Article

Rural Tourism: Does It Matter for Sustainable Farmers’ Income?

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Abstract: With the continuous promotion of China’s new rural construction, rural tourism is considered to be an important driving force to promote the sustainable development of rural economy. Sustainable farmers’ income is a major part of the sustainable development of rural economy. Therefore, this paper attempts to explore the effect of rural tourism on sustainable farmers’ income. Using China’s provincial panel data over the period of 2003 to 2020 and employing the mediation effect model to perform empirical analysis, four results are obtained: (1) rural tourism positively and significantly affects sustainable farmers’ income. However, among five kinds of farmers’ income, the coefficients in magnitude are different. (2) A mediation effect of rural ecological environment on the relationship between rural tourism and sustainable farmers’ income exists. (3) A mediation effect of urbanization on the relationship between rural tourism and sustainable farmers’ income also exists. (4) On the whole, the mediation effect of rural ecological environment on the relationship between rural tourism and sustainable farmers’ income is less than that of the mediation effect of urbanization. Based on the evidence this paper provides, corresponding suggestions are raised to promote sustainable farmers’ income.

Keywords: rural tourism; sustainable farmers’ income; mediation effect model; rural ecological environment; urbanization

1. Introduction

The World Tourism Organization understands rural tourism as a type of tourism activity in which the visitor’s experience is related to a wide range of products generally linked to nature-based activities, agriculture, rural lifestyle or culture, angling, and sightseeing. It takes place in non-urban (rural) areas with the following characteristics such as low population density, landscape and land use dominated by agriculture and forestry, and traditional social structure and lifestyle. In fact, there is no completely unified definition of rural tourism in academic circles. Gilbert and Tung [1] believe that rural tourism is a form of tourism in which farmers provide tourists with accommodation and other conditions to engage in various leisure activities in typical rural environments such as farms and pastures. Bramwell and Lane [2] believe that rural tourism is not only a tourism activity based on agriculture, but also a multi-level tourism activity. In addition to holiday tourism based on agriculture, it also includes natural tourism, ecotourism, activities such as walking, mountaineering, and horse riding on holidays, exploration, sports and health tourism, hunting and fishing, and educational tourism, cultural and traditional tourism, as well as folk tourism activities in some regions. Milman [3], Milman et al. [4], and Reichel et al. [5] believe that rural tourism is tourism located in rural areas. It has the characteristics of rural areas, such as small-scale tourism enterprises, open regions, and sustainable development. With the sustainable development of rural tourism, the time of rural tourism is not limited to holidays. Rural tourists can make full use of the beautiful landscape, natural environment, architecture, culture, and other resources in rural areas. The contribution of rural tourism to the rural economy is not only to increase the local
financial revenue, but also to create the local employment opportunities and promote the sustainability of farmers’ income.

Rural tourism is a new tourism model that appeared in rural areas in the 1980s, especially after the 1990s. China’s rural tourism generally takes the unique rural folk culture as the soul and farmers as the main body. The target market is urban residents. At present, the basic types of rural tourism in China generally include the following categories. The first is sightseeing rural tourism with the theme of green landscape and pastoral scenery. The second is rural tourism focusing on farm village or farm tourism, including leisure farms, sightseeing orchards, tea gardens, gardens, leisure fishing grounds, agricultural education parks, agricultural science, and general demonstration parks, reflecting the theme of leisure, entertainment, and increasing insight. The third is rural tourism with the theme of rural folk customs, national customs, traditional culture, national culture, and local culture. The fourth is recreational rural tourism with the theme of fitness, convalescence, and fitness entertainment. In recent years, due to the high attention of the China’s government towards rural construction and farmers’ welfare and the diversification of rural tourism in China, more and more people are willing to go rural areas for tourism instead of artificial urban landscapes. Therefore, China’s rural tourism has developed quickly. Specifically, in 2011, rural tourism has brought an operating income of CNY 86 billion. At the same time, it has created nearly 2 million urban and rural jobs, including 1.59 million farmers. As a whole, it increases the farmers’ income by CNY 25.7 billion and the sales income of agricultural products by CNY 35.2 billion. Surprisingly, by the end of 2012, 90,000 villages in China have carried out the leisure agriculture and rural tourism activities, and there are 1.8 million business units of leisure agriculture and rural tourism, including more than 1.5 million farmhouses and more than 33,000 parks above designated size. They receive nearly 800 million tourists a year, and their annual operating income exceeds CNY 240 billion. According to the data of the National Tourism Administration, in 2014, it is reported that the number of rural tourists accounted for 1/3 of the total number of tourists in China. Subsequently, the Chinese government issued a series of policies for the sustainable development of rural tourism. In 2015, Central Document No. 1 (it refers to the first document issued by the Central Committee of the Communist Party of China every year. On 1 October 1949, the Central People’s Government of the people’s Republic of China began to issue document No. 1. Now it has become a proper term for the Central Committee of the Communist Party of China and the State Council to pay attention to rural issues.) suggests that the local government should actively develop various functions of agriculture and excavate the value of rural ecological leisure, tourism, and cultural education. In addition, in 2016, Central Document No. 1 also emphasizes that local governments should continue to develop the leisure agriculture and rural tourism. With the support of these rural tourism policies, in 2019, the total number of rural tourists in China is 3.09 billion, and the total income of rural tourism is CNY 1.81 trillion. In the second quarter of 2020, rural tourism increased by 148.8% month on month.

