

# Research on the Resilience Evaluation and Influencing Factors of Rural Areas in Counties of Anhui Province

Jawen Xu\*, Meiqi Liu, Hongjiong Shang

School of Management Science and Engineering, Anhui University of Finance and Economics,  
Bengbu, China

\*3461369898@qq.com

## Abstract

In recent years, research on rural resilience has become a hotspot due to the intensifying impacts of climate change and the promotion of rural revitalization strategies. Anhui Province, as a major agricultural province frequently affected by disasters and characterized by significant urban-rural disparities, holds great value in assessing county-level resilience and exploring its driving factors to identify vulnerabilities, optimize disaster response strategies, and promote sustainable development. This paper focuses on ten rural counties in Anhui Province, using multi-source data from 2014 to 2023 to construct a rural resilience evaluation system across ecological, economic, social, and governance dimensions, systematically assessing the level of rural resilience. A geographical detector model is employed to analyze the influencing factors and their mechanisms of action. The results indicate that the overall level of rural resilience in the study area is relatively low, with a comprehensive score ranging from 0.3 to 0.5, among which Changfeng County shows a higher level of rural resilience. The formation of rural resilience is influenced by multiple factors, with economic strength and market size having significant impacts. Based on the current state of rural development in the study area, this paper proposes effective suggestions and strategies for enhancing rural resilience targeted at the shortcomings and key influencing factors of rural resilience in various counties, integrating the five revitalization pillars: industry, talent, organization.

## Keywords

Rural Resilience; Sustainable Development; Evaluation System; Geographical Detector Model.

## 1. Introduction

Under the joint impact of global climate change and rapid urbanization, rural systems face multiple challenges such as increasing disaster risks, imbalanced demographic structures, and fragile economic foundations. Enhancing rural resilience has become a core issue for achieving sustainable development goals. As a major agricultural province and a typical disaster-risk area, Anhui Province exhibits significant imbalances in county-level rural development. In northern Anhui, there are issues of resource constraints and economic stagnation, while southern Anhui experiences prominent ecological and livelihood conflicts, presenting a dual characteristic of "northern stagnation and southern difficulties." The disparity in urban-rural infrastructure and public services exacerbates vulnerability. Therefore, accurately measuring the level of rural resilience using scientific methods and analyzing its influencing factors is crucial to accelerating the implementation of rural revitalization strategies.

The initial meaning of resilience refers to the action of bouncing back to a original state. It later began to describe a system's ability to return to its initial state after experiencing disturbances

and pressures[1]. In the 1970s, Canadian ecologist Holling first introduced the concept of resilience to the field of ecology, defining it as the ability of a system to withstand disruptions while maintaining its functions and controls[2-4]. Since then, research on resilience has gradually expanded from ecology to socio-ecological systems[5]. The concept of resilience continues to evolve, becoming increasingly rich in meaning. Rural resilience emphasizes the ability of rural areas to rely on the adjustments and adaptations of multiple core subsystems to absorb disturbances and impacts, thereby maintaining their functions and levels of development without change, and avoiding instability or even collapse of the system[6-9]. This offers new ideas and directions for rural adaptation to external environmental changes and internal transformations while maintaining stability from a dynamic and developmental perspective.

