

Article

Land Use Optimization for Rural Resilience: A Study Based on Land Resource Value Realization and Labor Output Elasticity in Rural Tourism in China

Huaiyu Chen ¹, Yulin Zhang ¹, Hongwen Qin ¹ and Ling Wu ^{2,*}

¹ College of Public Administration, Northeast Agricultural University, Harbin 150030, China; chenhuaiyu@neau.edu.cn (H.C.); a12220096@neau.edu.cn (Y.Z.); s2512022043@neau.edu.cn (H.Q.)

² College of Marxism, Northeast Agricultural University, Harbin 150030, China

* Correspondence: z10349@neau.edu.cn

Abstract

Labor and land resources are two key factors of production. The extent of their internalization significantly influences rural resilience. This study evaluates the resilience of different rural business formats by measuring the degree of land resource internalization and the output elasticity of labor. Based on survey data from 47 counties in China, this study analyzes eight types of rural formats using ordinary least squares (OLS) regression and bootstrapping methods. The results show that business formats such as Gourmet Catering, Rural Homestay and Camping, Specialty Local Product Sales, and Health and Wellness Tourism have established stable labor input relationships and exhibit characteristics of economic self-sufficiency. In contrast, other formats have only partially established such relationships and demonstrate a lower level of internalization of resource externalities. The finding from this study indicates that enhancing the internalization of land resources and optimizing labor allocation are crucial for strengthening rural resilience.

Keywords: land resources; human resources; economic resilience; resource utilization efficiency; labor input–output relationship

1. Introduction

Rural areas contain a wide range of resources that can support tourism development, including attractive natural scenery, agricultural landscapes, local food systems, traditional settlements, and cultural heritage [1,2]. The scenic appeal and distinctive environmental qualities of the countryside often provide the initial conditions for transforming productive rural spaces into tourism destinations [3]. As consumers' demand for nature-based and experiential tourism continues to grow, the multifunctional use of rural land has become an increasingly important pathway for rural economic diversification.

At the same time, rural tourism can create local employment, diversify household income, and reduce dependence on conventional agricultural production. In developing regions, these effects may also contribute to poverty alleviation and reduce labor out-migration. In 2002, the United Nations World Tourism Organization (UNWTO) launched the Sustainable Tourism for Poverty Eradication (ST-EP) program, highlighting tourism's potential contribution to long-term rural development [4]. Consequently, understanding

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how rural tourism transforms land-resource advantages into long-term economic returns through labor participation has become an important research issue.

Land resources perform multiple functions, serving as the foundation for rural tourism development [5]. However, the realization of their economic value depends on active labor participation in the utilization and transformation of these resources. As tourism expands, labor becomes increasingly important in transforming resource advantages into marketable products and visitor experiences. Through these activities, resource advantages can be transformed into marketable products and visitor experiences. Therefore, the economic performance of rural tourism depends not only on the availability and utilization of land resources but also on the effectiveness of labor inputs in creating tourism value.

Labor resources play a critical role in converting tourism demand into economic output [6,7]. As rural tourism develops, labor inputs are required to provide accommodation, catering, recreational services, product marketing, and destination management. Because rural tourism employment commonly involves both full-time and part-time workers, distinguishing between these two forms of labor helps explain their different contributions to tourism production, service delivery, and income generation. Effective labor allocation can therefore improve operational efficiency and enhance the economic performance of rural tourism. In this study, land resources are understood as a broad set of natural, cultural, and environmental assets embedded within rural spaces [8,9]. Beyond land itself, these resources include agricultural landscapes, natural scenery, farming culture, vernacular architecture, and other place-based characteristics that contribute to tourism attractiveness. Through tourism development, these resources can be transformed into economic value, creating employment opportunities, increasing farmers' incomes, and supporting rural development [10,11]. Resilience refers to the capacity to absorb, recover from, and adapt to disturbances such as climate change [12,13]. Economic resilience refers to the ability of an economy to resist, adapt to, and recover from shocks without losing its core functions [14–17]. Self-sufficiency refers to the ability of the system to achieve value creation and continuous operation based on internal resources, reflecting the endogenous basis of system development. Therefore, self-sufficiency provides the basic conditions for the formation of resilience, and resilience is the further embodiment of the endogenous development ability of the system in the face of external shocks.

Labor resources and land resource synergistic effects determine the efficiency of transforming rural resources into tourism products and services and, consequently, shape the resilience of rural tourism. As a major pillar of the rural economy, rural tourism resilience enhances the capacity of local economies to sustain employment, generate income, and withstand external shocks, thereby fostering rural economic resilience. Improved rural economic resilience, in turn, provides the material foundation for social well-being, ecological resilience, and long-term rural prosperity, ultimately contributing to the strengthening of overall rural resilience [18,19]. From this perspective, assessing rural tourism resilience in terms of labor input–output efficiency and the degree of internalization of land resource externalities not only helps explain the sources of resilience in rural tourism systems. In addition, it also reveals the transmission mechanism through which resources influence rural economic resilience and, ultimately, rural resilience.

By facilitating the transformation of land-resource advantages into tourism products and services, labor and land jointly determine the economic performance of rural tourism. Consequently, the effective utilization of these two resources is essential for strengthening rural tourism resilience and supporting rural development under both internal and external shocks. Existing studies show that labor resources are closely linked to the economic performance of rural tourism. Rural workers promote innovation and entrepreneurship and are an important driving force of rural economic development [20]. Innovation based

on the effective use of labor and rural resources is also vital for improving the rural economic structure and raising villagers' incomes [21]. In addition, building a skilled talent pool is essential for the long-term resilience of rural tourism [22]. Research also shows that land use is positively related to the economic benefits of rural tourism. Protecting natural landscapes and maintaining landscape integrity are key conditions for successful rural tourism development [23]. At the same time, rural tourism depends on various land resources, which provide both the physical basis for tourism projects and space for further innovation and expansion [24,25]. Therefore, this study argues that improving the economic resilience of rural tourism depends on unlocking the value of its two core resources, labor and land, through better labor allocation and more innovative land use. Rural tourism is a vital component of the rural economy, and its resilience contributes significantly to the development of rural economic resilience, a key dimension of rural resilience [26–28]. Evaluating rural tourism resilience in terms of labor input–output efficiency and the internalization of land resource externalities not only helps assess the quality of rural tourism development but also captures the resilience of the rural economy from an industry-level perspective. Consequently, rural tourism resilience provides a useful analytical framework for examining the processes through which rural resilience is generated and reinforced. From the perspective of rural poverty alleviation, the long-term effectiveness of rural tourism depends on whether land resources can be transformed into economic value and whether labor inputs can be converted into sustained income growth for rural households. Therefore, land-resource externality internalization and labor output elasticity provide measurable indicators for evaluating the economic foundations of rural tourism resilience. Studies on labor resources show that tourism can broaden employment and income sources in poor rural areas. In Zimbabwe's Manicaland Province, villagers not only worked in tourism jobs such as cleaning but also produced handicrafts, creating new consumer markets and expanding the value of rural tourism [29]. In Tulou Village, Fujian, limited rural job opportunities pushed laborers into the tourism sector and shaped their employment patterns within it [30]. These findings suggest that the role of labor input in tourism still needs further examination, including whether tourism is economically self-reliant and how labor input differs across tourism formats.

Land resources are also fundamental to rural tourism, because activities such as dining, camping, specialty product sales, and wellness tourism all depend on their effective use [31,32]. The proper development and efficient use of land are essential for tourism [33]. Despite the recognized importance of land resources, their economic contribution to rural tourism remains highly uneven across regions and tourism formats. Some tourism activities successfully transform land-based resources into market value, whereas others fail to fully realize their economic potential. Existing studies have paid limited attention to systematically evaluating how different tourism formats utilize land resources and generate resilience outcomes [34]. Existing studies have paid greater attention to tourism growth and resource development, while paying less attention to evaluating how different rural tourism formats transform land resources into economic value and contribute to rural tourism resilience.

Therefore, exploring the resilience of rural tourism from the perspectives of labor input and land resource use is an important issue. Although tourism has been shown to play a significant role in rural poverty alleviation [35–37], it remains unclear whether different rural tourism formats can effectively transform land resources into economic value through resource utilization and establish stable labor input–output relationships that support income generation and resilience are improved. Accordingly, this study addresses the following research question: Do different rural tourism business formats exhibit significant differences in land resource externality internalization and labor output elasticity, and how do these differences contribute to variations in rural tourism resilience

among business formats? Against this background, this paper examines the resilience of different types of rural tourism in China by analyzing both labor factor input and land resource utilization. Using eight business formats across 47 representative counties distributed in 14 provinces of China, all of which are nationally recognized rural revitalization demonstration counties or key rural tourism development counties, the study measures labor input through labor output elasticity and land use through the degree of internalization of land resource externalities. It then compares the strengths and weaknesses of different rural business formats and offers targeted recommendations for their development.