Due to the rapid and sustainable development of rural tourism, it has had a great impact on China’s rural economy. As is known to all, sustainable farmers’ income is a very important part of the rural economy [6–8]. Therefore, because of this background, this paper aims to examine the effect of rural tourism on sustainable farmers’ income. Using the provincial panel data over the period 2003–2020 and employing the mediation effect model to perform empirical analysis, the findings suggest that rural tourism positively and significantly affects the sustainable farmers’ income. However, the coefficients in magnitude are different among five kinds of farmers’ income. Meanwhile, the findings also suggest that a mediation effect of rural ecological environment and urbanization on the relationship between rural tourism and sustainable farmers’ income exists. Generally speaking, the mediation effect of rural ecological environment on the relationship between rural tourism and sustainable farmers’ income is less than that of the mediation effect of urbanization.
The contributions of this paper to the current literature are threefold. First, five kinds of farmers’ income indexes (farmers’ aggregate income, farmers’ wage income, farmers’ family business income, farmers’ family business income, farmers’ property income, and farmers’ transfer income) are used to measure the sustainable farmers’ income. This treatment can fully reflect how rural tourism affects the farmers’ income when compared with previous studies which only use one farmers’ income index [9-11]. Second, two kinds of rural tourism indexes (total rural tourism revenue and number of rural tourists) are used to measure rural tourism. The total rural tourism revenue is used to explore the effect of rural tourism on sustainable farmers’ income, and the number of rural tourists is used to conduct the robustness test. This treatment can make our results more reliable. Third, we simultaneously analyze the direct and indirect effect of rural tourism on sustainable farmers’ income when compared with previous studies which only focus on the direct effect [12,13].

To this end, the rest of this paper is formed as follows: Section 2 analyzes the relevant literature and develops three hypotheses; Section 3 explains variables and models; Section 4 shows the obtained results; Section 5 concludes this paper with suggestions and limitations.

2. Literature Review and Hypothesis Development

In this section, the empirical studies between rural tourism and farmers’ income are analyzed. Sample data and country selection have been used in this area of study. The findings of previous studies will help to give better insights on the potential effect of rural tourism on sustainable farmers’ income. Meanwhile, based on the influencing mechanism analysis, three hypotheses will be developed.

2.1. Relationship between Rural Tourism and Farmers’ Income

Sustainable rural tourism can not only drive agricultural development, but also boost the development of the rural collective economy, increase farmers’ employment opportunities, update the level of agricultural production technology, promote the marketing of agricultural products and other local products, and improve rural production and living conditions, so as to effectively broaden the channels for farmers to increase their incomes. From the perspective of that rural tourism can improve the rural livelihoods, Chen et al. [14], Anup and Parajuli [15], and Mbaiwa and Shoniza [16] found that rural tourism participation can help farmers increase their income and substantially enhance their livelihood. With a case of the Nevşehir province of Turkey, Tanrıvermis and Sanlı [17] found that rural tourism positively affects the rural household income because of farmers’ employment opportunities that are provided. Taking Chengdu as an example, Qi-zhia and Xiang [18] conducted an empirical study by using the correspondence analysis method. They found that in rural tourism development, the income obtained from working has a significant impact on farmers’ income, while the income obtained from providing agricultural products for farmhouse entertainment has a limited impact on farmers’ income. Li-feng [19] conducted field research on Xijiang Miao village in Leishan County and found that rural tourism development is consistent with the growth of farmers’ income as a whole. Zhao and Hu [20] studied the relationship between rural tourism development and “three rural” issues (it refers to agriculture, rural areas, and farmers). They put forward some countermeasures such as government guidance, scientific planning, shaping brand, excavating connotation, strengthening participation, training talents, and enhancing environmental protection. This can promote rural tourism development and effectively solve the “three rural” issues.

At the same time, rural tourism development, as a main mode of rural industrial integration development, can promote the growth of farmers’ income by giving full play to the multifunctional values of agriculture, such as economy, culture, society, and ecology. Li et al. [21] empirically analyzed the impact of rural industrial integration on farmers’ income, and found that the integration of rural primary, secondary, and tertiary industries can significantly improve the farmers’ income, and the effect of increasing farmers’ income
is more than 50%. Lan et al. [22] empirically studied the income effect and regional heterogeneity of rural industrial integration development and found that rural industrial integration development has a significant role in promoting farmers’ income growth, which is mainly realized through the growth of family operating income and wage income, and there is significant regional heterogeneity in the income effect of rural industrial integration development.

Based on the analysis of previous studies, it can be initially judged that the positive effect of rural tourism on farmers’ income can be reached. In the next subsection, the influencing mechanism will be analyzed and corresponding hypotheses will be put forward.

2.2. Hypothesis Development

The increasing proportion of rural tourism in the rural industrial structure has effectively driven the development of rural commerce, transportation, construction, post and telecommunications and service industry, and promoted the rational allocation of production factors among rural industries, so as to promote the optimization and upgrading of the rural industrial structure. This can make the rural industrial structure change from agriculture to the coordinated development of agricultural, manufacturing, and tertiary industries. As the main body of rural tourism development, farmers can not only obtain a certain operating income through independently selecting tourism business activities (such as farmhouse entertainment, flower and fruit picking, fishing, etc.), but also obtain a certain wage income through corresponding jobs provided by collectives or enterprises, so as to effectively increase the household’s income [23,24]. To summarize, it can be seen that rural tourism development can increase the farmers’ income by extending the agricultural industrial chain and increasing non-agricultural employment, which has a direct impact on farmers’ income growth. In view of this, a hypothesis is put forward as follows:

Hypothesis 1 (H1). Rural tourism has a positive effect on sustainable farmers’ income.

Tourism development can bring great help to the regional economy. The most direct effect of rural tourism development is to increase the farmers’ income. When farmers earn more, they will improve their ideological and moral quality. At the same time, they will slowly start to pursue the quality of life. Due to the accumulation of knowledge, farmers’ awareness of sustainable economic development will be strengthened. As farmers’ awareness becomes stronger, they will increase more investments in ecological environmental protection [25]. Meanwhile, developing rural tourism is also one of the ways to increase fiscal revenue. Therefore, improving the ecological protection awareness of local governments, especially grass-roots rural governments, can drive the environmental protection construction of the whole region. At the same time, maintaining the harmonious development of rural tourism and ecological environment is beneficial to the implementation of ecological protection strategies of sustainable development of rural tourism [26]. Moreover, with different cases and approaches, Haibo et al. [27] and Godil et al. [28] also found that tourism affects the ecological environment. To this end, it can be concluded that the tourism has an effect on ecological environment. In addition, taking Jianghan Plain as an example, obtaining basic data through household survey, and using analytic hierarchy process to conduct empirical analysis, Yang [29] found that the rural ecological environment significantly affects the rural residents’ income. Subsequently, this finding is also supported by previous studies [30–34]. To this end, based on above analysis, a hypothesis is put forward as follows:

Hypothesis 2 (H2). There is a mediation effect of rural ecological environment on the relationship between rural tourism and sustainable farmers’ income.