In recent years, there has been increasing attention on the evaluation of rural resilience levels and their influencing factors. Scholars have approached this research from various angles. For instance, Zhu Jinlong and Fu Jia[10] considered the resilience of rural ecological, social, economic, and cultural systems, assessing the rural resilience levels of 61 county-level units in Anhui Province in 2020, and employed a geographically weighted regression model to analyze the influencing factors. From a nationwide perspective, Wang Caili [11] constructed a resilience assessment framework based on the four dimensions of 'economic - social- ecological - engineering', pointing out the development trends, regional disparities, and key constraints of rural resilience levels in China. After reviewing domestic and international literature, it was discovered that although many studies have achieved certain results in resilience evaluation, there are still shortcomings. For instance, existing research tends to focus on the macro level, lacking in-depth studies on rural resilience at the county level, and the analysis of the influencing factors on rural resilience is not comprehensive enough, failing to fully consider the combined effects of multi-dimensional factors such as economic, social, and ecological aspects. Therefore, this paper selects the period from 2014 to 2023 for research and chooses ten counties in Anhui Province as the research subjects based on the concept of rural resilience. It constructs a rural resilience evaluation system that encompasses "ecological foundation - economic support - social bonds - governance assurance" to systematically assess rural resilience. Additionally, it analyzes the real dilemmas faced by the research region and the emerging demands in the new era, exploring the dominant factors and influences affecting the counties' rural areas in terms of their resilience and adaptability. It proposes targeted suggestions and rectification strategies, aiming to explore pathways for rural revitalization that can better withstand and adapt to future environmental disturbances, providing scientific basis and policy recommendations for the implementation of Anhui Province's rural revitalization strategy and sustainable development strategy.

## 2. Overview of the Research Area

This paper selects ten counties in Anhui Province, including Dongzhi County, Fengtai County, Shouxian County, Dangtu County, Laian County, Shexian County, Suixi County, Dangshan County, Langxi County, and Changfeng County. The selected areas are distributed across the northern, central, and southern regions of Anhui. As shown in the diagram, all counties except Shexian are characterized by low elevations and flat terrain.

