

# Research on the Paths of Rural Revitalization in Ethnic Regions from the Perspective of Tea-Tourism Integration: A Case Study in Wujiatai Village, Enshi Prefecture, Hubei Province

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**Abstract.** The industrial integration function of rural tourism plays an important role in promoting rural revitalization. Taking Wujiatai Village, Enshi Prefecture, Hubei Province as an example, using AHP and FCE, establishes the evaluation index system of Tea-Tourism Integration effect of Wujiatai Village, explores the main factors affecting the Tea-Tourism Integration in Wujiatai Village, and evaluates its level of development. The research shows that: (1) The overall membership of the Tea-Tourism Integration Effect of Wujiatai Village was 0.3222, which is a "Average" level. (2) Tourism Output Value and Tribute Tea Culture Inheritance are in the top two, reflecting that the development of local tourism and Tribute Tea Culture Inheritance of Wujiatai Village are the key factors and important indexes that affect the Tea-Tourism Integration Effect of Wujiatai Village, which needs for continuous maintenance and improvement. (3) Tribute Tea Sales, Scientific and Technological Innovation Intensity, Construction of Talent Team and Completeness Degree of Industrial Chain are the important factors restricting the further high-quality development of the Tea-Tourism Integration of Wujiatai Village, which needs to be further improved. Based on this, corresponding countermeasures and suggestions are put forward to help the rural revitalization of ethnic areas.

**Keywords:** Rural Revitalization; Tea-Tourism Integration; AHP; FCE; ethnic area

## 1. Introduction

In accordance with China's relevant policy documents on rural revitalization and rural modernization, and based on the new situation of rural work in the context of the new era, China will accelerate the construction of a modern agricultural industry system and management system, with an emphasis on solving the problem of unbalanced and inadequate rural development. The academic research on the effective implementation of rural revitalization strategy is mainly based on different realization paths and focuses on: (1) Institutional innovation. Establish a system of capital and talent incentives, clarify collective property rights of agricultural land<sup>[1]</sup>, make overall planning of resources according to local conditions<sup>[2]</sup>, and lead rural revitalization from the perspective of institutional design. (2) Industry development. Rural revitalization is promoted mainly through enabling cultural industries<sup>[3]</sup>, developing specialty industries<sup>[4]</sup>, and promoting the integration of cultural tourism<sup>[5]</sup>. (3) Rural governance. The administrative system extends to the village level, establishes smooth channels of participation of farmers in decision-making<sup>[6]</sup>, enhances the pertinence of rural governance around the real needs of rural areas<sup>[7]</sup>, and improves the overall level of rural governance and the practical effectiveness of rural revitalization with holistic thinking. (4) Education drive. Improve the accuracy of matching vocational education with rural revitalization<sup>[8]</sup>, train talented people in agriculture and rural education<sup>[9]</sup>, strengthen the development of vocational education in ethnic minority areas<sup>[10]</sup>, and provide intellectual support for rural revitalization by raising the level of vocational education development. In addition, some scholars have explored the path of rural revitalization from the perspective of integrated land management<sup>[11]</sup> and knowledge transfer in the region<sup>[12]</sup>.

Industrial development and industrial integration as one of the basic ways to promote rural revitalization, the current research focuses on leisure agriculture<sup>[13]</sup>, rural tourism<sup>[14]</sup>, ecological management<sup>[15]</sup>, cultural industry<sup>[16]</sup>, cultural tourism integration<sup>[17]</sup> and so on. Through industrial integration, we will strengthen the construction of rural infrastructure, raise the level of rural public services, bring into play the multi-functional value of agriculture and cultivate new rural conditions. As an important way of industry integration, Tea-Tourism Integration plays a leading role in the rural development of tea producing areas. At present, the development of Tea-Tourism Integration is mainly based on rural areas. It combines tea garden sightseeing, fresh tea picking, stir-fried tea, tea art display, tea tasting, tea sales, popularization of science and technology, leisure and health care, and so on, and promotes the coordinated development of three industries, such as tea tree cultivation, tea processing and tourism, to promote the deep integration of tea industry and tourism industry. The integrated development model of Tea-Tourism Integration can effectively promote the optimization of industrial restructuring, increase the production and income of the local people, and have a strong role in the rural revitalization of ethnic areas. At present, the academic research on Tea-Tourism Integration focuses on the development path<sup>[18,19]</sup> and effectiveness evaluation<sup>[20,21]</sup>, and mainly on provincial or county areas, without more detailed case studies, and limited exploration of ethnic areas. This study takes Wujiatai Village of Enshi Prefecture as the research area, analyzes and evaluates the development effect of Wujiatai Village Tea-Tourism Integration, provides the reference for the local village revitalization path optimization, helps the village revitalization in the ethnic area.

