
The Effect of Rural Tourism Development on the Migrant Farmers' Livelihood Income in Three Gorges Reservoir

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Abstract

The paper analyzes the effect of rural tourism development on the migrant farmers' livelihood strategies in Three Gorges Reservoir. The results show: Development of rural tourism has a certain promote role to raise farmers' living income in the Three Gorges reservoir area. Therefore, the local government should make use of the advantages of rural tourism resources in the region, to create a unique model of rural tourism, and provide financial support, technical and tax. Achieve sustainable livelihoods and development of rural tourism in Three Gorges Reservoir area farmers.

Keywords: immigrant farmers, livelihood income, Three Gorges Reservoir

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INTRODUCTION

As the establishment of the Three Gorges Project, a large number of farmers had to move from the original living environment to a relatively unfamiliar environment, resulting in these migrants to bear a greater risk of survival, they have experienced the process of livelihood and psychology from break to recovery. The livelihood risk of the immigrants has been paid more and more attention by the government and academia (Chen 2013, Marrit 2007). Whether the living standard and the economic income of the farmer can be restored and improved after the resettlement has become a key index to evaluate the resettlement effect of the reservoir (Hu et al. 2012, Liu and Lei 2012).

Tourism is often seen as one of the alternative means of sustainable development of rural economy (Ying and Zhou 2007). On the one hand, rural tourism development can promote the employment of local farmers, narrowing the gap between urban and rural areas and promote local economic development (Yin 2006). On the other hand, farmers in the process of participating in rural tourism there have been occupational differentiation, and then leads to Class

differentiation (Long 2012, Zuo and Wang 2011). However, there are more researches on the influencing factors of farmers' livelihood strategies (Ling 2011, Li et al. 2010), there are few studies on the impact of rural tourism development on the livelihood of migrant farmers. Therefore, this study analyzes the impact of rural tourism development on the livelihood income of migrant farmers, explain the rural tourism whether is a good way for the migrant farmers to get rich in the reservoir area and to promote the development of the new countryside, and to provide reference for the sustainable development of the migrants in the Three Gorges reservoir area.

DATA AND METHODS

Data Collection

We selected five survey areas in Three Gorges Reservoir, those are Fuling district, Fengdu district, Yunyang County, Wusahan County, Wuxi County. The first step, by random sampling, each county elected a town, then each town elected two administrative villages, a total of 10 administrative regions. The second step, survey farmers household in 10 villages, we interviewed 750 farming households, returned 735

Table 1. The meaning of the independent variables and assign

Variables	Mean and assign
Development factors	
Whether to participate in rural tourism development	Yes is 1; no is 0
livelihood capital	
Human capital	
Family labor ability	Sum all family members of the labor ability value. 0 to 6 years old children and lose labor ability members is 0; 7 to 15 years old by children and adolescents is 1; Part of the members of the labor ability is 2; 55 (female) or more than 60 years old (male) members of the health is 3; 16-54 (female) or 16 to 59 years old (male) health member is 5.
The degree of education	Sum all family members of degree education value. Illiteracy is 0; Primary school is 1; Junior high school for 2; High school or technical secondary school is 3; College for 4. Bachelor degree and above is 5.
The number of professional skills training	Sum all family members of professional skills training value. Zero time is 0; One time is 1; 2 times is 2; 3 times is 3; 4 times is 4; Five or more times is 5.
Natural capital	
Per capita arable land area and quality	Areas use the specific value of per capita arable land, Level of quality in accordance with the assignment. Poor is 1; more Poor is 2; General is 3; better is 4; Good is 5.
Per capita garden land area and quality	Areas use the specific value of per capita garden land, Level of quality in accordance with the assignment. Poor is 1; more Poor is 2; General is 3; better is 4; Good is 5.
Per capita woodland area and quality	Areas use the specific value of per capita woodland, Level of quality in accordance with the assignment. Poor is 1; more Poor is 2; General is 3; better is 4; Good is 5.
Financial capital	
Their cash income	Family annual income (yuan)
Whether can borrowing	If can be through a credit union or bank funds raised, relatives and friends, neighbors, the assignment is 1, can't raise money through these channels, the assignment of 0.
Social capital	
Whether there is insurance	Yes is 1; no is 0
Whether a public officer	Yes is 1; no is 0
Whether to get help	Yes is 1; no is 0
Physical capital	
Own physical capital	Family owned property measurement on the number of options for farmers have accounted for the proportion of all the options.
Energy	Crop straw is 1, liquefied petroleum gas/gas is 2, power is 3, biogas is 4. solar is 5.
Public infrastructure	Poor is 1; more Poor is 2; General is 3; better is 4; Good is 5.
Regional factors	
Distance to the town center	The following 1 km (including 1 km) assigned to 5,1-3 (including 3 km) km assigned to 4,3 - 5 (including 5 km) km assigned to 3,5-10 km (including 10 km) assigned to 2 , More than 10 km assigned to 1.
Whether it is near or in the scenic area	Whether the farmer's residence is close to or in the scenic area, Yes is 1; no is 0.

questionnaires, 720 valid questionnaires, the valid questionnaires about 96%.