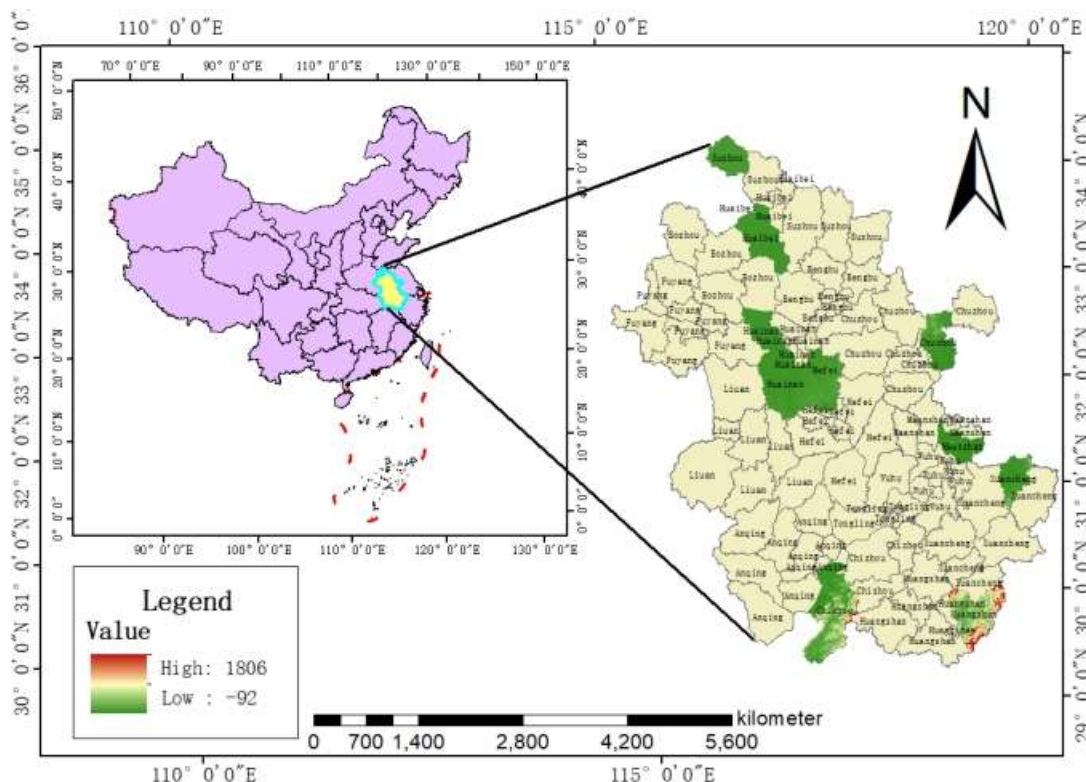


Figure 1. Overview of the Research Area

### 3. Research Methods and Theoretical Foundations

#### 3.1. Data Sources and Processing

The basic data is sourced from the "Statistical Yearbook of Chinese Counties" and the "Statistical Yearbook of Anhui Province." The demographic data concerning terrain elevation is obtained through the Geospatial Data Cloud website and the report from the seventh national population census.

#### 3.2. Research Methods

##### 3.2.1. Entropy Method

The entropy method is an objective and scientific evaluation approach. By calculating the entropy values of the indicator data using the entropy method, it effectively eliminates the interference of subjective factors, thereby enhancing the objectivity and accuracy of the evaluation results. In the resilience assessment of rural areas, the use of the entropy method can mitigate the influence of subjective perceptions on the resilience evaluation outcomes, allowing for scientifically reliable weight calculations for the selected indicators.

Calculate the weight  $p_{ij}$  of the  $j$ -th indicator value for the  $i$ -th evaluation unit.

$$p_{ij} = \frac{Y'_{ij}}{\sum_{i=1}^m Y'_{ij}}$$

Calculate the entropy value  $e_j$  of the  $j$ -th index:

$$e_j = -k \sum_{i=1}^m p_{ij} \ln p_{ij}$$

$$k = \frac{1}{\ln m}$$

In the equation,  $k > 0$ ;  $m$  represents the total number of research units, and  $0 \leq e_j < 1$ . The coefficient of difference  $d_j$  for the  $j$ th indicator is calculated

$$d_j = 1 - e_j$$

Calculate the weight  $w_j$  of the  $j$ -th term.

$$w_j = \frac{d_j}{\sum_{j=1}^n d_j}$$

### 3.2.2. Comprehensive Evaluation Model

The Calculation of the Comprehensive Resilience Index for Rural Areas

$$H_j = \sum_{j=1}^n w_j Y'_{ij}$$

In the formula,  $H_j$  represents the comprehensive evaluation index of rural resilience for each research unit,  $Y_{ij}$  denotes the standardized value of the  $j$ th indicator for the  $i$ th evaluation unit within the research area, and  $w_j$  indicates the weight of the  $j$ th indicator.

### 3.2.3. Geographic Detection Model

The Geographic Detector is a tool used to analyze spatial differentiation characteristics and their driving factors. Through modeling detection, it can reveal the spatial heterogeneity of geographic phenomena and the underlying influencing factors. After measurement, the  $q$  value reflects the explanatory power of each influencing factor on the spatial differentiation of geographic phenomena, determining the degree of influence exerted by the factors on the research objects. Its formula is shown as follows.

$$q = 1 - \frac{\sum_{h=1}^L M_h \sigma_h^2}{N \sigma^2}$$

In the formula,  $N_h$  denotes the number of samples at layer  $h$ ;  $\sigma_h^2$  represents the variance at layer  $h$ ;  $N$  indicates the total number of samples;  $\sigma^2$  denotes the overall variance. The range of  $q$  values is:  $0 \leq q \leq 1$ . A higher  $q$  value indicates a stronger explanatory power of the factor concerning the geographical phenomenon.