2. Literature Review

2.1. *The Impact of Land Resources and Labor Resources on Rural Economic Development*

In terms of land resource use, scholars generally agree that the rational development and efficient use of land resources are important for strengthening the resilience of the rural economy [38–40]. However, some rural areas in China still face problems such as overuse and underinvestment in land resources [41,42]. To address this, scholars argue that China should move away from an exogenous, administration-driven development model, allow the market to play a greater role in resource allocation, make better use of local advantages, and develop distinctive rural business formats to strengthen endogenous rural development [43]. Land resources take natural resources, cultural resources, and economic resources as multiple carriers to support the development of rural business formats [44]. Their effective use depends on the internalization of natural resource externalities [45], the activation of cultural resources [46,47] and the transformation of economic capital accumulation, and the employment effects of human resources [48,49]. Although empirical studies on rural tourism have mainly focused on economic resources from agricultural economics and cultural resources from rural sociology, quantitative research on natural resources, especially land, remains limited. Some scholars have therefore called for land resources to be incorporated into quantitative tourism research [50,51]. Since land resources often generate strong positive externalities [52–54], evaluating the economic benefits created through their transfer and use is especially important. Overall, existing studies have highlighted the importance of land resources for rural development and tourism growth. However, limited attention has been paid to quantitatively comparing how different rural tourism business formats transform land resources into economic value, leaving the relationship between land resource value realization and rural tourism resilience insufficiently understood.

Research on rural human resource utilization has mainly relied on case studies and regional empirical analysis. For example, Salimova G used regional data from the Russian Federation to examine the spatial and temporal drivers of agricultural labor productivity and provide policy recommendations for improving labor use efficiency [55]. Houston D analyzed workforce underutilization and found that women, young people, and low-skilled groups are particularly affected, offering a clearer basis for policymaking [56]. Huang Jianhong, based on evidence from three townships in Hengshan County, proposed a development model that links industrial development, cultural cultivation, and human resource empowerment. These studies show that the effective use of labor resources is closely related to farmers' prosperity. However, most existing research remains qualitative. Although some studies have included rural human resources as indicators of socio-economic development and quantitatively examined their relationship with rural industrial growth [57–59], labor output elasticity has not yet been directly measured. Furthermore, existing studies generally evaluate labor resources through aggregate socioeconomic indicators or qualitative assessments, making it difficult to compare the efficiency of labor input–output transformation across different rural tourism business formats.

At present, rural tourism development in China shows three major trends. Firstly, tourism forms are becoming more diverse. Rural tourism increasingly activates the social, economic, ecological, and cultural functions of land resources, while changing consumer interests continue to drive the innovation of new tourism forms [60]. This makes it necessary to compare different types of rural tourism, identify their respective strengths and weaknesses, and propose targeted development strategies. Secondly, tourism demand is becoming more diverse. Consumers now seek not only leisure, but also health, education, and other experiences. Whether rural tourism can respond to these new demands depends closely on the multifunctional use of land resources [61]. This highlights the need for a more comprehensive evaluation of land resource use in rural tourism practice. Thirdly, rural tourism is becoming more labor-intensive. Unlike modern agriculture, rural tourism still depends heavily on labor input [62]. It is therefore necessary to examine the relationship between labor input and output through labor output elasticity, so as to explain and assess how farmers' participation in rural tourism generates income and how labor allocation can be further optimized. Taken together, previous studies have demonstrated the importance of both land resources and labor inputs for rural development and tourism growth. However, land resource utilization and labor input are often examined separately, and few studies have quantitatively compared different rural tourism business formats using measurable indicators of land resource value realization and labor output efficiency. To address these limitations, this study evaluates rural tourism resilience from the dual perspectives of land resource value realization and labor output elasticity, providing a quantitative framework for understanding how different rural tourism business formats transform resource endowments into resilience capacity.

2.2. Hypothesis and Analytical Framework

The purpose of this study is to examine the mechanisms through which land resource utilization and labor input–output relationship operate across different rural tourism modes, and to explore how these factors contribute to rural tourism resilience, rural economic development, and farmers' income growth. Based on this objective, two hypotheses are proposed. Hypothesis 1: Service-oriented rural tourism formats (e.g., Gourmet Catering, Rural Homestay and Camping, Specialty Local Product Sales, and Health and Wellness Tourism) exhibit a significantly higher degree of land resource externality internalization than education-oriented formats (e.g., Industrial Study Tours, Sports Skills, Agricultural Hands-on Practice, and Cultural and Heritage Appreciation). Hypothesis 2: Service-oriented rural tourism formats exhibit significantly higher labor output elasticity than education-oriented formats, indicating a stronger labor input–output relationship and greater economic self-sufficiency.

Based on the above discussion, this paper makes three main contributions. Firstly, it evaluates the labor input relationship in rural tourism by measuring the elasticity coefficients of both full-time and part-time labor, thereby revealing how different types of labor input affect the economic resilience of the rural tourism industry. Secondly, it uses partial correlation analysis to examine the relationships between different functions of land resources and different rural tourism business forms, and further evaluates the development level of rural tourism from the perspective of the internalization of land resource externalities. Thirdly, by taking the improvement of both land resource use and labor input allocation as a common analytical starting point, the paper compares the economic resilience of different forms of rural tourism. Such comparative research remains limited in tourism studies, but it can help build a more systematic understanding of similarities and differences across business formats.

Accordingly, this paper follows three steps. Firstly, it proposes a conceptual framework for measuring the relationship between the internalization of land resource externalities and labor factor input. Secondly, it identifies specific directions for improving the economic resilience of different types of rural tourism by examining land resource use, labor input relationships, and marginal labor productivity. Finally, based on the empirical findings, it suggests future research directions, particularly on expanding rural tourism into more diversified markets and strengthening rural economic resilience through more diversified land use and talent development.

3. Theoretical Framework of the Study

3.1. Internalization of Resource Externality

The internalization of positive land resource externalities refers to transforming the economic, social, cultural, and ecological value embedded in land into marketable products and services through innovative development and use, thereby realizing its economic value [63–65]. In economic terms, this process reduces the gap between private marginal cost (MC) and social marginal cost (SC), which arises when market prices fail to reflect the full public value of land resources. In rural tourism, this is reflected in business formats such as gourmet dining based on local food culture, B&Bs and camping based on rural landscapes, and specialty product sales based on the processing and marketing of agricultural goods. By converting the multiple functions of land into market returns, these practices enhance the endogenous dynamism and resilience of the rural economy [66].

Rural tourism is also a labor-intensive industry that depends heavily on services, experiential activities, and agricultural product processing, with part-time employment being common [67]. Therefore, the input structure of full-time and part-time labor, together with the degree of land resource internalization, is central to understanding how land and labor are transformed into economic output and how rural economic resilience is strengthened [68].

Although many developing countries, including China and Brazil, possess abundant land resources, converting them into long-term economic capital remains a major challenge [69]. This study addresses that issue by constructing an evaluation framework for rural tourism resilience based on two dimensions: labor input relationships and land resource internalization. Labor input relationships are measured by labor output elasticity, which captures the responsiveness of operating revenue to changes in labor wages. A significantly positive elasticity suggests that labor input promotes revenue growth and that the labor input relationship has been established. Land resource utilization is measured by the degree to which positive externalities are internalized. When farmers improve their skills and use local resources more creatively, such as by combining terrace landscapes with tourism experiences and specialty products, resource value can be converted into economic gains. If such initiatives are shown to generate income, they can be regarded as successful internalization of positive externalities.

3.2. Framework for Evaluating Resilience in Rural Tourism

Figure 1 presents the analytical framework. The X axis represents the quantity of products generated through resource use, that is, the level of resource utilization. The Y axis represents monetary value. The Z axis distinguishes between two stages of market development: a stage without an established market and a stage with a mature market. Curve D represents demand, MC represents private marginal cost, and SC represents social marginal cost. The gap between MC and SC reflects the positive externalities of land resources.

At the early stage of market formation, farmers often cannot fully capture the value created by resource externalities. Tourism products may generate social benefits, but these are not yet reflected in market prices. As a result, labor input may not establish a stable input-output relationship, and the resilience of the business format remains weak. Once the market develops, however, part of the external value begins to enter market transactions, the gap between MC and SC narrows, and resource use becomes more economically effective.

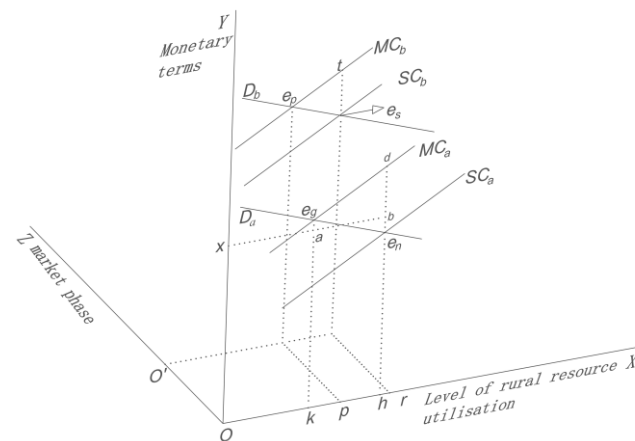


Figure 1. Theoretical analysis framework of rural economic resilience.

Based on this framework, the paper argues that two conditions are necessary for rural tourism to increase farmers' income. The first is an effective labor input-output relationship, measured by labor output elasticity. The second is a high level of economic transformation of land resources, reflected in the internalization of positive externalities. However, labor output elasticity alone only shows whether operators have made privately beneficial production decisions. It cannot determine whether they are actively converting resource externalities into market value. This requires innovative resource use by farmers themselves, such as expanding traditional resource functions into new tourism activities. If these innovations can be shown to produce economic returns, they indicate a higher level of land resource internalization and stronger rural tourism resilience.