Suthesheena [35] points out that in the area of Goa, India, tourism significantly expands urbanization. Moreover, Xiyong et al. [36] also found that as an emerging industry in rural areas, rural tourism has played a positive role in revitalizing the rural economy, solving
the problems of agriculture, rural areas, and farmers, and promoting the economic and social integration of urban and rural areas. From the perspective of social development, rural tourism development markedly drives the urbanization of rural areas and farmers. Meanwhile, this idea is consistent with the findings of previous studies [37–40]. As for the effect of urbanization on rural income, Shou-fu [41] used the vector error correction model to analyze the relationship between urbanization and various incomes of farmers in Sichuan. He found that there is a long-run equilibrium relationship between urbanization and various incomes of farmers in Sichuan. Specifically, urbanization has a significant impact on the per capita total income of rural residents, per capita cash income of rural households, and operating income of rural households in the long run, but it has no significant impact on the per capita net income and wage income of rural residents. Oppositely, the short-run impact of urbanization on farmers’ income in Sichuan is not significant, which indicates that the development of rural areas and urbanization in Sichuan is not coordinated. Furthermore, these results are supported by previous studies [42,43]. With the development of economy, the concept of tourism consumption is changing. The natural environment and ecological consumption culture in the rural areas continue to attract tourists [44,45]. Therefore, while ensuring the supply of agricultural products for urban residents, the countryside will gradually improve the rural industrial structure through rural tourism development, which can drive the development of rural non-agricultural industries, and promote the process of rural urbanization [46]. In the process of urbanization, the increase of the frequency of population flow in urban and rural areas has brought opportunities for farmers’ career transformation, and improved farmers’ marginal rate of return through the high production efficiency of non-agricultural industrial sectors, so as to promote the growth of farmers’ income. Therefore, a hypothesis is put forward as follows:

**Hypothesis 3 (H3).** There is a mediation effect of urbanization on the relationship between rural tourism and sustainable farmers’ income.

3. Variable Description and Model Specification

3.1. Sample Description

Due to the availability of data, we only select the panel data of 30 provinces in China from 2003 to 2005. For a more intuitive understanding of the sample used in this paper, these 30 provinces will be presented in Table 1.

| Province | Province | Province |
|----------|----------|----------|
| Beijing * | Zhejiang | Hainan |
| Tianjin * | Anhui | Chongqing * |
| Hebei | Fujian | Sichuan |
| Shanxi (山西) | Jiangxi | Guizhou |
| Inner Mongolia | Shandong | Yunnan |
| Liaoning | Henan | Shanxi (陕西) |
| Jilin | Hebei | Gansu |
| Heilongjiang | Hunan | Qinghai |
| Shanghai * | Guangdong | Ningxia |
| Jiangsu | Guangxi | Xinjiang |

*municipality directly under the central government.*

3.2. Variables Description

This subsection describes variables used in this paper. There are four kinds of variables including dependent variable, independent variable, mediator variable, and control variable. The following contents will analyze these variables in detail.

Osabuohien [47] defines the sustainable income as an increase in the individual’s aggregate income. This definition is supported by Opschoor [48], Young and Da Motta [49],...
Easman Jr. et al. [50], and Hediger [51]. Based on the classification of the China’s National Bureau of Statistics, the farmers’ income consists of four parts. They are wage income, family business income, property income, and transfer income. Therefore, in this paper, we use these five kinds of income indexes including aggregate income and four specific kinds of income to measure the sustainable farmers’ income. They are regarded as dependent variables. Following Polukhina et al. [52], Hu et al. [53], Puška et al. [54], and Zhang et al. [55], rural tourism is defined as the number of rural tourists and total rural tourism revenue. Therefore, in this paper, both of them are regarded as independent variables. As for the mediation variable, following Tosun et al. [56], Elshaer et al. [57], and Kaaristo [58], this paper uses the rural ecological environment and urbanization as mediation variables. Following Ishikawa and Fukushige [59], Um and Chung [60], Figueira et al. [61], and Novoa [62], three control variables are used in this paper. They are rural fiscal expenditure, rural infrastructure, and industrialization. To understand all these variables more concretely, the descriptions of all these variables are presented in Table 2.

### Table 2. Variable description.

| Variable                               | Abbreviation | Definition                                      | Source                        |
|----------------------------------------|--------------|------------------------------------------------|-------------------------------|
| Dependent variable: farmer’s sustainable income |              | Farmers’ aggregate income in log                 | NBOS; PSYB                   |
| Farmers’ aggregate income              | I1           | Farmers’ aggregate income                        |                              |
| Farmers’ wage income                   | I2           | Farmers’ wage income in log                       | NBOS; PSYB                   |
| Farmers’ family business income        | I3           | Farmers’ family business income in log           | NBOS; PSYB                   |
| Farmers’ property income               | I4           | Farmers’ property income in log                   | NBOS; PSYB                   |
| Farmers’ transfer income               | I5           | Farmers’ transfer income in log                   | NBOS; PSYB                   |
| Independent variable                   |              | Total rural tourism revenue in log                | RTBDR; RTS; iimedia          |
| Total rural tourism revenue            | tr1          | Total rural tourism revenue                       |                              |
| Number of rural tourists               | tr2          | Number of rural tourists in log                   | RTBDR; RTS; iimedia          |
| Mediator variable                      |              | Rural ecological environment in log               | NBOS; PSYB                   |
| Rural ecological environment           | ree          | Investment in rural ecological environment in log |                              |
| Urbanization                           | urb          | Ratio of urban population to total population     | NBOS; PSYB                   |
| Control variable                       |              | Rural fiscal expenditure in log                   | NBOS; PSYB                   |
| Rural fiscal expenditure               | efe          | Rural fiscal expenditure                          |                              |
| Industrialization                      | ind          | Ratio of manufacturing output to gross output    | NBOS; PSYB                   |
| Rural infrastructure                   | ri           | Hard road kilometers                             | NBOS; PSYB                   |