## 3.3. Theoretical Foundation

This article establishes a rural resilience evaluation system based on four dimensions: ecology, economy, society, and governance. The theoretical basis is both comprehensive and scientifically sound. At the ecological level, rural ecological resilience primarily reflects the ability of the ecosystem to adapt to various disturbances. Research by scholars such as Wang Run suggests that the level of ecological risk and the ecological system foundation are two key aspects of rural resilience evaluation[12]. At the economic level, rural economic resilience focuses on the stability and adaptability of the economic system, involving aspects such as

industrial layout, per capita income, and sustainable economic development. A quantitative assessment framework constructed by scholars like Wang Yongzheng demonstrates that the economic dimension is a crucial aspect of rural resilience[13]. From a social perspective, rural social resilience mainly encompasses social structure, social organization, social security, and public services. Research by Wang Weiran and Du Haifeng indicates that the interaction among villager resilience, grassroots organizational resilience, and social resilience forms the core elements of rural social resilience. In terms of governance, rural governance resilience emphasizes governance structure, capacity, and effectiveness[14]. The theory of 'controllable resilient governance' proposed by Tang Huangfeng and Wang Hao provides robust theoretical support for rural governance resilience[15]. In conclusion, the evaluation system constructed from these four dimensions can comprehensively reflect the adaptive capacity of rural systems when facing internal and external disturbances, thereby establishing a scientific and comprehensive theoretical framework for rural resilience evaluation.

The Geographical Detector Model is a statistical tool used to detect spatial differentiation. Through four major modules of differentiation and factor detection, interaction detection, risk zone detection, and ecological detection, it provides a systematic framework for analyzing the complex mechanisms affecting rural resilience. In the study conducted in the Qinba Mountain area of southern Shaanxi, land use and cultural education have been identified as the dominant factors of resilience differentiation, while the influence of ecological factors such as vegetation coverage is gradually weakening. This finding highlights the differences in the dominant driving mechanisms of rural resilience across different geographical units, correcting the one-size-fits-all assumption in traditional resilience research and promoting a shift in resilience theory from static descriptions to dynamic spatial explanations [16].

## **4. Construction and Measurement of Rural Resilience Indicator System**

### **4.1. Establishing a Resilience Evaluation Index System for Rural Areas**

The indicator system constructed in this paper is based on four core dimensions: ecological resilience, economic resilience, social resilience, and governance resilience. The selected indicators possess scientific validity, operability, and dynamic adaptability, enabling a comprehensive and systematic capture of the complex characteristics of rural systems. In the dimension of ecological resilience, indicators such as the area of land undergoing soil and water conservation, the area of arable land, and the area of afforestation are chosen to assess the adaptability of rural ecosystems to ecological disturbances. In the dimension of economic resilience, indicators like gross domestic product, per capita disposable income of rural residents, and the total output value of agriculture, forestry, animal husbandry, and fishery are selected to measure the stability and development potential of the rural economic system. In the dimension of social resilience, indicators such as the rural population, the number of employees in rural areas, and the area affected by agricultural disasters reflect the stability and disaster-resistance capability of the rural social system. Lastly, in the dimension of governance resilience, indicators such as local fiscal revenue and the number of village committees are selected to evaluate the organizational and management capabilities of the rural governance system.

The weight results of each indicator calculated using the entropy weighting method are shown in Table 1:

**Table 1.** Comprehensive Evaluation Index System and Weights for Rural Resilience

Standards Level	Element layer	Indicator Level	Effect	Weight
Ecological resilience	Ecological pressure	Area of soil and water conservation measures	Positive	0.1358
	Ecological substrate	Cultivated land area	Negative	0.0340
	Ecological Restoration	Area of artificial afforestation	Positive	0.0675
Economic Resilience	Economic foundation	Gross Domestic Product	Positive	0.1588
	Economic Security	Per capita disposable income of rural residents.	Positive	0.1041
	Economic potential	Total output value of agriculture, forestry, animal husbandry, and fishery.	Positive	0.1303
Social Resilience	Population pressure	Rural population count	Negative	0.0272
	Social Security	Number of workforce in rural areas	Positive	0.0928
	Current Situation of Disaster	Area of Crops Affected by Disaster	Negative	0.0219
Governance Resilience	Organizational ability	Local fiscal revenue	Positive	0.1204
	Management capabilities	Number of village committees	Positive	0.1073

From Table 3-4, it can be seen that among the various evaluation indicators, the one with the highest weight is the Gross Domestic Product (GDP) index, which reflects the scale and output level of agricultural production, including the total output of various agricultural industries such as crops, livestock, and fisheries. In the evaluation of rural resilience, the stability of the economic foundation indicates that rural areas can more efficiently rationalize the allocation of resources, signifying the system's enhanced ability to withstand external changes and pressures, which is key to improving rural resilience.