4. Materials and Methods

4.1. Study Area and Sample Selection

This study selects 47 counties (cities/districts) from 14 provinces in China to represent eight major rural tourism business formats. The selected counties are all nationally recognized rural revitalization demonstration counties or key rural tourism development counties identified under China's rural revitalization strategy. These counties have relatively mature tourism business formats, distinctive resource endowments, and clear development orientations, making them representative cases of contemporary rural tourism development in China. China has widely adopted a pilot-based policy approach in rural development, whereby demonstration counties are selected to explore innovative development business formats and provide experience for broader policy implementation [70,71]. Within this policy context, the selected counties serve as important testing grounds for rural tourism development and offer valuable opportunities for examining how different tourism business formats utilize labor and land resources. Although the 47

counties account for only a small proportion of China's county-level administrative units, they are distributed across 14 provinces and encompass diverse geographical, economic, and tourism development conditions. Therefore, they provide a suitable basis for comparing the resilience of different rural tourism business formats and generating policy-relevant insights for rural tourism development in China and other developing countries. The spatial distribution of the 47 sampled counties is shown in Figure 2.

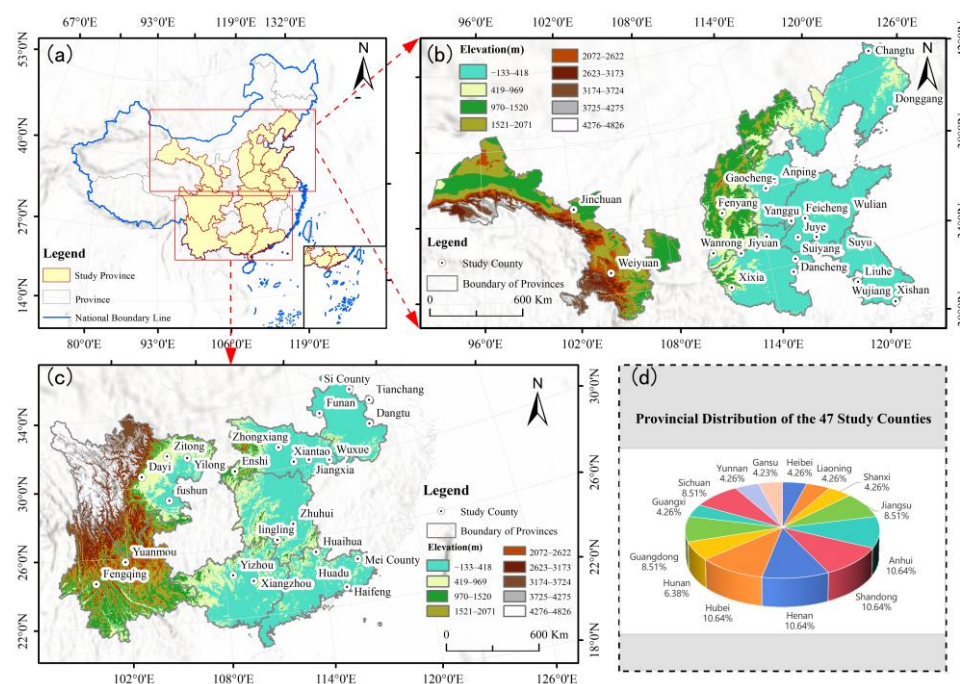


Figure 2. Spatial distribution of the study areas. (a) National scope of the study in China (Note: The map was produced based on the standard map with approval number GS (2024) 0650, and the boundary of the base map has not been modified); (b) Distribution of 22 counties/districts across seven provinces; (c) Distribution of the remaining 25 counties/districts across another seven provinces; (d) Overall distribution of all 47 sampled counties and the proportion of selected counties/districts in each province.

4.2. Data Sources and Selected Variables

Currently, there is no official statistical data on rural tourism, which imposes certain limitations on data availability. Therefore, this study relies on projects commissioned by the Ministry of Agriculture and Rural Affairs and county-level governments. It conducted a comprehensive survey of human, natural, and cultural resources related to rural tourism. The eight rural tourism business formats investigated in this study are summarized in Table 1.

Table 1. Rural tourism includes eight types of business formats.

Business Formats	Description	References
Gourmet Catering	e.g., rural cuisine, locally famous wines	[72]
Rural Homestay and Camping	e.g., rural homestays, camping farms	[73]
Specialty Local Product Sales	e.g., direct-operated stores, origin direct procurement, home delivery logistics	[74]
Health and Wellness Tourism	e.g., hot spring therapy, aromatherapy, horticultural therapy	[75]
Industrial Study Tours	e.g., dairy, meat, soybean food processing plants, bakeries	[76]

Sports Skills	e.g., ice-snow experience, watching village football/basketball tournaments, intangible cultural heritage handicraft experiences like pottery, dyeing, papermaking, weaving	[77]
Agricultural Hands-on Practice	e.g., farming, fishing, herding, tree planting, and ecological experiences	[78]
Cultural and Heritage Appreciation	e.g., local opera theaters, museums, art galleries, traditional alleys	[79]

This study draws its data primarily from the officially published documents of the sampled counties in 2024. Specifically, the sources encompass the annual Statistical Bulletins of National Economic and Social Development for 47 counties, specialized reports on rural tourism issued by cultural and tourism bureaus, investment promotion documents compiled by commercial bureaus, as well as industrial development statistics provided by agricultural and rural bureaus, and other publicly available official records of county-level functional departments. The approximate revenue distribution of the eight formats is as follows. Specialty Local Product Sales accounts for nearly half of the total revenue, representing the highest proportion. Rural Homestay and Camping (23%) and Gourmet Catering (16%) follow. These three formats together constitute nearly 90% of the total revenue, forming the mainstay of rural tourism. Among the remaining five formats, Health and Wellness Tourism accounts for 8%. The combined revenue of the four educational/popular science formats is less than 6% of the total. This indicates that consumer demand leans more strongly toward rest and recuperation.

As shown in Table 2, to evaluate the labor input-output relationship, this study focuses on the 2024 full-time and part-time wage levels, annual business revenue, and employment scale of the eight formats. Furthermore, to analyze the economic effects of resource transfer, the study examines survey items such as “status of intangible cultural heritage transmission” and “level of integration among primary, secondary, and tertiary business formats.” To measure the overall economic conditions at the county level, this study employs two indicators: the urban registered unemployment rate and the per capita disposable income of rural residents. Data on county-level urban registered unemployment rates and per capita income were obtained from the 2023 National Economic and Social Development Statistical Bulletin. All other data were collected through field surveys conducted by the research team.

Table 2. Definitions, data sources, and measurement methods of study variables.

Variable Types	Variables	Definition	Data Sources	Measurement Method
Dependent Variable	Annual Revenue (R)	Total Operating Income of Eight Types of Business in 2024 (in ten thousand yuan)	County Bureau of Culture and Tourism	Natural logarithm (ln) processing
Explanatory Variables	Full-time Labor Income (W_f)	Total Annual Salary of Full-time Employees (in ten thousand yuan)	County Bureau of Culture and Tourism	Natural logarithm (ln) processing
	Part-time Labor Income (W_i)	Total Annual Salary of Part-time Employees (in ten thousand yuan)	County Bureau of Culture and Tourism	Natural logarithm (ln) processing
Land as Production Space	Agricultural GDP Share (X_1)	Proportion of Agricultural GDP to Provincial GDP (%)	County Bureau of Agriculture and Rural Affairs	Continuous variable

	Grain Output Share (X2)	Proportion of Grain Output to Provincial Total Output (%)	County Bureau of Agriculture and Rural Affairs	Continuous variable
	Agricultural Population Share (X3)	Proportion of Agricultural Population to Total Village Population (%)	County Bureau of Agriculture and Rural Affairs	Continuous variable
	Female Labor Force Participation (X4)	Proportion of Women in Rural Labor Force (%)	County Bureau of Agriculture and Rural Affairs	Continuous variable
	Female Agricultural Force Share (X5)	Proportion of Women in Agricultural Production and Management (%)	County Bureau of Agriculture and Rural Affairs	Continuous variable
Land as Cultural Carrier	Crop Diversity Count (X6)	Number of Different Varieties of Crops in Each County (species)	County Bureau of Agriculture and Rural Affairs	Discrete count variables
	Traditional Diet Retention Rate (X7)	Proportion of Villages Maintaining Traditional Daily Dietary Habits	Field Research of the Research Group	Continuous variable
	Resource Survey Intensity (X8)	The Number of Investigations and Research on Characteristic Agricultural Resources	County Bureau of Natural Resources	Discrete count variables
	Resource Revitalization Policy Environment (X9)	Whether to Implement Measures to Revitalize Characteristic Agricultural Resources	County Bureau of Natural Resources	Dummy variable (yes = 1, no = 0)
Land as Tourism Asset	Tourism Village Planning Coverage (X10)	Number of Administrative Villages Conducting Village-by-Village Tourism Development Planning	County Bureau of Culture and Tourism	Discrete count variables
	Promotion-Supported Events (X11)	Number of Activities Receiving Financial Support and Publicity	County Bureau of Natural Resources	Discrete count variables
	Agri-Processing Facility Count (X12)	Number of Agricultural Product Processing and Sales Facilities	County Bureau of Agriculture and Rural Affairs	Discrete count variables
	Proportion of Agricultural Product Processing Facilities (X13)	Proportion of Agricultural Product Processing Facilities with Rural Appearance to the Total Number of Agricultural Product Processing Facilities (%)	County Bureau of Agriculture and Rural Affairs	Continuous variable
Level of Economic Development	Urban Unemployment Rate (X14)	Registered Unemployment Rate in Each County (in ten thousand yuan)	Annual Report on Economic and Social Development of 2024 Released by All Counties	Continuous variable
	Rural Per Capita Disposable Income (X15)	Annual Per Capita Disposable Income of Rural Residents in 2024(in ten thousand yuan)	Annual Report on Economic and Social Development of 2024 Released by All Counties	Natural logarithm (ln) processing

4.3. Methodology

Based on this conceptual framework, the methodological procedure of this study is structured as follows (Figure 3). Firstly, a conceptual framework is established to measure the relationship between the internalization level of land resource externalities and labor factor input. Secondly, based on county-level data, relevant variables are constructed to represent labor input, including full-time and part-time labor and land resource utilization, and a log-linear econometric model is developed to quantify labor output elasticity and the economic effects of resource utilization. Thirdly, the relationship between the internalization level of land resource externalities, labor input relationships, and marginal labor productivity is analyzed to identify the specific pathways for improving the economic resilience of different rural tourism formats. Finally, based on the empirical results, future research directions are proposed, focusing on the diversification of rural tourism markets and the enhancement of rural economic resilience through diversified land resource utilization and talent development.