Note: NBOS stands for the National Bureau of Statistics; PSYB stands for the Province Statistics of Yearbook; RTBDR stands for rural tourism Big Data Report; RTS stands for rural tourism statistics; iimedia is a kind of data center.

3.3. Model Specification

In the latest two decades, it is well known that rural tourism has rapidly developed and become an important concept of tourism in China and it plays a special role in China’s rural socioeconomic regeneration [63]. From the perspective of income, Alola et al. [64] found that the effect of rural tourism on income is significant. Based on their results, this paper uses China as a sample to study the effect of rural tourism on sustainable Chinese farmers’ income over the period 2003–2020. The baseline regression model is shown as follows:

$$I_{i,t} = a_0 + a_1 r_{i,t} + \sum_{j=2}^{n} a_j c_{v_{i,t}} + \delta_i + \mu_t + \epsilon_{i,t}$$  (1)
where \( i \) stands for the province; \( t \) stands for the year; \( I \) stands for the sustainable farmers’ income; \( r_t \) stands for rural tourism; \( c_v \) stands for the control variable; \( \delta_i \) stands for the province fixed-effects; \( \mu_t \) stands for the year fixed-effects; \( \epsilon_{i,t} \) stands for the white noise; \( a_0 \) stands for the constant; \([a_1, a_j]\) stands for the coefficients to be estimated.

In addition, to test the indirect effect of rural tourism on sustainable farmers’ income through the mediation variables (rural ecological environment and urbanization), the design of mediation effect model in this paper follows Akinci and Aksoy [65], Tang [66], and Li [67]. Specifically, first of all, the mediation variable is treated as the explained variable and rural tourism is treated as the explanatory variable. The purpose of this step is to test the effect of rural tourism on mediation variable. Then, the sustainable farmers’ income is treated as the explained variable. the mediation variable is treated as the explanatory variable. The purpose of this step is to test the effect of mediation variable on sustainable farmers’ income. Following this idea, the mediation effect models are presented as follows:

The effect of rural tourism on mediation variable is presented:

\[
mv_{i,t} = b_0 + b_1 r_{i,t} + \sum_{j=2}^{n} b_j c_v_{i,t} + \delta_i + \mu_t + \epsilon_{i,t}
\] (2)

The effect of mediation variable on sustainable farmers’ income is presented:

\[
I_{i,t} = c_0 + c_1 r_{i,t} + c_2 mv_{i,t} + \sum_{j=3}^{n} c_j c_v_{i,t} + \delta_i + \mu_t + \epsilon_{i,t}
\] (3)

where \( mv_{i,t} \) stands for the mediation variable. If rural tourism affects the sustainable farmers’ income through the mediation variable, \( b_1 \) and \( c_1 \) should be significant in statistics and the sign of \( b_1 \cdot c_1 \) is consistent with that of \( a_1 \). Then, it can be concluded that the mediation variable presents the mediation effect in the effect of rural tourism on farmers’ sustainable income. The value of mediation effect is \( b_1 \cdot c_1 \). On the contrary, if the sign of \( b_1 \cdot c_1 \) is opposite with that of \( a_1 \), the mediation variable presents a dilution effect in the effect of rural tourism on farmers’ sustainable income. The value of the dilution effect is \( b_1 \cdot c_1 \). Stated differently, the indirect effect of mediation variable dilutes the real effect of rural tourism on farmers’ sustainable income to a certain extent.

4. Discussion

4.1. Basic Statistical Analysis

This subsection focuses on the basic characteristics of these variables used in this paper. They include values of maximum, minimum, mean, and standard error. The results are present in Table 3.

| Variable | I1  | I2  | I3  | I4  | I5  | tr1 | tr2 | ree | urb | efe | ind | ri |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Maximum  | 4.234 | 3.843 | 3.787 | 2.622 | 3.564 | 2.545 | 3.996 | 2.511 | 0.487 | 0.324 | 0.473 | 4.527 |
| Minimum  | 3.173 | 2.577 | 2.995 | 1.472 | 1.929 | 1.026 | 2.180 | 1.104 | 0.246 | 0.089 | 0.268 | 2.233 |
| Mean     | 3.732 | 3.535 | 3.137 | 2.533 | 2.108 | 1.231 | 2.743 | 1.720 | 0.298 | 0.165 | 0.339 | 2.548 |
| Standard error | 0.733 | 0.681 | 0.445 | 0.464 | 0.547 | 0.408 | 0.095 | 0.487 | 0.142 | 0.284 | 0.156 | 0.361 |
| Observation | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 |

As the results of Table 3 indicate, the mean of farmers’ aggregate income is 3.732 with a standard error equal to 0.733. The mean of farmers’ wage income is 3.535 with a standard error equal to 0.681. The mean of farmers’ family business income is 3.137 with a standard error equal to 0.445. The mean of farmers’ property income is 2.533 with a standard error
The mean of farmers’ transfer income is 2.108 with a standard error equal to 0.547. The mean of total rural tourism revenue is 1.231 with a standard error equal to 0.408. The mean of the number of rural tourists is 2.743 with a standard error equal to 0.095. The mean of investment in rural ecological environment is 2.511 with a standard error equal to 0.487. The mean of the ratio of urban population to total population is 0.298 with a standard error equal to 0.142. The mean of rural fiscal expenditure is 0.165 with a standard error equal to 0.284. The mean of the ratio of manufacturing output to gross output is 0.339 with a standard error equal to 0.156. The mean of hard road kilometers is 2.548 with a standard error equal to 0.361.