In the survey of 720 households, the male head of household accounted for 70.28%, the female-headed household accounted for 29.72%; age of households headed, mainly focus in the 16 to 50 years old age groups and 50 years old (excluding 50 years old) age groups; highest educational level mainly in the junior high school stage; total household population is mainly concentrated in the 3-5 people and 5 above.

Study Methods

Through survey data analysis, migrant farmer's livelihood strategies are engaged in agricultural work, go out for work, local work, own business and other five categories in sample area. In this study, the iterative least squares method is used in the income equation, by adding inverse "IMR" in the measurement model, to resolve the lack of income data for farmers who are not involved in livelihood strategies .

$$Y_i = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \dots + \beta_nx_n + \theta IMR + u \tag{1}$$

In the Formula (1), Y_i is the income earned by the farmer in the Class i livelihood strategies; x_1, x_2, \dots, x_n are explain the variables, including rural tourism development, livelihood capital and regional factors; β_0 is the constant term, $\beta_1, \beta_2, \dots, \beta_n$ are explain the coefficient of the variable, θ is the coefficient of IMR ; u is random term. In the model, the meaning of variables and assign (**Table 1**).

RESULTS AND ANALYSIS

The model estimates can be seen (**Table 2**): First, although the probability of migrant farmers participate in rural tourism development is significantly lower than that of migrant farmers who are not involved. However, rural tourism has a significant promote role to the engaged in agricultural work income of migrant farmers. This aspect benefited from the development of

Table 2. The effect of rural tourism development on the households' livelihood income

	engaged in agricultural work income	go out for work income	local work income	own business income
Whether to participate in rural tourism development	0.21**	-0.41	0.25***	0.38***
Family labor ability	-0.31	0.13	0.26	0.11
The degree of education	0.05**	-0.19	0.16	0.21*
The number of professional skills training	0.16*	0.22	0.35	0.19**
Per capita arable land area and quality	0.11**	0.22	-0.15	-0.06
Per capita garden land area and quality	0.17	0.25	0.12	-0.15
Per capita woodland area and quality	0.09	0.13	-0.34	-0.21*
Their cash income	0.36	0.15*	0.49	0.26***
Whether can borrowing	0.07*	0.18	0.16	0.05***
Whether there is insurance	0.00	0.01*	0.00	0.01**
Whether a public officer	0.01	0.00	0.00	0.06*
Whether to get help	-0.25	-0.16	-0.35	-0.32*
Own physical capital	0.32	0.07	0.33	0.15*
Energy	-0.36	-0.08**	0.22*	0.16**
Public infrastructure	0.43	0.21	0.11	0.27*
Distance to the town center	-0.14*	0.23	0.05	0.09**
Whether it is near or in the scenic area	0.34	-0.54	0.13*	0.23**
<i>IMR</i>	-0.45	0.52	0.31	0.37
Chi square statistics	38.09**	117.03	45.87***	49.52***

Note: ***, ** and * respectively of indicated Significant at 1%, 5% and 10%

rural tourism, transportation, infrastructure, information and other public resources to improve the availability of farmers, greatly reduce the risk and cost of migrant farmers; On the other hand, agricultural and sideline products as part of tourism products, migrant farmers have been more supply and demand information and better technical guidance, not only can be sold as a native product to tourists, but also for the restaurant to provide raw materials, improve the farmers' income of farmers. Second, rural tourism development has no effect on migrant farmers' go out for work income. Although the rural tourism development improve the infrastructure and increased local job opportunities, reducing the probability of migrant farmers involved in the go out for work, but the income of farmers has not been significantly reduced in such activities. So local rural tourism development has little effect on migrant farmers' go out for work income. Thirdly, the development of rural tourism has a significant effect on the local work and own business income. On the one hand, through the development of local rural tourism, providing more local job opportunities while increasing revenue. On the other hand, with the strong support of the local government, whether it is policy or capital, have ushered in the great success of entrepreneurship, its own operating income has a significant role in promoting.

CONCLUSION

The impact of rural tourism development on the livelihoods of migrant farmers has different results in different livelihood activities.

(1) The probability of migrant farmers participate in rural tourism development is significantly lower than that of migrant farmers who are not involved. However, rural tourism has a significant promote role to the engaged in agricultural work income of migrant farmers.

(2) Rural tourism development has no effect on migrant farmers' go out for work income.

(3) The development of rural tourism has a significant effect on the local work and own business income.

Through the above research results can be seen: the development of rural tourism has a certain promote role to farmers' living income in the Three Gorges reservoir area. Therefore, the local government should make use of the advantages of rural tourism resources in the region, to create a unique model of rural tourism, and provide financial support, technical and tax. Achieve sustainable livelihoods and development of rural tourism in Three Gorges Reservoir area farmers.

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