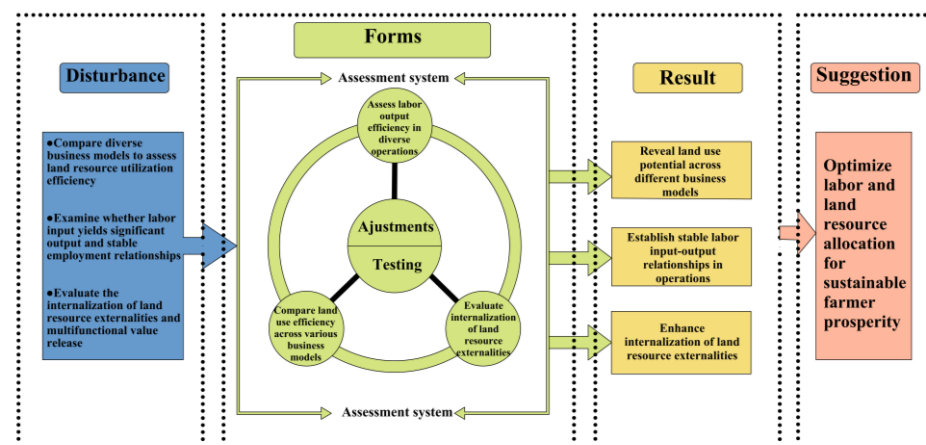


Figure 3. Research framework and analytical procedure.

4.4. Model Specification

To empirically assess the differences in the level of labor input relationships across different business formats, this study constructs the following econometric model. The core dependent variable of this model is operating revenue (R), which measures the economic output of a business format. The explanatory variables focus on two core types of factors: The first is labor input, specifically disaggregated into wages for full-time labor (W_f) and wages for part-time labor (W_p). The parameters associated with these two types of labor input represent the output elasticity coefficients for full-time and part-time labor, respectively. In contrast, the performance parameters capture the economic benefits of resource transfer. The second is the innovative utilization of land resources, represented by a set of variables (X) denoting the degree of capitalization of land resources, such as specific measures like developing specialty agricultural products or constructing processing facilities with rural aesthetics. Their parameters are used to analyze the economic benefits brought by these innovative initiatives, thereby measuring the level of internalization of positive externalities from land resources. Specifically, the relationship between the operating revenue (R) of business format i ($i = 1, 2, \dots, m$) and the aforementioned variables can be expressed as follows.

$$R = f(X, W_f, W_t) \quad (1)$$

By analyzing the results from the two measurement methods for labor output elasticity, we can assess the strength and stability of the impact of full-time and part-time

labor inputs on operating revenue growth, i.e., the degree to which the labor factor input relationship is established in the business format. As shown in Table 3, assuming no multicollinearity and uneven data dispersion, the results of the labor output elasticity measurement can be categorized into the following four scenarios based on the degree of establishment of the labor factor input relationship.

Table 3. Relationship between labor factor inputs and labor output elasticities.

Situation	Full-Time Work Output Elasticity	Part-Time Work: Output Elasticity	Work Factor Input Relations
1	insignificant	insignificant	Not established
2	insignificant	statistically significant	Partially established
3	statistically significant	insignificant	Low
4	statistically significant	statistically significant	High

Scenario 1: Both types of labor output elasticity are insignificant. No positive relationship exists between revenue growth and labor input, meaning the labor factor input relationship for the sector is not yet established.

Scenarios 2 and 3 belong to the situation where the output elasticity of one type of labor is significant, and revenue growth is positively associated only with that single type of labor input, indicating that the labor factor input relationship for the enterprise is not fully established. In these cases, a significant elasticity coefficient suggests the enterprise is at a stage where it primarily relies on the time input and professional skills of full-time employees to sustain operations. At the same time, the demand for part-time labor remains at a low level.

In Scenario 4, the output elasticities of both labor factors are significant, and a positive correlation exists between both types of labor input and revenue growth. This indicates that the enterprise's labor factor input relationship is well-established. For a large-scale market, such an enterprise is at a stage requiring sufficient employment of both full-time and part-time staff, simultaneously making the greatest contribution to regional employment.

4.5. Method

Based on the analytical model, the following exponential function model is constructed to estimate the labor output elasticity and the economic effects of resource transfer for business format i .

$$R = e^{c+aX} W_f^\alpha W_p^\beta \quad (2)$$

Equation (2) is derived by taking the natural logarithm of both sides of Equation (1), resulting in Equation (3):

$$\ln R = c + aX + \alpha \ln W_f + \beta \ln W_p + v^e \quad (3)$$

The estimation target of Equation (3) is eight categories of business formats. The dependent variable is the annual operating revenue R (in million yuan) of business format i . The explanatory variables include annual wages for full-time labor W_f (in million yuan), and annual wages for part-time labor W_p (in million yuan). The parameter α represents the output elasticity of full-time workers, and the parameter β represents the output elasticity of

part-time workers. c is the constant term, v is the stochastic error term, and the variable X is used to represent the state of resource utilization.

Compared to traditional agricultural products, the price elasticity of rural tourism products fluctuates due to factors such as geographical location, seasonal variations, and quality differences. In general, when the private marginal cost curve exhibits price elasticity, an inverse relationship exists between changes in product supply quantity and changes in operating profit [80]. Since the endogenous shift effect of the private marginal cost curve (supply function) is difficult to quantify [81], this econometric model (α) uses changes in operating profit as a proxy for the economic effects of resource transfer.

To control for interactions among these variables, this study uses Stata 15.0 (StataCorp LLC, College Station, TX, USA) to conduct case-by-case correlation tests. The tests cover data from 47 counties, employing Ordinary Least Squares (OLS) for estimation. If heteroskedasticity is detected, the Bootstrap method is used for supplementary testing, and least squares (OLS) and bootstrap if dispersion inhomogeneity is detected.

5. Results

5.1. Correlation Between Rural Business Format Resilience and Land Resource Utilization Level

To analyze the correlation between the resilience of rural business formats and the level of land resource utilization, this study conducted a partial correlation analysis between multiple functions of land resources and eight business formats. The results are presented in Table 4. Within the category of land as a production space, Agricultural GDP Share ($X1$) and Agricultural Population Share ($X3$) show significant positive correlations with business formats such as gourmet dining and homestay camping. This indicates that productive land resources, centered on local agricultural products and pastoral landscapes, effectively internalize economic and ecological value through tourism formats, transforming them into core experiences that attract consumers. Regarding the function of land as a cultural carrier, Crop Diversity Count ($X6$), Traditional Diet Retention Rate ($X7$), and Resource Revitalization Policy Environment ($X9$) show significant positive correlations with most business formats.

Table 4. Partial Correlation Coefficients between Rural Business Formats Based on Land Resource Functions.

Category of Land Resource Function	Project	Gourmet Dining	Rural Homestay and Camping	Specialty Local Product Sales	Wellness and Health Tourism	Sports Skills	Agricultural Hands-on Practice	Cultural and Heritage Appreciation	Industrial Study Tours
Land as Production Space	X1	0.3654 **	0.2824 *	0.3455 **	—	—	—	—	—
	X2	—	—	—	—	0.2751 *	—	−0.2859 *	—
	X3	0.2431 *	0.4443 ***	—	—	0.2567 *	—	—	—
	X4	0.4950 ***	—	0.3882 ***	−0.2872 *	—	—	—	—
	X5	0.3349 **	—	—	—	0.3206 *	0.2943 **	—	—
Land as Cultural Carrier	X6	0.2707 *	0.2941 **	0.3773 ***	0.2850 *	—	—	—	—
	X7	0.3392 **	—	0.2737 *	—	0.2763 *	—	—	—
	X8	0.3326 **	0.3318 **	0.2976 **	—	—	—	—	—
	X9	0.3202 **	—	0.3219 **	0.3507 *	—	—	—	—
Land as Tourism Asset	X10	—	0.3853 ***	0.2976 **	—	—	—	—	—
	X11	0.2624 *	—	0.3179 **	—	—	—	—	—
	X12	0.3566 **	—	0.3735 ***	0.3569 **	—	—	—	—
	X13	—	—	0.3168 **	0.4650 ***	—	0.3457 **	—	—
Level of Economic Development	X14	−0.2487 *	—	—	—	—	—	—	—
	X15	—	−0.3891 ***	—	—	—	—	—	—

Blank cells indicate that the partial correlation coefficient was not statistically significant and has been omitted from the table. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

This highlights the extensive externalities and value transformation potential inherent in soft cultural resources. For the function of land as a tourism asset, Tourism Village Planning Coverage (X10), Promotion- Supported Events (X11), and Agri-Processing Facility Count (X12) emerge as key hardware foundations driving the development of business formats like specialty product sales and wellness tourism. This reflects the boosting effect of organized resource integration and facility investment on market formation. Furthermore, Urban Unemployment Rate (X14) within the economic foundation function shows a negative correlation with high-end dining, indicating that some business formats rely on the local consumer market.