## 2. Research Area Overview

Enshi Prefecture is located in southwest Hubei Province at the confluence of Hubei, Hunan and Chongqing provinces. Tea industry is the pillar industry of Enshi Prefecture. Wujiatai Village is located in the mountainous region of Wuling Mountains and Qiyue Mountains. It is the core area of selenium-rich tea and tribute tea economic belt. Wujiatai's tribute tea culture is an important part of leisure agriculture, and plays an important role in promoting the integration of Agricultural-Tourism, Tea-Tourism and Cultural-Tourism<sup>[22]</sup>.

In 2014, the local government decided to rely on the Wujiatai tribute tea industry to follow the "tourism +" development path of integration of Tea-Tourism and Cultural-Tourism, create Wujiatai rural leisure tourism area, create eco-tea garden sightseeing, tea making experience, tea culture display, leisure and recreation, and other multi-industry tea industry chain<sup>[23]</sup>. Through many years of efforts, Wujiatai Village has formed a modern tea industry system that integrates tea tree cultivation, tea processing and tea garden leisure tourism development, and developed deeply into an idyllic industrial complex with multi-industry co-development and effective multi-dimensional value increase.

## 3. Research Methods and Data Sources

### 3.1 Research Methods

At present, the main methods of research on the effects of industrial integration include Input-Output Method, Delphi Method, Contribution Analysis Method, Analytic Hierarchy Process(AHP) and Fuzzy Comprehensive Evaluation(FCE)<sup>[24]</sup>. Based on the multi-objective, multi-criterion, multi-element, multi-level unstructured characteristics of the research subjects, this paper uses AHP, FCE and Delphi Method to study the present situation and development mode of Wujiatai Village Tea-Tourism Integration, evaluate the development effect of Tea-Tourism Integration, and probe into the effective path of rural revitalization in micro-region.

It is reasonable to use AHP to describe the evaluation of Tea-Tourism Integration effect in a layered way, and to determine the evaluation index system and its index weight of Tea-Tourism Integration effect in Wujiatai Village. Fuzzy Comprehensive Evaluation(FCE) is used to make a

general evaluation of things or objects constrained by many factors, with clear and systematic results. FCE can be used to solve the problem of Tea-Tourism Integration effect evaluation which is difficult to quantify. The use of Delphi method to send anonymous inquiry to relevant experts in the field of Tea-Tourism Integration plays an important role in the construction of the evaluation index system of Tea-Tourism Integration effect of Wujiatai Village.

### 3.2 Data Sources

Take to local office, tea company, tea farmers of the village, tourists in the scenic area to carry out questionnaire survey method to obtain. The questionnaire was administered in both field and online formats, with 508 questionnaires, of which 496 were recovered and 24 invalid questionnaires were excluded, for a total of 472 valid questionnaires with an effective recovery rate of 92.91%.

### 3.3 Construction of the Evaluation Index System of Tea-Tourism Integration Effect of Wujiatai Village

Based on the relevant documents on rural industry integration and tourism development in Hubei Province, the preliminary research foundation of rural revitalization evaluation index system, the principles of comprehensiveness, hierarchy, science and data availability were followed. The 3 indexes at the Criterion Level and 10 indexes at the Scheme Level were finalized after a selection and refinement of indexes in consultation with experts, as detailed in table 1. By means of Delphi method, we provided questionnaire to relevant experts. The 12 expert scores were statistically processed by pairwise comparison of factors in the same layer combined with Saaty scale 1-9. Finally, the judgment matrices A-B, B1-C, B2-C and B3-C are obtained. The judgment matrix is calculated and the corresponding index weight is obtained. The weights of the Criterion Layer and the Scheme Layer are the ranking weights of the elements in the Criterion Layer and the Scheme Layer respectively, as shown in table 1. A power method was used to detect basic consistency with a concordance index of  $0.0772 < 0.1$ , which is acceptable for judging matrix consistency.