To be concluded, the differences of rural tourism and sustainable farmer’s income between maximum and minimum values are greater. Meanwhile, the values of standard error of them are great enough. Based on these variables’ provided characteristics, the effect of rural tourism on sustainable farmer’s income cannot be revealed. Therefore, the correlation test will be performed to make the effect of rural tourism on sustainable farmer’s income clear. The results are presented in Table 4.

Table 4. Results of correlation test.

| Variable | I1     | I2     | I3     | I4     | I5     | tr1 | tr2 |
|----------|--------|--------|--------|--------|--------|-----|-----|
| tr1      | 0.602  | 0.440  | 0.724  | 0.463  | 0.493  | 1.000 | 1.000 |
|          | (0.086) | (0.016) | (0.054) | (0.094) | (0.072) | (—-) | (—-) |
| tr2      | 0.644  | 0.455  | 0.696  | 0.480  | 0.462  | 1.000 | 1.000 |
|          | (0.091) | (0.035) | (0.027) | (0.017) | (0.066) | (—-) | (—-) |
| ree      | —-     | —-     | —-     | —-     | —-     | 0.372* | 0.273* |
|          | (—-) | (—-) | (—-) | (—-) | (—-) | (0.098) | (0.072) |
| urb      | —-     | —-     | —-     | —-     | —-     | 0.354* | 0.409* |
|          | (—-) | (—-) | (—-) | (—-) | (—-) | (0.091) | (0.086) |

Note: () stands for the p-value; * stands for 10% significant level; ** stands for 5% significant level; —- stands for null.

As the results of Table 4 indicate, the correlation between rural tourism and sustainable farmer’s income is positive. Namely, rural tourism and sustainable farmer’s income have the similar growth trend. Meanwhile, it can also be found that for the correlation between rural tourism and rural ecological environment, urbanization is positive. Moreover, to explore how rural tourism affects the sustainable farmer’s income, a further analysis will be performed in the next subsection.

4.2. Effect of Rural Tourism on Sustainable Income of China’s Farmers

This subsection arms to analyze the effect of rural tourism on sustainable farmers’ income in terms of two aspects including mediation effects of rural ecological environment and urbanization. The analysis in this subsection will be divided into two steps. One is that we only use rural tourism and sustainable farmers’ income to perform a regression. Another is that we simultaneously use rural tourism, control variables (rural fiscal expenditure, industrialization, and rural infrastructure), and sustainable farmers’ income to perform a regression. This treatment can fully reflect the changes of the coefficient of rural tourism. The result of mediation effect of rural ecological environment on the relationship between rural tourism and sustainable farmers’ income is presented in Table 5.
Table 5. Results of the effect of rural tourism on sustainable income of China’s farmers (mediation effect of rural ecological environment).

Panel A

| Variable | I1 | I2 | I3 | I4 | I5 | ree | I1 | I2 | I3 | I4 | I5 |
|----------|----|----|----|----|----|-----|----|----|----|----|----|
| rt1      | 0.612 ** | 0.686 ** | 0.607 ** | 0.459 ** | 0.504 ** | 0.186 ** | 0.382 ** | 0.351 ** | 0.407 ** | 0.331 ** | 0.232 ** |
|          | (6.166) | (2.032) | (3.445) | (5.022) | (5.067) | (6.404) | (6.165) | (1.817) | (3.568) | (5.253) | (5.416) |
| ree      | 0.944 ** | 0.041 *** | 0.054 ** | 0.036 ** | 0.047 ** | 0.186 ** | 0.322 * | 0.344 * | 0.415 ** | 0.420 * | 0.372 * |
|          | (3.695) | (5.593) | (4.211) | (6.230) | (4.393) | (2.023) | (1.825) | (1.603) | (1.596) | (1.882) | (1.852) |
| efe      | 0.021 ** | 0.322 * | 0.384 * | 0.415 ** | 0.420 * | 0.044 ** | 0.041 ** | 0.054 ** | 0.036 ** | 0.047 ** | 0.047 ** |
|          | (2.023) | (1.825) | (1.603) | (1.596) | (1.882) | (3.695) | (5.593) | (4.211) | (6.230) | (4.393) | (4.393) |
| ind      | −0.157 * | 0.863 * | 0.631 * | 0.676 | 0.661 | 0.645 | −0.236 * | 0.601 * | 0.748 * | 0.703 * | 0.769 |
|          | (−1.778) | (1.695) | (1.487) | (1.254) | (1.636) | (2.023) | (1.825) | (1.603) | (1.596) | (1.882) | (1.852) |
| ri       | −0.236 * | 0.601 * | 0.748 * | 0.703 * | 0.690 | 0.769 | −0.236 * | 0.601 * | 0.748 * | 0.703 * | 0.769 |
| c        | 2.285 ** | 2.392 * | 2.570 * | 2.464 * | 2.083 ** | 0.154 | 2.711 ** | 1.622 * | 1.761 | 2.130 * | 2.558 * |
|          | (2.157) | (1.845) | (1.784) | (1.603) | (2.097) | (1.928) | (2.189) | (1.651) | (1.596) | (1.852) | (1.852) |
| F-test   | 207.613 | 211.726 | 192.163 | 191.076 | 208.322 | 192.163 | 191.076 | 208.322 | 192.163 | 191.076 | 208.322 |
| R²       | 0.514 | 0.475 | 0.556 | 0.478 | 0.485 | 0.479 | 0.641 | 0.501 | 0.529 | 0.452 | 0.613 |
| Year     | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Province | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Obs      | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 |

Note: T-statistics shown in parentheses; * 10% significant level; ** 5% significant level; *** 1% significant level, √ included.