**4.2. Evaluation Results and Analysis of Rural Resilience**

Based on the rural resilience evaluation index system, the comprehensive evaluation model calculates the rural resilience levels and their changes in ten selected research areas from 2014 to 2023. A higher composite index indicates a higher level of resilience.

The results are shown in Figure 2.

Based on the analysis of the aforementioned chart, it can be observed that from 2014 to 2023, the overall resilience levels of rural areas within the study region have shown a steady upward trend. This indicates an improvement in the adaptability and recovery capacity of rural communities when faced with various challenges. The data table reveals that Changfeng County has the highest average composite index, signifying that its rural resilience level is at its peak. The trend chart shows that during the period covered by the study, resilience indicators in the region experienced remarkable growth. Recently, the county has implemented a series of effective strategies and measures in rural development planning, ecological environment protection, economic development, and social governance. Langxi County initially displayed comparatively low rural resilience levels; however, as time progressed, its rural resilience index increased annually, gradually approaching the average level. In the later stages, Langxi County likely continued to explore new policies and directions, leading to certain achievements in enhancing its adaptability. On the other hand, the rural resilience level in Danyang County experienced a notable decline between 2017 and 2018, yet stabilized thereafter without

significant fluctuations. During the 2017-2018 period, Danyang County may have faced issues such as natural disasters and economic fluctuations, resulting in decreased resilience levels. However, post-2018, the county may have adopted corresponding recovery measures, allowing its resilience levels to stabilize.