Notably, the participation of female labor shows a prominent positive association with business formats such as gourmet dining and specialty product sales. This reveals the profound impact of gender structure and human resource allocation on format resilience. Under the premise of controlling for the input relationships of various factors, the following section will analyze the specific contribution levels of these elements to the operational revenue of rural tourism.

5.2. Work Output Elasticity and the Economic Effects of Resource Transfers

Labor output elasticity reflects the relationship between labor input and output, serving to assess adaptive capacity and the stability of income generation. The economic effects of resource transfer reflect the effectiveness of resource development and utilization as well as income-increasing potential. The measurement results are shown in Table 5. The low Variance Inflation Factor (VIF) values indicate the absence of multicollinearity, justifying the use of Ordinary Least Squares (OLS) for estimation. Due to detected heteroskedasticity in the measurement for Cultural and Heritage Appreciation, the Bootstrap method was employed for that specific estimation. Regarding the economic effects of resource transfer, Table 5 only lists the estimation results that passed the significance test.

Table 5. Labor output elasticity and economic effects of resource transfers in rural tourism.

Category of Land Resource Function	Explained Variable: ln (Annual Operating Income)							
	Gourmet Dining	Rural Homestay and Camping	Specialty Local Product Sales	Wellness and Health Tourism	Sports Skills	Agricultural Hands-on Practice	Cultural and Heritage Appreciation	Industrial Study Tours
ln (Annual Full-time Labor Income)	0.3552 *** (4.36)	0.4644 *** (5.95)	0.6267 *** (5.95)	0.4367 *** (3.85)	0.5959 *** (3.55)	0.4493 * (1.86)	1.2810 ** (2.22)	0.3638 (1.47)
ln (Annual Part-time Labor Income)	0.3770 *** (3.49)	0.3079 *** (3.44)	0.1815 *** (2.75)	0.3131 ** (2.26)	0.1674 (1.32)	0.3784 (1.68)	0.1487 (0.26)	0.3214 * (1.82)
Number of Measures to Revitalize Special Agricultural Resources (yes = 1, no = 0)	0.0048 * (1.75)	—	—	0.0048 * (1.75)	—	—	—	—
Urban Unemployment Rate	−0.1618 ** (−2.19)	—	—	—	—	—	—	—
Dummy Variable for Agro-processing Facilities with Rural Appearance (yes = 1, no = 0)	—	—	1.7389 ** (2.10)	—	—	—	—	—

ConstantTerm (in math.)	5.1656 *** (5.85)	3.8967 *** (8.08)	4.2575 *** (5.99)	3.4610 *** (3.33)	2.3814 ** (1.99)	2.3770 * (1.52)	−3.0878 (−0.69)	3.4848 ** (2.74)
ajstR ²	0.6909	0.8412	0.7348	0.5650	0.3356	0.2699	0.3536	0.3829
Vif	1.44	2.68	1.45	1.26	1.05	1.43	—	1.97
Breusch-Pagan test	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	—	n.s.
Wald chi ²	—	—	—	—	—	—	7.17 **	—
Measurement Methods	ols	ols	ols	ols	ols	ols	bootstrap	ols
Sample Size	41	42	43	32	31	33	22	27

T-values in parentheses, z-values for bootstrap measurements, ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

The empirical results reveal two key findings. Firstly, labor output elasticities differ markedly across business formats. The three main formats—Gourmet Dining, Rural Homestay and Camping, and Specialty Local Product Sales—exhibit relatively high adjusted R² values, with part-time labor elasticities positive and significant at the 1% level, corresponding to Scenario IV in Table 3. In contrast, the remaining five formats, which primarily serve educational and popular science functions, display lower adjusted R² values and only partial establishment of labor input relationships (Scenarios II or III). Second, the economic effects of land resource utilization are generally weak. Only a few indicators show limited positive impacts on specific formats, while most resource capitalization measures lack statistical significance. This suggests that farmers' capacity for innovative and autonomous use of multifunctional land resources remains low, with positive externalities not yet systematically internalized into market value.

5.3. Marginal Labor Productivity

Marginal labor productivity is derived from the ratio of labor output elasticity to the employment coefficient. For this calculation, labor output elasticity takes the parameter values that achieved significance at the 1%, 5%, and 10% levels. The employment coefficient uses the average value for each business type (i.e., total labor income/operating revenue per enterprise). As shown in Table 6, when the measurement value is not significant at the 1% or 5% level, the marginal labor productivity is considered 0. The marginal labor productivity for the three main business formats is slightly below or above 1. The marginal labor productivity for Cultural and Heritage Appreciation, Sports Skills, and Agricultural Hands-on Practice is significantly below 1.

Table 6. Marginal productivity of labor in rural tourism.

Business Format	Full-Time Job Labor Marginal Productivity	Concurrent Job Labor Mar- ginal Productivity
Gourmet Catering	0.989	3.159
Rural Homestay and Camping	1.441	2.197
Specialty Local Product Sales	9.734	5.706
Health and Wellness Tourism	1.771	0.759
Industrial Study Tours	0	0.979
Sports Skills	0.448	0
Agricultural Hands-on Practice	0.264	0
Cultural and Heritage Appreciation	0.147	0

Marginal productivity of labor = labor output elasticity/hiring coefficient. The value of labor output elasticity is taken from the parameter that reaches significance at the 10% level, and the employment coefficient = wages/operating income for each activity.

6. Discussion

In this paper, the labor output elasticity of rural tourism was measured by choosing labor wages as the explanatory variable and annual operating income from tourism activities as the dependent variable. Since the labor productivity of tourism is affected by the ratio of part-time labor [82], this study categorizes and validates part-time and full-time labor elements. The results show that, for four types of rural tourism sectors—Gourmet Catering, B&B Camping, Specialty Product Sales, and Health and Wellness Tourism—both full-time and part-time labor output elasticity are statistically significant at the 1% level. This indicates a positive correlation between labor input and business income growth in these sectors. Accordingly, the labor factor input relationship is considered established. These sectors thus exhibit characteristics of economic self-sufficiency. The four categories of business formats that play educational and popular science functions, including Sports skills, Production practice, appreciation of the humanities, and Factory Research, are established as part of the labor factor input relationship.

Previous studies have shown that tourism labor productivity is influenced by labor composition, labor structure [83], part-time working hour ratios [84], worker attributes, and tourism demand elasticity [85]. However, existing research has mainly focused on identifying determinants of labor productivity within individual tourism sectors, while paying limited attention to differences among rural tourism business formats. The findings of this study suggest that the effectiveness of labor inputs varies substantially across tourism activities. Gourmet Catering, B&B Camping, Specialty Product Sales, and Health and Wellness Tourism are highly service-oriented sectors that rely on continuous visitor interaction, accommodation services, catering provision, product sales, and operational management. As a result, both full-time and part-time labor can be readily converted into tourism revenue.

In contrast, educational and science-oriented tourism activities often depend more heavily on educational content, institutional support, and public-service functions. Therefore, additional labor inputs do not necessarily generate proportional increases in operating income. These differences indicate that labor output elasticity is shaped not only by labor quantity but also by the characteristics of tourism products and the mechanisms through which labor is transformed into economic value. By comparing multiple tourism business formats simultaneously, this study extends the literature on labor productivity in rural tourism and provides a new perspective for evaluating rural tourism resilience. More importantly, these findings provide empirical support for Hypothesis 2. Service-oriented rural tourism formats, including Gourmet Catering, B&B Camping, Specialty Product Sales, and Health and Wellness Tourism, exhibit significant labor output elasticity and a stronger labor input–output relationship than education-oriented formats. In these sectors, both full-time and part-time labor can be effectively transformed into operating income, reflecting a relatively high degree of economic self-sufficiency. By contrast, education-oriented formats such as Sports Skills, Production Practice, Cultural Appreciation, and Factory Research rely more heavily on educational content, institutional support, and public-service functions. Consequently, additional labor inputs do not necessarily generate proportional increases in tourism revenue. These findings suggest that labor output elasticity is influenced not only by labor quantity but also by the marketability of tourism products and the mechanisms through which labor inputs are converted into economic value.

Secondly, as illustrated in Table 7, significant differences were observed in the market performance of different tourism sectors. Gourmet Catering, B&B Camping, and Specialty Product Sales achieved larger market shares than other tourism formats, indicating a stronger ability to transform land-resource advantages into economic returns. This finding is consistent with previous studies suggesting that rural landscapes, environmental

amenities, agricultural resources, and local cultural assets constitute important sources of tourism attractiveness and destination competitiveness [86–88]. These resources possess multiple economic, ecological, cultural, and social functions and therefore generate substantial positive externalities. However, the results indicate that the economic effects of resource transfers remain insignificant and that the overall level of land-resource externality internalization is relatively low.

Table 7. Summary of measurement results.