### 3.4 Tea-Tourism Integration Effect of Wujiatai Village Evaluation

The 10 indexes in the C layer of the evaluation system were used as elements of the Factor Set. Defines Factor Set as:  $U = \{U_1, U_2, \dots, U_n\} (n = 10)$ . According to the current situation of Tea-Tourism Integration in Wujiatai Village, the evaluation results were divided into five grades. Defines Evaluation Set as:  $V = \{\text{Excellent, Good, Average, Relatively Poor, Poor}\}$ . Among them, the "Excellent" grades correspond to a range of  $[4,5]$ , the "Good" grades correspond to a range of  $[3,4)$ , the "Average" grades correspond to a range of  $[2,3)$ , the "Relatively Poor" grades correspond to a range of  $[1,2)$ , and the "Poor" grades correspond to a range of  $[0,1)$ . The weight of the evaluation index is used as the Weight Set. Defines Weight Set as:  $A = \{A_1, A_2, \dots, A_n\} (n = 10)$ .

According to the weight of the evaluation index, the evaluation table is created, the raw data is collected and collated, and the data are processed according to the weight of the index to form the evaluation result, as detailed in Table 1.

Table 1. The Evaluation Index System of Tea-Tourism Integration Effect of Wujiatai Village

Target Layer (Value)	Criterion Layer (Weight)	Criterion Layer (Value)	Scheme Layer (Weight)	Scheme Layer (Value)	Description of Indexes
The	Economic Benefits	3.4418	Tribute Tea Sales C1	3.3871	Tribute Tea Market Sales
Evaluation	B1		(0.2173)		
Index	(0.4958)		Tourism Output Value C2	3.8387	The Output Value of the Tertiary Industry Around the Scenic Spot
System			(0.0995)		
of			Completeness Degree of Industrial Chain C3	3.2581	The Extension Degree of the Industry Chain of Tea-Tourism Integration
Tea-			(0.0977)		
Tourism			Scientific and Technological Innovation Intensity C4	3.3226	The Level of Innovation in Industrial Integration
Integration			(0.0812)		
Effect	Social Benefits	3.5435	Tribute Tea Culture Inheritance C5	3.7419	Tribute Tea Culture Intergenerational Inheritance
of	B2		(0.0778)		
Wujiatai	(0.1932)		Degree of Infrastructure Construction C6	3.5161	Transportation and Other Infrastructure Construction
Village			(0.0418)		
A			Construction of Talent Team C7	3.2581	The Construction of Tea-Tourism Integration Talent Team
(3.4799)			(0.0439)		
			Job Growth C8	3.4839	The Ability of Industrial Integration to Create Jobs
			(0.0296)		
	Ecological	3.5012	Ecological Consciousness of Villagers C9	3.5161	Local Villagers' Awareness of Ecological Protection
	Benefits		(0.1675)		
	B3		Ecological Environment of Tea Garden C10	3.4839	Ecological Environment Protection of Tea Planting Area
	(0.3111)		(0.1436)		

## 4. Result and Analysis

### 4.1 The Rank Membership of Tea-Tourism Integration Effect of Wujiatai Village Evaluation

According to the degree of rank membership of the evaluation, the overall membership of the Tea-Tourism Integration Effect of Wujiatai Village was 0.3222, which is a "Average" level. From the A-B ranking, the most important index affecting the Tea-Tourism Integration Effect of Wujiatai

Village was Social Benefits, reflecting the Tribute Tea Culture Inheritance, Degree of Infrastructure Construction, Construction of Talent Team and Job Growth are important achievements of the local Tea-Tourism Integration development strategy. According to the overall ranking, Tourism Output Value and Tribute Tea Culture Inheritance are in the top two, reflecting that the development of local tourism and Tribute Tea Culture Inheritance of Wujiat'ai Village are the key factors and important indexes that affect the Tea-Tourism Integration Effect of Wujiat'ai Village, which needs for continuous maintenance and improvement. Tribute Tea Sales, Scientific and Technological Innovation Intensity, Construction of Talent Team and Completeness Degree of Industrial Chain are the important factors restricting the further high-quality development of the Tea-Tourism Integration of Wujiat'ai Village, which needs to be further improved.