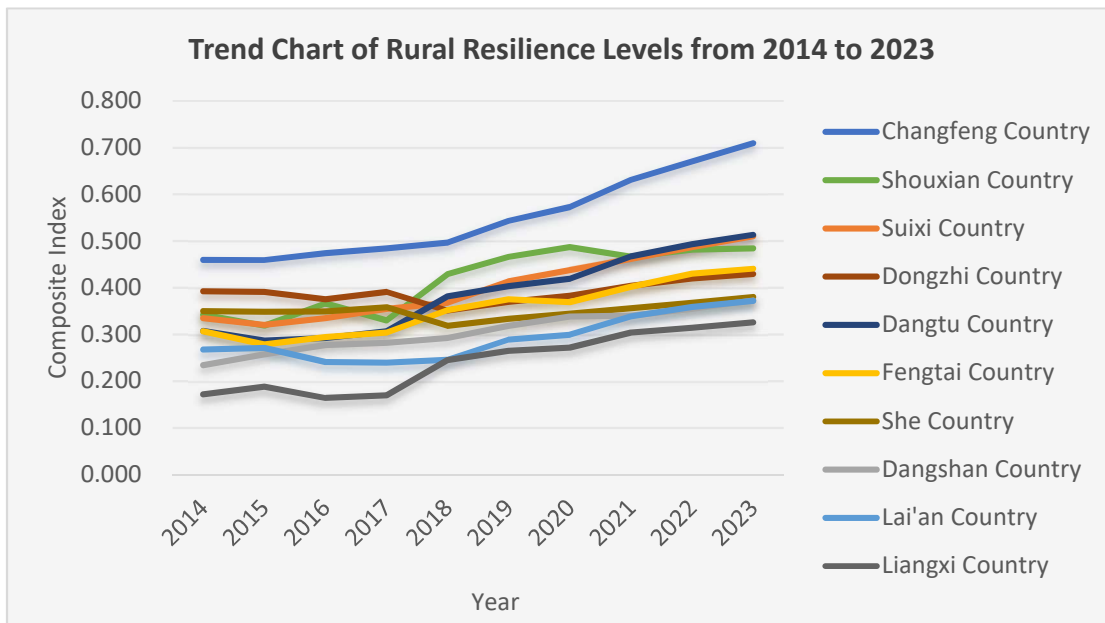


Figure 2. Trend Graph of the Comprehensive Resilience Index of Rural Areas

## 5. Research on the Factors Influencing Rural Resilience

### 5.1. Selection and Management of Influencing Factors

The resilient development of rural areas is influenced by multiple dimensions and factors. Based on the aforementioned research, the comprehensive index of rural resilience development levels in various counties from 2014 to 2023 is designated as the dependent variable Y. The first industry added value, fiscal expenditure, and total retail sales of consumer goods in the research counties for the year 2023 are taken as the independent variables X1, X2, and X3, respectively exploring the industry, government, and market aspects. In order to eliminate the impact of the classification levels of independent variables on factor exploration, the selected three indicators were reclassified using the natural breaks method in ArcGIS 10.5 software, categorized into five levels according to their respective distribution intervals, and the processed data were subsequently imported into GeoDetector for exploratory analysis.

### 5.2. Factor Detection Results and Analysis

The factor detection results obtained through the Geographic Detector are shown in Table 2. The factors can be ranked according to their influence based on the values of q. The detection results indicate that the three selected driving factors have varying degrees of influence on rural resilience, ranked from highest to lowest as follows: X1 (Added Value of the Primary Industry) > X2 (Fiscal Expenditure) > X3 (Total Retail Sales of Consumer Goods).

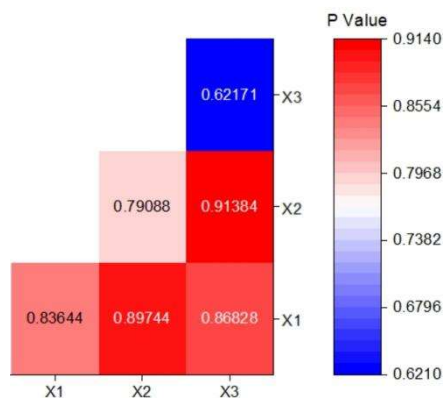
Table 2. Factor Detection Results

Factors	Indicator	Detection factor	q value
Industrial factors	Value added in the primary industry	X1	0.836439
Government factors	Fiscal expenditure	X2	0.790876
Market factors	Total retail sales of consumer goods	X3	0.621705

Through comprehensive analysis, it is observed that the level of rural resilience within the study scope is most significantly influenced by industrial factors. However, at the same time, rural resilience is also constrained to a certain extent by the level of financial support for agriculture and the level of social consumption.

### 5.3. Results and Analysis of Interactive Detection

The results of the interaction detection are illustrated in Figure 3.



**Figure 3.** Results of Interaction Detection

Based on the results of factor detection, combined with interactive detection, it is evident that the interaction of dual factors is significantly stronger than that of single factors. This reveals that the differences in resilience levels among rural areas in various counties are the result of the synergistic effects of multiple factors. The order of interactive influence of the selected driving factors from highest to lowest is as follows:  $X2 \cap X3$  (0.91384) >  $X1 \cap X2$  (0.89744) >  $X1 \cap X3$  (0.86828). Among these, the interaction between fiscal expenditure and total retail sales of consumer goods has the strongest influence, indicating that enhancing the government's economic support for rural development and the level of social consumption is crucial for improving the resilience levels of rural areas in counties within Anhui Province. Improving the infrastructure and public service provisions in rural areas, expanding the rural consumption market, and promoting the coordinated development of rural industries can effectively enhance the adaptability, competitiveness, and resilience of rural areas.

## 6. Conclusion and Suggestions

### 6.1. Conclusion

From the comprehensive assessment results, the overall level of rural resilience is still at a relatively low stage, with a comprehensive score ranging between 0.3 and 0.5. This reflects that rural areas need to improve their integrated response capabilities across multiple dimensions, including ecological, social, economic, and governance aspects, when facing various internal and external shocks and challenges. There is still a significant distance to achieving a relatively complete and efficient resilience system.