Market Type	Market Function	Activities	Full-Time Labor Output Elasticity	Part-Time Labor Output Elasticity	Labor Factor Input Relations	Degree of Economic Self-Reliance	Contribution to Regional Employment	Economic Effects of Resource Transfers	Level of Resource Utilization
Scenario II	popularization of science in education	Factory Research	insignificant	statistically significant	partially established	Low	Low	not found	Low
Scenario III	popularization of science in education	Sports skills, humanistic appreciation, Production practice	statistically significant	insignificant	partially established	Low	Low	not found	Low
Scenario IV	rest and recuperate	Gourmet Catering, B&B Camping, Specialty Products Sales, Health and Wellness	statistically significant	statistically significant	established	High	High	not found	Low

This suggests that only a limited proportion of the value embedded in rural resources is currently incorporated into market transactions. In many cases, tourism operators focus on a narrow range of products and services, while broader ecological, cultural, and experiential values remain underutilized. Consequently, the market captures only part of the benefits generated by rural resources, limiting the conversion of land-resource advantages into long-term economic returns. The findings also provide support for Hypothesis 1. Service-oriented tourism formats, particularly Gourmet Catering, B&B Camping, Specialty Product Sales, and Health and Wellness Tourism, demonstrate a stronger capacity to transform land-resource advantages into market returns than education-oriented formats. Their larger market shares indicate a higher degree of land-resource externality internalization and a greater ability to capture the economic value embedded in rural landscapes, agricultural resources, and cultural assets. However, despite these inter-format differences, the overall level of land-resource externality internalization remains relatively low. This suggests that a substantial proportion of the ecological, cultural, and experiential value embedded in rural land resources has not yet been incorporated into market transactions.

From the perspective of rural tourism resilience, the findings of Hypotheses 1 and 2 highlight the importance of both land-resource value realization and labor input–output efficiency. Service-oriented tourism formats generally exhibit higher levels of land-resource externality internalization and labor output elasticity than education-oriented formats, indicating a stronger capacity to transform resource endowments into stable economic returns. These characteristics contribute to greater economic self-sufficiency and resilience in the face of market fluctuations. In contrast, education-oriented formats rely more heavily on public-service functions, educational content, and institutional support, resulting in weaker labor input–output relationships and lower levels of land-resource value realization. Therefore, enhancing product innovation, resource integration, and multifunctional land use, while improving the efficiency with which labor inputs are

transformed into economic value, may represent important pathways for strengthening rural tourism resilience.

The above findings indicate that differences in rural tourism resilience arise from both labor allocation efficiency and the capacity to transform land-resource advantages into economic value. Overall, the empirical results support both Hypothesis 1 and Hypothesis 2. Service-oriented business formats exhibit higher levels of labor output elasticity and land-resource externality internalization than education-oriented formats, indicating a stronger ability to transform labor and land resources into stable economic returns. These differences contribute to variations in rural tourism resilience across business formats. However, despite the relatively stronger performance of service-oriented formats, the overall level of land-resource externality internalization remains low, suggesting that a substantial proportion of the ecological, cultural, and experiential value embedded in rural land resources has not yet been effectively incorporated into market transactions.

Therefore, policy interventions should be tailored to the characteristics of different tourism business formats rather than relying on a uniform development strategy. For education-oriented formats with relatively weak labor input–output relationships and lower levels of land-resource value realization, governments should strengthen support through industrial integration programs, talent cultivation initiatives, specialized training, and targeted financial assistance. By contrast, service-oriented formats should focus on improving product quality, market competitiveness, and value-added service provision in order to further enhance their resilience and long-term development capacity. Through differentiated policy support, various rural tourism business formats can better utilize local resource endowments and improve their resilience performance.

In addition, the policy framework for land-resource value realization requires further strengthening. This entails optimizing land transfer policies, improving land property rights protection, and clarifying farmers' central role to incentivize their innovation. Concurrently, land resources should be integrated according to market demand, with clear functional zoning to enhance land-use efficiency. A viable pathway is to leverage land resources to develop diversified offerings such as agricultural experiences, characteristic homestays, and research bases. This promotes the integrated innovation of agriculture, culture, and tourism, thereby enhancing the value derived from the land and strengthening rural tourism resilience through multifunctional land use.

7. Conclusions

The results indicate that labor output elasticity and the degree of land-resource externality internalization provide effective measures for evaluating rural tourism resilience. Significant differences were observed among the eight rural tourism business formats, suggesting that the ability to transform labor and land resources into economic value varies considerably across business formats.

- (1) With the expansion of social demand, rural tourism—a new form of land resource utilization—has continued to grow and develop, and compared with traditional rural resource utilization activities, it is characterized by the provision of mainly service-type commodities; the market size varies according to the type of business, with Gourmet Catering, B&B camping, Sales of specialty products and Health and Wellness for a prominent share of the total; and the multifaceted function of resources carries an externality.
- (2) The four types of business formats that play the function of rest and recuperation show the characteristics of economic self-reliance. The labor factor input relationship of Sport skills, Production practice, appreciation of the humanities, and Factory Research is partially established. The businesses that play the function of education and

popularization of science and technology do not show the characteristics of economic self-sufficiency.

- (3) The economic effect of land resource transfer is not obvious, and the level of internalization of resource externalities is not high. It can be seen that the level of farmers' innovative use of land resources is low in the process of rural tourism operation, with only a small number of positive externalities being priced by the market. Most of the value of the resources is not fully explored and utilized, resulting in the supply of commodities in quantities and qualities that do not satisfy the current demand.
- (4) Despite the findings obtained through theoretical analysis and empirical investigation, this study has several limitations. Firstly, the sample size is relatively limited. Although eight representative types of rural tourism businesses are included, substantial regional heterogeneity in rural development makes it difficult to fully capture a wider range of regional contexts and development stages, which may constrain the generalizability of the findings. Secondly, potential sample selection bias cannot be entirely ruled out. Owing to data availability and sampling constraints, some rural tourism operators were not included in the analysis, resulting in insufficient coverage of certain business formats and potentially limiting the representativeness of the results. Thirdly, the linkage between rural tourism resilience, rural economic resilience, and overall rural resilience remains a conceptual inference. Future studies should further verify this transmission mechanism using longitudinal data.
- (5) In the future, deepen theoretical and empirical research, explore effective measures, improve farmers' innovation ability and resource utilization level, further release the value of land resources and labor resources, and realize the prosperity of farmers.

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References

1. Carneiro, M.J.; Lima, J.; Silva, A.L. Landscape and the rural tourism experience: Identifying key elements, addressing potential, and implications for the future. *J. Sustain. Tour.* **2015**, *23*, 1217–1235.
2. Osti, L.; Cicero, L. Tourists' perception of landscape attributes in rural tourism. *Worldw. Hosp. Tour. Themes* **2018**, *10*, 211–221.
3. Świdryńska, N.; Witkowska-Dąbrowska, M. Indicators of the tourist attractiveness of urban–rural communes and sustainability of peripheral areas. *Sustainability* **2021**, *13*, 6968.
4. Zhang, J.K. The nonlinear effects of tourism on rural income inequality and urban–rural income inequality: Evidence from China. *Tour. Econ.* **2023**, *29*, 172–193. <https://doi.org/10.1177/13548166211041802>.
5. Faye, B.; Du, G.; Li, Y.; Li, Q.; Diène, J.C.; Mbaye, E.; Kama, R. Connecting the farmers' knowledge and behaviors: Detection of influencing factors to sustainable cultivated land protection in Thiès Region, Senegal. *J. Rural Stud.* **2025**, *116*, 103634. <https://doi.org/10.1016/J.JRURSTUD.2025.103634>.
6. Ohe, Y. Measuring labor productivity and market viability of rural tourism activities in Japan. In *Research Topics in Agricultural and Applied Economics*; Bentham Science Publishers: Sharjah, United Arab Emirates, 2011; Volume 2, pp. 155–167.
7. Liu, A.; Wu, D.C. Tourism productivity and economic growth. *Ann. Tour. Res.* **2019**, *76*, 253–265.
8. De Groot, R. Function-analysis and valuation as a tool to assess land use conflicts in planning for sustainable, multi-functional landscapes. *Landsc. Urban Plan.* **2006**, *75*, 175–186.