#### **4.2 Major Problems and Coping Strategies in Tea-Tourism Integration of Wujiat'ai Village**

Tribute Tea has overcapacity and weak sales. More than half of Tribute Tea production is sold to international markets. In the current global pandemic situation is not optimistic overall situation, Tribute Tea in Wujiat'ai Village may face weak demand for tea in the international market, and the Chinese market in a short time to develop ineffectively sales bottlenecks. They should strengthen quality control and expand market space. Take advantage of low agricultural handicaps to gain export rights and further consolidate international markets in Europe, Africa and the Middle East. Deepen tea export cooperation, expand market development space and seek new growth points in the global situation.

The industry chain of Tea-Tourism Integration has huge extension space, and development level of related product needs to be improved. The industry chain of Tea-Tourism Integration of Wujiat'ai Village is relatively simple. Extend the tea industry chain and promote deep integration. Carry out a series of tea tourism integration projects, such as tea picking, processing, tea sales and tea art displays, and establish a brand development system for tea tourism integration projects, with a focus on creating Wujiat'ai Tribute Tea characteristic villages and high-end recreation bases, so as to improve the overall benefits of Tea-Tourism Integration. Consolidate and improve the benefit linkage mechanism of "leading enterprises + micro-enterprises + farmers" so as to promote the construction of people's livelihood and increase farmers' income.

Scientific and technological innovation intensity is weak, and the construction of Tea-Tourism Integration talent team needs to be strengthened. At present, there are few professional researchers and institutions of tea culture in Wujiat'ai Village, and the exploration and research on the tourism resources of Tribute Tea culture with regional characteristics are insufficient. Tourism practitioners in the main tea producing areas have a low degree of introduction and promotion of Wujiat'ai Tribute Tea culture, and there is a large space for tourists to improve their spiritual experience. Strengthen the support of talented people and give full play to technological advantages. On the basis of close cooperation with agricultural research institutions and agriculture-related universities, build specialized Tribute Tea research institutions and strengthen the exploration and research of Tribute Tea and related cultural tourism resources with regional characteristics.

### **5. Conclusion**

By using the Analytic Hierarchy Process(AHP), Fuzzy Comprehensive Evaluation(FCE) and Delphi method, set up the evaluation index system of Tea-Tourism Integration effect of Wujiat'ai Village, and conduct the empirical research, drawing the following conclusions: (1) The overall membership of the Tea-Tourism Integration Effect of Wujiat'ai Village was 0.3222, which is a "Average" level. (2) Tourism Output Value and Tribute Tea Culture Inheritance are in the top two, reflecting that the development of local tourism and Tribute Tea Culture Inheritance of Wujiat'ai Village are the key factors and important indexes that affect the Tea-Tourism Integration Effect of Wujiat'ai Village, which needs for continuous maintenance and improvement. (3) Tribute Tea Sales, Scientific and Technological Innovation Intensity, Construction of Talent Team and Completeness

Degree of Industrial Chain are the important factors restricting the further high-quality development of the Tea-Tourism Integration of Wujiatai Village, which needs to be further improved.

Tea-Tourism Integration is an important practice on the road of rural revitalization in ethnic areas. It is based on tea cultivation, tea processing and tea tourism to achieve three industries deep integration, can effectively promote industrial restructuring optimization, promote local people to increase production and income, with strong development momentum and vitality. It is of high theoretical and practical significance to evaluate the Tea-Tourism Integration Effect of Wujiatai Village. This study evaluates the Tea-Tourism Integration Effect of Wujiatai Village from three aspects: economic benefit, social benefit and ecological benefit. However, due to the developmental and dynamic of the effectiveness evaluation, current effectiveness evaluation still has some shortcomings. Further studies should reinforce in the selection of indexes and the weakening of subjective factors, and the revitalization of villages in ethnic areas should be improved from the perspective of Tea-Tourism Integration.

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