From the analysis of dynamic trend results, the overall level of rural resilience is showing an upward trend. This indicates that in recent years, various counties have promoted rural development through a series of policy measures, resource investments, and the stimulation of rural self-development momentum. As a result, rural areas are gradually accumulating the capacity to respond to risks and promote sustainable development, moving towards a more resilient direction, and exhibiting positive development prospects and potential.

From the perspective of the influencing factors detected, the single-factor effect of the primary industry added value cannot be overlooked. As the foundation of the rural economy, agricultural production plays a core supporting role in building rural resilience. The stable development of the primary industry can provide a stable source of economic income for rural areas, ensuring the basic livelihood of farmers while maintaining the ecological functions and social structure stability of the countryside, which forms the cornerstone for rural areas to withstand risks and achieve sustainable development. Furthermore, the interaction between economic strength and market scale has a crucial impact on the level of rural resilience, reflecting the importance of economic diversification and market vitality in enhancing resilience. Rural areas with strong economic strength can attract more resource investment, optimize industrial structures, and improve infrastructure levels; meanwhile, a broad market scale provides space for the sale of rural products and industrial development, enhancing the economic resistance and self-repair capabilities of rural areas. These two elements interact and promote each other, jointly driving the improvement of the level of rural resilience.

In summary, although the resilience of rural areas in counties of Anhui Province is at a relatively low level, the development trend is positive, and key influencing factors have been initially identified. In the future, efforts should continue to strengthen the foundation of the primary industry, promote agricultural modernization and high-quality development, and increase policy support and resource integration aimed at enhancing rural economic strength and expanding market size. This will facilitate the coordinated action of various factors and accelerate the construction of rural resilience, aiding in the comprehensive revitalization of rural areas in Anhui Province. It will lay a solid foundation for the sustainable development of the rural economy and society, enhancing adaptability and resilience in response to various complex and changing internal and external environments, thereby providing valuable experience and insights for the development of rural resilience both in the province and nationwide.

## 6.2. Suggestions

Considering the research framework and the current development situation of rural areas in the counties of Anhui Province, this study proposes the following relevant suggestions and strategies, combining the five major revitalization concepts of industry, talent, organization, culture, and ecology, in order to achieve the sustainable development goals of rural areas in the counties of Anhui Province.

(1) Increasing financial support and optimizing resource allocation mechanisms are key strategies for achieving sustainable development and improving efficiency. The government should strengthen fiscal support and continuously optimize the overall development environment in rural areas, particularly by increasing investments in infrastructure sectors such as transportation networks, water resource management, and communication technology to enhance the quality of life and production efficiency for residents. This is essential for achieving the comprehensive and balanced objectives of the rural revitalization strategy. Policymakers must focus on optimizing the effectiveness of public services by increasing investment and reform efforts in critical areas of social welfare, such as rural education and healthcare, to improve the coverage and quality of services. Moreover, leveraging fiscal subsidies and tax incentives to promote the revitalization and growth of the rural economy is crucial. Special emphasis should be placed on supporting the development of unique rural industries and cultivating emerging business formats to introduce sustainable new driving forces for the rural economy, thereby advancing the optimization and upgrading of consumption structure.

(2) Stimulate the inherent vitality and growth potential of the market by implementing strategies to increase farmers' disposable income and improve the rural consumption

ecosystem, thereby promoting the upgrade of rural consumption structures and enhancing domestic demand momentum. Focus on strengthening the training of e-commerce talents in rural areas, actively promote the online sales of agricultural products, expand the circulation channels and sales networks for agricultural products, and continuously monitor the dynamics of the integration and development of rural primary, secondary, and tertiary industries, along with their related policy directions. Construct industry chain models such as 'agriculture at the forefront, industry at the tail' and 'grain at the forefront, food at the tail,' to increase the overall value of the industry chain, reinforce the inherent driving force of the rural economy and its sustainable development capability, and enhance the construction of rural talent teams to improve governance effectiveness and comprehensive quality.

