out that rural tourism has injected a strong impetus into rural economic development. As a tourism industry, rural tourism is a supplement to modern agriculture and a new point of rural economic development. The development of rural tourism

provides opportunities for the development of local education, culture and economic industry, drives the development of the local service industry, and helps to improve the level of economic construction in rural areas. Based on the above analysis, this paper proposes the following:

H1: Rural human settlement improvement plays a positive role in promoting rural economic development.

H2: Rural tourism plays a positive role in promoting rural economic development.

H3: The role of rural tourism in mediating between rural human settlement improvement and rural economic development level.

3. Data Sources and Variable Descriptions

3.1. Data source

The data in this paper were obtained based on the research conducted in County A, Kunming, Yunnan Province, from August 10, 2022, to August 16, 2022. The sample was selected by a combination of random sampling and stratified sampling. The steps were as follows: (1) 10 administrative villages were selected according to the level of local rural human settlement improvement, rural tourism and rural economic development; (2) 15-30 villagers from each administrative village were randomly selected according to the village roster for questionnaire interviews. The questionnaire was based on the Likert Scale (5 levels), and the main contents included four parts: villagers' basic personal information, rural human settlement improvement, rural tourism, and economic income level. The research finally obtained 205 valid questionnaires, including 135 males, 65.9%, and 70 females, accounting for 34.1%.

3.2. Study variables

The three variables involved in this paper, namely, rural human settlement environment improvement, rural tourism and rural economic development, are all adapted based on previous studies and combined with the content of this study. Among them, the improvement of rural human settlements is mainly divided into four levels: residential environment, infrastructure, public services and ecological environment, according to the existing research, with a total of six items; three items of rural tourism design; For the variable of rural economic development, this paper designs four items starting from personal income, family income and consumption.

Table 1. Descriptive statistical analysis

	1	2	3	4	5	6	7	8
Gender	1							
Age	.788**	1						
Education	.405**	.355**	1					
Occupation	-.550**	-.465**	-.338**	1				
Housing size	0.047	0.042	.552**	-0.077	1			
Rural human Settlement Improvement	.230**	.239**	.192**	-0.077	0.059	1		
Rural Tourism	0.056	0.071	0.081	0.036	0.024	.519**	1	
Economic Development	0.105	0.109	.158*	0.018	0.100	.484**	.679**	1
Mean	1.341	2.449	1.863	4.288	2.732	2.957	2.995	3.016
S.D.	0.475	1.186	0.881	1.879	1.053	0.892	0.979	0.877

Note: N = 205, * represent $p < 0.05$, ** represent $p < 0.01$ (Two-tailed testing)

4. Results

4.1. Descriptive statistical analysis

The means, standard deviations, and Pearson correlation coefficients of each variable are shown in Table I. There is a significant correlation between rural human settlement improvement, rural tourism and economic development. The above results are consistent with theoretical expectations and provide preliminary support for the hypotheses.

4.2. Hypothesis Testing

In this study, we constructed a multivariate linear model using the quantitative analysis software SPSS to explore the relationship between the variables of rural human settlement improvement, rural tourism and economic development.

(1) Direct effect test. The results of the analysis for rural human settlement and environment improvement on rural economic development are shown in Table 2. With the rural

economy as the dependent variable, model 1 is a model with only control variables, and model 2 adds rural human settlement improvement to model 1. The analysis results show that rural human settlement improvement positive effect rural economic development ($\beta=0.464$, $p<0.001$). Thus hypothesis H1 was verified.

(2) Indirect effect detection. For the test of mediating effect, this study analyzes the mediating effect of rural tourism according to the three-step method (Baron et al., 1986). Rural tourism is added to model 3 and has a significant positive effect on rural economic development ($\beta=0.524$, $p<0.001$). Thus hypothesis H2 is verified. Meanwhile, the effect of rural human settlement improvement on rural economic development remains significant ($\beta=0.160$, $p<0.01$), but the coefficient decreases from 0.464 to 0.160, indicating that rural tourism partially mediates the relationship between rural human settlement improvement and economic development. Thus hypothesis H3 was verified.

Table 2. Results of multilevel linear regression analysis

Variable	Model 1		Model 2		Model 3	
	β	p	β	p	β	p
Gender	0.129	0.568	0.033	0.870	0.069	0.675
Age	0.050	0.551	-0.002	0.975	0.001	0.982
Education	0.135	0.153	0.069	0.412	0.055	0.425
Occupation	0.063	0.108	0.042	0.235	0.025	0.389
Housing size	0.025	0.730	0.033	0.599	0.040	0.442
Rural human Settlement Improvement			0.464	0.000	0.160	0.009
Rural Tourism					0.524	0.000
R2	0.042		0.247		0.494	
F	1.726		10.819***		27.530***	

Note: N = 205, * represent $p<0.05$, ** represent $p<0.01$, *** represent $p<0.001$.

5. Conclusions and Suggestions

Based on the extensive literature, this paper selects County A in Kunming, Yunnan Province, as the research area to analyze the effect of rural human settlement improvement and rural tourism on rural economic development and to test whether rural tourism plays a mediating role. The experimental results show that all three hypotheses are tested. Next, this paper proposes countermeasures for the experiment's results in rural human settlement improvement and rural tourism.

In terms of the rural human settlement, we first need to increase the villagers' enthusiasm to participate and play the primary role of the masses. By stimulating the villagers' endogenous motivation and combining external government intervention, social supervision and vigorous propaganda, the villagers' awareness of participation in rural human settlement management is increased, and a clear collective concept of rural human settlement protection is formed. At the same time, the villagers' sense of identity and belonging to the villagers will be improved, reducing the villagers' "free-riding" behavior so they can actively participate in the rural human settlement improvement project. Secondly, constructing infrastructure to renovate rural human settlements is crucial to people's lives. In the future, it is still necessary to strengthen and improve infrastructure construction and take suitable management measures for the facilities and equipment that have invested much money to make them play their value. At the same time, rural human settlement

improvement should continue to innovate the governance model, establish and improve the governance system of government leadership, villagers' participation and social coordination, ensure the vitality of the countryside, improve the village rules and regulations, and actively implement grid-based management.

In rural tourism it is vital to improving the attractiveness of rural tourism by protecting the environment, as a beautiful environment and considerate service are more attractive to tourists. Therefore, the priority is to improve the rural human settlement by taking various measures. Secondly, more efforts are needed to protect and promote the local rural culture so that the uniqueness of the local culture can be entirely played to attract more tourists. Specifically, Yunnan province is multi-ethnic, and different ethnic groups have different cultural customs. Then, rural tourism can protect the local culture by compiling folk customs and handicraft skills. It can promote its culture in multiple ways, such as network media, and actively guide most tourists. At the same time, the marketing strategy of rural tourism should also be innovated, giving full play to the resources of agricultural products while actively developing various tour programs. On the one hand, combined with the different tourism resources of each rural area, tourism products should be developed according to local conditions. On the other hand, combined with local characteristics and general preference to develop special activities.

In a word, to improve the level of rural economic development, to make rural human settlement improvement

and rural tourism play a fundamental role. Not only do we need to continuously improve relevant laws and regulations, formulate reasonable planning policies, and adopt some rural human settlement improvement strategies according to local conditions. It should also use Internet resources to create rural tourism brands to realize the joint development of rural human settlement, rural tourism and rural economy.

Acknowledgment

This study was supported by the Graduate Innovation Foundation of Yunnan University of Finance and Economics (2022YUFEYC092).

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