9. Wiggering, H.; Müller, K.; Werner, A.; Helming, K. The concept of multifunctionality in sustainable land development. In *Sustainable Development of Multifunctional Landscapes*; Springer: Berlin/Heidelberg, Germany, 2003; pp. 3–18.
10. Zhang, J. Tourism and rural income inequality: Empirical evidence for China. *Curr. Issues Tour.* **2023**, *26*, 153–170. <https://doi.org/10.1080/13683500.2021.2010674>.
11. Fleischer, A.; Felsenstein, D. Support for rural tourism: Does it make a difference? *Ann. Tour. Res.* **2000**, *27*, 1007–1024.
12. Faye, B.; Du, G.; Diène, J.C.; Liang, C.; Mbaye, E. Exploring the Challenges and Strategies for Enhancing Resilient and Sustainable Rural Development Tailored to Thiès Region, Senegal. In *Global Perspectives on Building Resilience for Sustainable Rural Development*; .. Sustainable Development Goals Series; Springer : Singapore, 2025; pp. 45–70. https://doi.org/10.1007/978-981-96-9063-3_4.
13. Faye, B.; Faye, H.V.M.T.; Du, G.; Ma, Y.; Diène, J.C.; Mbaye, E.; Faye, L.M.T.J.; Kouadio, Y.D.; Li, Y.; Seck, H.M. Rural Development and Dynamics of Enhancing Agricultural Productivity in Senegal: Challenges, Opportunities, and Policy Implications. *World* **2025**, *6*, 76. <https://doi.org/10.3390/WORLD6020076>.
14. Murgui-Garcia, M.J.; Ruiz-Tamarit, J.R. Economic resilience in the short-run: A dynamic macroeconomic approach. *Natl. Account. Rev.* **2025**, *7*, 290–308. <https://doi.org/10.3934/NAR.2025013>.
15. Li, Y. A systematic review of rural resilience. *China Agric. Econ. Rev.* **2023**, *15*, 66–77.
16. Hennebry, B. The determinants of economic resilience in rural regions. An examination of the Portuguese case. *Misc. Geogr. Reg. Stud. Dev.* **2020**, *24*, 24–29.
17. Cui, Z.; Li, E.; Li, Y.; Deng, Q.; Shahtahmassebi, A. The impact of poverty alleviation policies on rural economic resilience in impoverished areas: A case study of Lankao County, China. *J. Rural Stud.* **2023**, *99*, 92–106.
18. McIntyre, S.; Roy, G. Revisiting the dimensions of rural resilience: The COVID-19 pandemic. *J. Rural Stud.* **2023**, *103*, 103107. <https://doi.org/10.1016/j.jrurstud.2023.103107>.
19. Yang, M.; Jiao, M.; Zhang, J. Spatio-Temporal Analysis and Influencing Factors of Rural Resilience from the Perspective of Sustainable Rural Development. *Int. J. Environ. Res. Public Health* **2022**, *19*, 12294. <https://doi.org/10.3390/ijerph191912294>.
20. Ursu, A.; Sterie, M.C.; Petre, I.L. The Contribution of the Agricultural Labour Force in Romania to the Sector's Economic Performance. *Sustainability* **2023**, *15*, 16700. <https://doi.org/10.3390/su152416700>.
21. Jones, R.C. Searching for Rural Development: Labor Migration and Employment in Mexico. *Am. Political Sci. Rev.* **1990**, *84*, 337–338.
22. Khan N, Hassan A U, Fahad S, et al. Factors Affecting Tourism Industry and Its Impacts on Global Economy of the World. *SSRN*. **2020**. <https://doi.org/10.2139/ssrn.3559353>.
23. Ayhan, Ç.K.; Tasli, T.C.; Özkök, F.; Tatli, H. Land use suitability analysis of rural tourism activities: Yenice, Turkey. *Tour. Manag.* **2020**, *76*, 103949. <https://doi.org/10.1016/j.tourman.2019.07.003>.
24. Qiao, W.; Chai, Y.; Wang, J.; Li, C. Land-use transition in tourism villages of metropolitan suburbs and mechanism analysis: A case study of She Village, Nanjing City. *Prog. Geogr.* **2024**, *43*, 1060–1073. <https://doi.org/10.18306/dlxkjz.2024.06.002>.
25. Gedecho, K.A.; Yasin, A.S.; Kovács, B.H.; Bacsí, Z. Rural Tourism and Land Use: Unveiling Global Research Trends, Gaps, and Future Pathways. *Land* **2025**, *14*, 1934. <https://doi.org/10.3390/land14101934>.
26. Gocer, O.; Boyacioglu, D.; Karahan, E.E.; Shrestha, P. Cultural tourism and rural community resilience: A framework and its application. *J. Rural Stud.* **2024**, *107*, 103238.
27. Zhong, Z.; Zhang, Y.; Zhang, J.; Su, M. How information and communication technologies contribute to rural tourism resilience: Evidence from China. *Electron. Commer. Res.* **2025**, *25*, 4559–4594.
28. Ivona, A.; Rinella, A.; Rinella, F.; Epifani, F.; Nocco, S. Resilient rural areas and tourism development paths: A comparison of case studies. *Sustainability* **2021**, *13*, 3022.
29. Gohori, O.; van der Merwe, P. Towards a Tourism and Community-Development Framework: An African Perspective. *Sustainability* **2020**, *12*, 5305. <https://doi.org/10.3390/su12135305>.
30. Huang, C.K.; Xu, H.; Li, H. Catch me if you can: Informal tourism employment of locals in scenic-oriented rural communities. *Labor Hist.* **2025**, *66*, 90–104. <https://doi.org/10.1080/0023656X.2024.2348524>.
31. Sadeghi, H.; Seidaïy, S.E. Exploring the Role of Tourism on Land Use Value in Rural Areas: A Case Study. *Int. J. Rural Manag.* **2025**, *21*, 203–223.
32. Couto, G.; Castanho, R.A.; Santos, C. Creative and Rural Tourism, Public Policies and Land Use Changes: A Multi-Method Approach towards Regional Sustainable Development in Azores Islands. *Sustainability* **2023**, *15*, 5152. <https://doi.org/10.3390/su15065152>.

33. Morrison, A.M. Editorial: Land Issues and Their Impact on Tourism Development. *Land* **2022**, *11*, 658. <https://doi.org/10.3390/land11050658>.
34. Bohác, A.; Drápela, E. Overtourism Hotspots: Both A Threat and Opportunity for Rural Tourism. *Eur. Countrys.* **2022**, *14*, 157–179. <https://doi.org/10.2478/euco-2022-0009>.
35. Dang, P.; Ren, L.; Li, J. Does rural tourism reduce relative poverty? Evidence from household surveys in western China. *Tour. Econ.* **2023**, *30*, 135481662311676. <https://doi.org/10.1177/13548166231167648>.
36. Zhao, L. Tourism, Institutions, and Poverty Alleviation: Empirical Evidence from China. *J. Travel Res.* **2021**, *60*, 1543–1565. <https://doi.org/10.1177/0047287520947792>.
37. Dossou, T.A.M.; Kambaye, E.N.; Bekun, F.V.; Eoulam, A.O. Exploring the linkage between tourism, governance quality, and poverty reduction in Latin America. *Tour. Econ.* **2023**, *29*, 210–234. <https://doi.org/10.1177/13548166211043974>.
38. Zhang, J.K. Tourism, urbanization, and urban income inequality in China. *Tour. Econ.* **2023**, *29*, 1423–1441. <https://doi.org/10.1177/13548166221108121>.
39. Schulte, O.; Mumber, J.; Nguyen, T.T. Agricultural commercialization, asset growth and poverty in rural Vietnam. *Aust. J. Agric. Resour. Econ.* **2023**, *67*, 388–416. <https://doi.org/10.1111/1467-8489.12517>.
40. Sher, A.; Mazhar, S.; Islami, I.; Acosta, Y.K.P.; Balc, R.; Azadi, H.; Yuan, H. Land Use Practices: Sustainability Impacts on Small-holder Farmers. *Land* **2025**, *14*, 1632. <https://doi.org/10.3390/land14081632>.
41. Zhu, H.; Tang, C.C.; Wang, L.; Zhao, L.; Long, J.Z.; Li, Y.Q.; Zhang, Y.; Yang, Z.; Zhang, P.; Gan, M.; et al. Research on tourism resources in the new era: Protection, utilization and innovative development: Comments of young tourism geographers. *J. Nat. Resour.* **2020**, *35*, 992. <https://doi.org/10.31497/zrzyxb.20200419>.
42. Haregeweyn, N.; Tsunekawa, A.; Tsubo, M.; Fenta, A.A.; Ebabu, K.; Vanmaercke, M.; Borrelli, P.; Panagos, P.; Berihun, M.L.; Langendoen, E.J.; et al. Progress and challenges in sustainable land management initiatives: A global review. *Sci. Total Environ.* **2023**, *858*, 160027. <https://doi.org/10.1016/j.scitotenv.2022.160027>.
43. Bai, Q.; Potimu, K.; Raju, V. Construction of the Evaluation Index System for High-Quality Development of Sports Tourism in Guangxi. *Int. J. Membr. Sci. Technol.* **2023**, *10*, 1832–1851. <https://doi.org/10.15379/ijmst.v10i4.2327>.
44. Shu, H.Y.; Zha, J.P.; Ma, R.; Yan, M.Q. Chance or challenge? Understanding how the Internet affects the nexus between tourism and urban-rural income inequality. *Tour. Econ.* **2024**, *30*, 2089–2110. <https://doi.org/10.1177/13548166241252460>.
45. Song, C.; Liu, Y.; Li, X.; Zhang, J.; Lyu, Q. Tourism development and urban housing prices: Evidence from China. *Tour. Econ.* **2024**, *30*, 1115–1139. <https://doi.org/10.1177/13548166231186906>.
46. Ma, X.L.; Wang, R.; Dai, M.L.; Ou, Y.H. The influence of culture on the sustainable livelihoods of households in rural tourism destinations. *J. Sustain. Tour.* **2021**, *29*, 1235–1252. <https://doi.org/10.1080/09669582.2020.1826497>.
47. Vasanicova, P.; Jencova, S.; Gavurova, B.; Bacik, R. Cultural And Natural Resources as Determinants of Travel and Tourism Competitiveness. *Transform. Bus. Econ.* **2021**, *20*, 300–316.
48. Chen, P.Y.; Kong, X. Tourism-led Commodification of Place and Rural Transformation Development: A Case Study of Xixinan Village, Huangshan, China. *Land* **2021**, *10*, 694. <https://doi.org/10.3390/land10070694>.
49. Liu, J. Development Research on Rural Human Resources under Urban-rural Integration. *Agro Food Industry Hi-Tech* **2017**, *28*(3), 2974–2978.
50. Stastná, M.; Vaishar, A.; Brychta, J.; Tuzová, K.; Zloch, J.; Stodolová, V. Cultural Tourism as a Driver of Rural Development. Case Study: Southern Moravia. *Sustainability* **2020**, *12*, 9064. <https://doi.org/10.3390/su12219064>.
51. Shinde, K. Imported Buddhism' or 'Co-Creation'? Buddhist Cultural Heritage and Sustainability of Tourism at the World Heritage Site of Lumbini, Nepal. *Sustainability* **2021**, *13*, 5820. <https://doi.org/10.3390/su13115820>.
52. Stringfellow, L.; MacLaren, A.; Maclean, M.; O'Gorman, K. Conceptualizing taste: Food, culture and celebrities. *Tour. Manag.* **2013**, *37*, 77–85. <https://doi.org/10.1016/j.tourman.2012.12.016>.
53. Fan, J.Y.; Zheng, B.H.; Zhang, B.Y.; Huang, Z.S.; Liu, J.Y. Research on the Revitalization Path of Ethnic Villages Based on the Inheritance of Spatial Cultural Genes-Taking Tujia Village of Feng Xiang Xi in Guizhou Province as a Case Study. *Sustainability* **2023**, *15*, 1303. <https://doi.org/10.3390/su15021303>.
54. Ratulea, G.G.; Csesznek, C.; Borcoman, M.; Sorea, D. Cultural Landscape as a Resource for Urban Regeneration in Rupea (Romania). *Land* **2023**, *12*, 1985. <https://doi.org/10.3390/land12111985>.
55. Salimova, G.; Ableeva, A.; Galimova, A.; Bakirova, R.; Lubova, T.; Sharafutdinov, A.; Araslanbaev, I. Recent trends in labor productivity. *Empl. Relat.* **2022**, *44*, 785–802. <https://doi.org/10.1108/ER-03-2021-0111>.
56. Houston, D.; Lindsay, C. Reconceptualising labour utilisation and underutilisation with new 'full-time equivalent' employment and unemployment rates. *J. Labour Mark. Res.* **2025**, *59*, 5. <https://doi.org/10.1186/s12651-025-00396-z>.