In Table 5, step one presents the results of the effect of rural tourism on sustainable farmers’ income without taking the control variables into consideration. The coefficient of rural tourism on farmers’ aggregate income is 0.612 and significant at 1%, on farmers’ wage income is 0.686 and significant at 5%, on farmers’ family business income is 0.607 and significant at 1%, on farmers’ property income is 0.459 and significant at 1%, on farmers’ transfer income is 0.407 and significant at 1%. Stated differently, rural tourism has a positive effect on sustainable farmers’ income. These findings are consistent with Dimitrovski et al. [68]. Meanwhile, these results also verify that Hypothesis 1 (H1) holds.

Step two presents the result of the effect of rural ecological environment on rural tourism. It can be found that the coefficient of rural ecological environment is 0.186 and significant at 1%. That is to say, improving the rural ecological environment can attract more people to participate in rural tourism. A possible explanation is that the high-quality rural ecological environment can provide a relaxing channel for today’s Chinese people who live in a fast-paced and stressful life. Meanwhile, the results in step two also suggest that the rural fiscal expenditure has a positive effect on rural tourism, and the industrialization and rural infrastructure have a negative effect on rural tourism. A possible explanation is that with the increase of rural fiscal expenditure, more investments can be allocated to the construction of rural ecological environment and rural tourism facilities. However, during highway construction, the construction activities cause nonpolluting damage to the rural natural environment. After the highway operation, the pollutants emitted by automobile exhaust will pollute the rural air. Moreover, the acceleration of urbanization will squeeze the rural living space and reduce the human capital investment.

Step three presents the results of the direct and indirect effect of rural tourism on sustainable farmers’ income. To be more intuitive, the results in step three are reported in Table 6.

Table 6. Results of the direct and indirect effect of rural tourism on sustainable farmers’ income (mediation effect of rural ecological environment).

| Sustainable Farmers’ Income |
|-----------------------------|
| Variable | I1 | I2 | I3 | I4 | I5 | ree | I1 | I2 | I3 | I4 | I5 |
|---------|----|----|----|----|----|-----|----|----|----|----|----|
| rt1     | 0.382 | 0.351 | 0.407 | 0.331 | 0.232 | 0.186 | 0.0082 | 0.0076 | 0.0100 | 0.0067 | 0.0087 |
|         | (1.817) | (1.817) | (1.817) | (1.817) | (1.817) | (1.817) | (1.817) | (1.817) | (1.817) | (1.817) | (1.817) |
| ree     | 0.044 | 0.041 | 0.054 | 0.036 | 0.047 | 0.044 | 0.041 | 0.054 | 0.036 | 0.047 | 0.047 |
As the results in Table 6 suggest, the coefficient of direct effect of rural tourism on farmers’ aggregate income is 0.382 and significant at 5%, on farmers’ wage income is 0.351 and significant at 10%, on farmers’ family business income is 0.407 and significant at 1%, on farmers’ property income is 0.331 and significant at 1%, on farmers’ transfer income is 0.232 and significant at 1%. This finding suggests that the rural ecological environment has a mediation effect on the impact of rural tourism on sustainable farmers’ income. Said concretely, the coefficient of indirect effect of rural tourism on farmers’ aggregate income is 0.0082 (0.186 × 0.044), on farmers’ wage income is 0.0076 (0.186 × 0.041), on farmers’ family business income is 0.0100 (0.186 × 0.054), on farmers’ property income is 0.0067 (0.186 × 0.036), on farmers’ transfer income is 0.0087 (0.186 × 0.047). These results are consistent with Cao et al. [69]. Meanwhile, Hypothesis 2 (H2) is verified.

In addition, Mahadevan et al. [37] and Sutheeshna [35] find that urbanization has an effect on rural tourism. Meanwhile, as the results in Table 5 suggest, rural tourism can affect the sustainable farmers’ income. Therefore, in the next context, the purpose is to explore the mediation effect of urbanization on the relationship between rural tourism and sustainable farmers’ income. The results are presented in Table 7.

Table 7. Results of the mediation effect of urbanization on the relationship between rural tourism and sustainable farmers’ income.

| Variable | I1 | I2 | Step One | I3 | I4 | I5 | Step Two | urb | I3 | I4 | I5 | Step Three | I3 | I4 | I5 |
|----------|----|----|----------|----|----|----|----------|-----|----|----|----|----------|----|----|----|
| rt1      | 0.612** | 0.686** | 0.607** | 0.459*** | 0.504** | 0.072** | 0.265** | 0.207 | 0.199 | 0.182** | 0.214** | 0.072** | 0.265** | 0.207 | 0.199 | 0.182** |
| urb      | 0.401* | 0.336** | 0.445** | 0.314* | 0.375** | 0.134 | 0.336** | 0.445** | 0.314 | 0.375 | 0.134 | 0.336 | 0.445 | 0.314 | 0.375 | 0.134 | 0.375 |
| efe      | 0.034 | 0.459** | 0.416 | 0.572 | 0.563*** | 0.339** | 0.034 | 0.459** | 0.416 | 0.572 | 0.563*** | 0.339** | 0.034 | 0.459** | 0.416 | 0.572 | 0.563*** | 0.339** |
| ind      | 0.097 | -0.741* | -0.292 | -0.484** | -0.703** | -0.866** | 0.097 | -0.741* | -0.292 | -0.484** | -0.703** | -0.866** | 0.097 | -0.741* | -0.292 | -0.484** | -0.703** | -0.866** |
| ri       | 0.429* | 0.157** | 0.112 | 0.344 | 0.356* | 0.179 | 0.429* | 0.157** | 0.112 | 0.344 | 0.356* | 0.179 | 0.429* | 0.157** | 0.112 | 0.344 | 0.356* | 0.179 |
| e        | 2.285** | 2.392* | 2.570* | 2.464* | 2.083** | 1.789 | 1.356 | 2.117 | 1.648* | 2.018 | 1.495* | 2.285** | 2.392* | 2.570* | 2.464* | 2.083** | 1.789 | 1.356 |
| F-test   | 207.613 | 211.726 | 192.163 | 191.076 | 208.322 | 39.389 | 50.126 | 47.867 | 52.055 | 67.752 | 57.961 | 207.613 | 211.726 | 192.163 | 191.076 | 208.322 | 39.389 | 50.126 |
| c        | 0.514 | 0.475 | 0.556 | 0.478 | 0.485 | 0.340 | 0.409 | 0.464 | 0.428 | 0.359 | 0.435 | 0.514 | 0.475 | 0.556 | 0.478 | 0.485 | 0.340 | 0.409 |
| Province | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Obs      | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 |

Note: T-statistics shown in parentheses; * 10% significant level; ** 5% significant level; *** 1% significant level; √ included.

Table 7 shows the results of the mediation effect of urbanization on the relationship between rural tourism and sustainable farmers’ income via three kinds of step analysis. The result in step one is the same as that in Table 5. In this part, we only focus on the analyses in step two and step three.

In step two, the result suggests that rural tourism has a positive and significant effect on urbanization. In other words, the rapid development of rural tourism is an important channel to accelerate urbanization. Moreover, the coefficients of urbanization are statistically significant in step three. This means that a mediation effect of urbanization on the relationship between rural tourism and sustainable farmers’ income exists. Furthermore, the results in Table 6 also suggest that even through the rural fiscal expenditure and industrialization have effects on urbanization, they do not get through the significance tests. However, the rural infrastructure still significantly affects urbanization. Previous studies also support this achievement [70–72].

In step three, more attention will be paid to analyze the direct and indirect effect of rural tourism on sustainable farmers’ income. To be more concrete, the results in step three are reported in Table 8.
Table 8. Results of the direct and indirect effect of rural tourism on sustainable farmers’ income (mediation effect of urbanization).

| Variable | I1 | I2 | I3 | I4 | I5 | urb | Direct Effect | Indirect Effect |
|----------|----|----|----|----|----|-----|--------------|----------------|
| rt1      | 0.265 | 0.287 | 0.199 | 0.182 | 0.214 | 0.072 | 0.0468 | 0.0207 | 0.0143 | 0.0131 | 0.0154 |
| urb      | 0.401 | 0.336 | 0.445 | 0.314 | 0.378 | 0.072× | 0.265 | 0.287× | 0.199 | 0.182 | 0.214 |

Table 8 presents the results of direct and indirect effect of rural tourism on sustainable farmers’ income. As for the direct effect, the coefficients of rural tourism are 0.256 (farmers’ aggregate income), 0.287 (farmers’ wage income), 0.199 (farmers’ family business income), 0.182 (farmers’ property income), and 0.214 (farmers’ transfer income). Fortunately, these coefficients are statistically significant. Simultaneously, these results also imply that urbanization has a mediation effect on the impact of rural tourism on sustainable farmers’ income, namely, the indirect effect. As for it, the coefficient of indirect effect of rural tourism on farmers’ aggregate income is 0.0468 (0.072×0.265), on farmers’ wage income is 0.0207 (0.072×0.287), on farmers’ family business income is 0.0143 (0.072×0.199), on farmers’ property income is 0.0131 (0.072×0.182), on farmers’ transfer income is 0.0154 (0.072×0.214). Meanwhile, this result verifies that Hypothesis 3 (H3) does hold.

To summarize, four findings are achieved in this paper. First, rural tourism has a positive effect on sustainable farmers’ income (it is represented by five kinds of farmers’ income), but the coefficients in magnitude are different. Second, the mediation effect of rural ecological environment on the relationship between rural tourism and sustainable farmers’ income exists. Third, the mediation effect of urbanization on the relationship between rural tourism and sustainable farmers’ income also exists. Fourth, in general, the mediation effect of rural ecological environment on the relationship between rural tourism and sustainable farmers’ income is less than that of the mediation effect of urbanization.

4.3. Robustness Test

To reconfirm the results’ reliability and robustness, another independent variable is used to perform empirical analysis again [73–75]. In this paper, the total rural tourism revenue is replaced with the number of rural tourists. Then, we reanalyze the effect of rural tourism on sustainable farmers’ income. The results are presented in Table 9.

As the results of Table 9 suggest, it can be found that rural tourism, which is represented by the number of rural tourists, has a positive effect on sustainable farmers’ income. Meanwhile, the mediation effects of rural ecological environment and urbanization on the relationship between rural tourism and sustainable farmers’ income exist. The only difference between the results in Tables 5–9 is that the magnitude and significant level of the coefficients have changed and the sign of coefficients keeps constant. As a result, it can be confirmed that the results we obtained in Tables 5–8 are reliable and robust.
Table 9. Results of robustness test (number of rural tourists).

| Variable | I1 | I2 | I3 | I4 | I5 | Step Two | I1 | I2 | I3 | I4 | I5 | Step Three |
|----------|----|----|----|----|----|----------|----|----|----|----|----|------------|
| rt2      | 0.856 ** | 0.931 ** | 0.767 * | 0.890 * | 0.756 * | 0.224 ** | 0.462 ** | 0.487 ** | 0.524 | 0.441 | 0.397 * |
| (2.118)  | (2.360)  | (1.674) | (1.677) | (1.762) | (4.402) | (2.051) | (1.887) | (1.437) | (1.443) | (1.663) |
| ree      | 0.044 ** | 0.053 ** | 0.049 * | 0.040 ** | 0.036 ** | 0.044 ** | 0.053 ** | 0.049 * | 0.040 ** | 0.036 ** | 0.044 ** |
| (2.248)  | (7.144)  | (7.922) | (2.051) | (2.051) | (2.051) | (2.101) | (2.097) | (2.097) | (2.097) | (2.097) | (2.097) |
| cv       | 6.303 ** | 7.411 | 7.888 * | 7.455 ** | 6.161 ** | 8.356 | 7.942 ** | 6.811 * | 6.982 * | 5.705 * | 6.341 |
| (2.353)  | (0.982)  | (1.628) | (2.297) | (5.853) | (1.397) | (7.143) | (2.333) | (1.844) | (1.602) | (1.127) | (1.127) |
| c        | 0.479 | 0.511 | 0.423 | 0.399 | 0.525 | 0.496 | 0.471 | 0.459 | 0.336 | 0.367 | 0.358 |
| Year     | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Province | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Obs      | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 |