57. Gao, C.; Cheng, L.; Iqbal, J.; Cheng, D. An Integrated Rural Development Mode Based on a Tourism-Oriented Approach: Exploring the Beautiful Village Project in China. *Sustainability* **2019**, *11*, 3890. <https://doi.org/10.3390/su11143890>.
58. Tubadji, A.; Nijkamp, P. Revisiting the Balassa-Samuelson effect: International tourism and cultural proximity. *Tour. Econ.* **2018**, *24*, 915–944. <https://doi.org/10.1177/1354816618781468>.
59. Xiang, C.; Qin, J.X.; Yin, L. Study on the rural ecotourism resource evaluation system. *Environ. Technol. Innov.* **2020**, *20*, 101131. <https://doi.org/10.1016/j.eti.2020.101131>.
60. Peng, K.L.; Lin, P.M.C. Social entrepreneurs: Innovating rural tourism through the activism of service science. *Int. J. Contemp. Hosp. Manag.* **2016**, *28*, 1225–1244. <https://doi.org/10.1108/IJCHM-12-2014-0611>.
61. Tang, H.C.; Wang, R.Q.; Jin, X.W.; Zhang, Z.Z. The Effects of Motivation, Destination Image and Satisfaction on Rural Tourism Tourists' Willingness to Revisit. *Sustainability* **2022**, *14*, 11938. <https://doi.org/10.3390/su141911938>.
62. Soulard, J.; Park, J.; Zou, S.W. Pride in Transformation: A Rural Tourism Stakeholder View. *J. Travel Res.* **2024**, *63*, 80–99. <https://doi.org/10.1177/00472875221143487>.
63. Pajewski, T. Farm consolidation as an example of internalizing externalities in agriculture. *Ann. Pol. Assoc. Agric. Agribus. Econ.* **2020**, *22*, 151–160.
64. Schubert, S.F. Coping with externalities in tourism: A dynamic optimal taxation approach. *Tour. Econ.* **2010**, *16*, 321–343.
65. Sheng, L.; Li, T.; Wang, J. Tourism and externalities in an urban context: Theoretical model and empirical evidence. *Cities* **2017**, *70*, 40–45.
66. Masaeli, A.; Rezaei, N.; Derafshi, K.; Basakha, M. Effects of Corona Epidemic on Labor Employment in Iran's Tourism-Related Industries. *Tour. Manag. Stud.* **2022**, *16*, 279–308. <https://doi.org/10.22054/tms.2021.59352.2512>.
67. Yuan, B.; Yang, J.Y.; Ning, J. Balance or Quality: Impact of Part-Time Farming on the Nutrition and Health of Rural Residents. *Sustainability* **2024**, *16*, 9290. <https://doi.org/10.3390/su16219290>.
68. Bekele, M.; Sassi, M.; Jemal, K.; Ahmed, B. Human capital development and economic sustainability linkage in Sub-Saharan African countries: Novel evidence from augmented mean group approach. *Heliyon* **2024**, *10*, e24323. <https://doi.org/10.1016/j.heliyon.2024.e24323>.
69. Fan, W.G.; Zhang, Y.H.; Chen, N.; Nie, W.Q. A Review of Rural Land Capitalization: Current Status and Further Research. *Land* **2024**, *13*, 401. <https://doi.org/10.3390/land13030401>.
70. Xu, Z.; Guo, Y.; Peng, R. Effectiveness test of rural revitalization demonstration policy on rural economic development in China: Analysis of DID based on the data of Henan Province in China. *SAGE Open* **2024**, *14*, 21582440241242540.
71. Huang, C. Theoretical logic and advancing path of demonstration creation for rural vitalization. *Front. Econ. China* **2023**, *18*, 59. <https://doi.org/10.3868/s060-017-023-0004-3>.
72. Subbotina-Dubinski, Y.; Carbon, C.-C. Envisioning the Future of Fine Dining: Insights from a Multi-Methods Study in Germany. *Foods* **2025**, *14*, 2294.
73. Pop, A.-M.; Marian-Potra, A.-C.; Hognogi, G.-G.; Puiu, V. Glamping tourism as a sustainable response to the need to reinvigorate domestic tourism. *J. Destin. Mark. Manag.* **2024**, *31*, 100803.
74. Figueiredo, E.; Forte, T.; Eusébio, C.; Silva, A.; Couto, J. Rural ties and consumption of rural provenance food products—Evidence from the customers of urban specialty stores in Portugal. *Foods* **2022**, *11*, 547.
75. Dini, M.; Pencarelli, T. Wellness tourism and the components of its offer system: A holistic perspective. *Tour. Rev.* **2021**, *77*, 394–412. <https://doi.org/10.1108/TR-08-2020-0373>.
76. Montenegro, Z.; Marques, J.; Sousa, C. Industrial tourism as a factor of sustainability and competitiveness in operating industrial companies. *Sustainability* **2023**, *15*, 14243.
77. Camocini, B.; Daglio, L.; Podda, R. Sports nature culture. A participatory approach to reconstruct a multidimensional cultural landscape by leveraging outdoor sports. *Sports Act.* **2025**, *7*, 1554007.
78. AlAli, A.M.; Hassan, T.H.; Abdelmoaty, M.A. Tourist values and well-being in rural tourism: Insights from biodiversity protection and rational automobile use in Al-Ahsa Oasis, Saudi Arabia. *Sustainability* **2024**, *16*, 4746.
79. Gómez-Zapata, J.D.; Herrero-Prieto, L.C.; Arboleda-Cardona, J.A. A choice experiment economic valuation of cultural heritage tourism ecosystems. *J. Sustain. Tour.* **2025**, *33*, 591–612. <https://doi.org/10.1080/09669582.2024.2382840>.
80. Mankiw, A.N.G. *Principles of Microeconomics*; Elsevier: Amsterdam, The Netherlands, 1998; Volume 1.
81. Wooldridge, J.M. *Econometric Analysis of Cross Section and Panel Data*; MIT Press: Cambridge, MA, USA, 2010.
82. Hadad, S.; Hadad, Y.; Malul, M.; Rosenboim, M. The economic efficiency of the tourism industry: A global comparison. *Tour. Econ.* **2012**, *18*, 931–940.

83. Mancilla, C.; Ferrada, L.M. Labour reconversion from the agricultural sector to rural tourism: Analysis of rural areas in Chile. *Sustainability* **2021**, *13*, 11152.
84. Solís, A.T.; Gil, G.L. The impact of tourism on the labor market of local service industries in Barcelona. *Latv. Econ.* **2024**, *3*, 21–29.
85. Vasenska, I. Comparative analysis of machine learning and deep learning models for tourism demand forecasting with economic indicators. *FinTech* **2025**, *4*, 46.
86. Xiao, J.; Wang, M.; Gao, X. Valuing tourists' willingness to pay for conserving the non-use values of marine tourism resources: A comparison of three archipelagic tourism destinations in China. *J. Sustain. Tourism* **2020**, *29*, 678–710.
87. Teshome, E.; Dereje, M.; Asfaw, Y. Potentials, challenges and economic contributions of tourism resources in the South Achefer district, Ethiopia. *Cogent Soc. Sci.* **2022**, *8*, 2041290.
88. Oh, C.-O.; Kim, H. Stakeholder differences in economic benefits of heritage tourism development. *Tour. Econ.* **2016**, *22*, 665–670.

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