| Variable | I1 | I2 | I3 | I4 | I5 | Step Two | I1 | I2 | I3 | I4 | I5 | Step Three |
|----------|----|----|----|----|----|----------|----|----|----|----|----|------------|
| rt2      | 0.856 ** | 0.931 ** | 0.767 * | 0.890 * | 0.756 * | 0.224 ** | 0.462 ** | 0.487 ** | 0.524 | 0.441 | 0.397 * |
| (2.118)  | (2.360)  | (1.674) | (1.677) | (1.762) | (4.402) | (2.051) | (1.887) | (1.437) | (1.443) | (1.663) |
| ree      | 0.044 ** | 0.053 ** | 0.049 * | 0.040 ** | 0.036 ** | 0.044 ** | 0.053 ** | 0.049 * | 0.040 ** | 0.036 ** | 0.044 ** |
| (2.248)  | (7.144)  | (7.922) | (2.051) | (2.051) | (2.051) | (2.101) | (2.097) | (2.097) | (2.097) | (2.097) | (2.097) |
| cv       | 6.303 ** | 7.411 | 7.888 * | 7.455 ** | 6.161 ** | 8.356 | 7.942 ** | 6.811 * | 6.982 * | 5.705 * | 6.341 |
| (2.353)  | (0.982)  | (1.628) | (2.297) | (5.853) | (1.397) | (7.143) | (2.333) | (1.844) | (1.602) | (1.127) | (1.127) |
| c        | 0.479 | 0.511 | 0.423 | 0.399 | 0.525 | 0.496 | 0.471 | 0.459 | 0.336 | 0.367 | 0.358 |
| Year     | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Province | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Obs      | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 | 570 |

Note: T-statistics shown in parentheses; * 10% significant level; ** 5% significant level; *** 1% significant level; cv control variable, √ included.

5. Conclusions

In recent years, with the prevalence of rural tourism, it has affected all aspects of rural areas such as rural economy and rural ecological environment in China. On the basis of this background, this paper aims to study how rural tourism affects the sustainable farmers’ income. Using the panel data over the period 2003–2020 and employing the mediation effect model, an empirical analysis about the topic this paper focused on is conducted. The empirical findings are fivefold as follows: (1) The first is that the effect of rural tourism on sustainable farmers’ income is positive and statistically significant. However, among five kinds of farmers’ income, the coefficients in magnitude are different. (2) The second is that there is a mediation effect of rural ecological environment on the relationship between rural tourism and sustainable farmers’ income. (3) The third is that there is a mediation effect of urbanization on the relationship between rural tourism and sustainable farmers’ income. (4) The fourth is that in general, the mediation effect of rural ecological environment on the relationship between rural tourism and sustainable farmers’ income is less than that of the mediation effect of urbanization. (5) The fifth is that using the number of rural tourists as a new index to measure rural tourism, we re-estimate the effect of rural tourism on sustainable farmers’ income, and we find that the findings in this paper are robust. In general, these findings enrich the existing literature as they only concentrate on the direct effect of rural tourism on farmers’ income [76–79].

Based on the results this paper reached, some corresponding suggestions are put forward to accelerate the sustainability of farmers’ income in China as follows: (1) Due to the fact that the findings indicate that rural tourism positively, significantly, and directly affects the sustainable farmers’ income, and indirectly affects the sustainable farmers’ income via the rural ecological environment and urbanization, it is suggested that local governments can increase the construction of rural tourism facilities and rural tourism advertising to attract more tourists to travel in rural areas. (2) Because the findings show that the rural ecological environment positively affects the sustainable farmers’ income, it is suggested...
that the local governments can pay more attention to the rural ecological environmental protection. For example, local governments should adhere to the concept of green development, closely follow the ecological bearing capacity of rural tourism destinations, and promote the ecological transformation of rural tourism development. Moreover, rural tourism enterprises can strengthen the understanding of the rural ecosystem, promote cleaner production, fortify environmental protection responsibility, and deal with the relationship between social and economic benefits. (3) As for urbanization, the findings report that it positively affects the sustainable farmers’ income. Therefore, it is suggested that the local governments can push a high-quality and rapid development of urbanization. (4) As the findings show that the effect of rural tourism on farmers’ income is heterogenous, it is suggested that local governments can develop themselves according to local conditions so that the positive impact of rural tourism on sustainable farmers’ income can be brought into full play. (5) The findings display that the rural fiscal expenditure positively affects the sustainable farmers’ income. It is suggested that the central government should expand the rural fiscal expenditure more so as to promote the sustainable farmers’ income. (6) The findings also reveal that the rural infrastructure positively affects the sustainable farmers’ income. It is suggested that local government should increase the infrastructure construction, which not only facilitates tourists, but also expands urban integration. This can help to promote the sustainable farmers’ income.

Of course, there are some limitations in this paper. Future scholars can improve these deficiencies to achieve new results. For example, some other mediation variables such as the technological progress are not included in this paper. So, future scholars can employ different mediation variables to produce different results. Moreover, besides the econometric technique used this paper, more advanced econometric technique such as the generalized method of moments may produce more reliable and robust results. In addition, due to the uneven economic development in China, future scholars can decompose the whole sample of China into small samples to reanalyze the effect of rural tourism on sustainable farmers’ income. This treatment can reflect China’s real situation on this proposition more accurately.

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