(3) Leverage the systematic implementation of new vocational farmer training programs to enhance farmers' overall quality and professional capabilities from multiple dimensions such as agricultural technology application and production management. This provides talent assurance and intellectual support for the implementation of rural revitalization strategies. Based on policy execution, it encourages groups such as college graduates and veterans to return home and start businesses, forming a rural talent team with professional skills and rich experience.

## Acknowledgments

This work is supported by Anhui University of Finance and Economics Student Research and Innovation Fund Project (Grant No: XSKY25147).

## References

- [1] Mai Xin, Tao Wei, Liu Wangbao. Review of Domestic and International Research on Rural Resilience. *Human Geography*, 2023, 38(2): 28-34.
- [2] Holling C. S. Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics*, 1973, 4: 1-23.
- [3] Sun Jing, Wang Jun, Yang Xinjun. A review of research on the resilience of social-ecological systems. *Acta Ecologica Sinica*, 2007, 27(12): 5371-5381.
- [4] Yan Haiming, Zhan Jinyan, Zhang Tao. Overview of Research Progress on Ecosystem Resilience. *Progress in Geographical Sciences*, 2012, 31(3): 303-314.
- [5] Fang Yudong, Wang Wen, Zhang Zhi, et al. Research on Disaster Prevention and Mitigation Development Strategies for Safe Resilient Cities [J]. *China Engineering Science*, 2023, 25(01): 1-9.
- [6] Liu Yansui, Zhou Yang, Li Yuheng. China's Rural Regional System and Rural Revitalization Strategy. *Geographical Journal*, 2019, 74(12): 2511-2528.
- [7] Wu Chuanjun. On the Core of Geographic Research: Human-Environment Relationship Regional System. *Economic Geography*, 1991, 11(3): 1-6.
- [8] Hoggart K, Panagiotopoulos A. What is rural restructuring? *Journal of Rural Studies*, 2001, 17(1): 41-62.
- [9] Li Yuheng, Huang Huiaqian, Song Chuanyao. Research on the Economic Resilience of Rural Areas in Impoverished Regions and Its Implications -- A Case Study of Yangyuan County, Hebei Province. *Advances in Geographical Sciences*, 2021, 40(11): 1839-1846.
- [10] Chu Jinlong, Fu Jia. Study on the Evaluation of Rural Resilience and Influencing Factors in County-level Areas of Anhui Province [J]. *Journal of Huaiyin Institute of Technology*, 2022, 31 (03): 65-73.
- [11] Wang Caili, Yan Xuxian. The Evolution of Spatial-Temporal Patterns of Urban Resilience in the Chengdu-Chongqing Urban Agglomeration and Identification of Obstacle Factors. *Journal of Chongqing University: Social Sciences Edition*, 2023, 29(3): 21-33.
- [12] Wang Run, Wei Qimeng, Pan Xiaomin, Du Yang, Long Fei. Research on the Evaluation of Rural Ecological Resilience and Capacity Building. *Ecological Economy*, 2025, 41 (04): 206-214.

- [13] Wang Yongzheng, Wang Mengru, Huang Chuang, Yu Haoran. Research on the Temporal and Spatial Evolution of Rural Economic Resilience in the Hefei Urban Agglomeration and Its Enhancement Paths. *Journal of Anhui University of Technology (Social Sciences Edition)*, 2025, :1-15.
- [14] Wang Weiran, Du Haifeng. A Comparative Study of Rural Resilience Based on Multiple Governance Actors [J]. *Public Administration Review*, 2021, 14 (04): 4-24196.
- [15] Tang Huangfeng, Wang Hao. Controllable Resilient Governance: Model Selection for Modernization of Grassroots Governance in the New Era. *Exploration and Controversy*, 2019, (12): 53-62 158.
- [16] Bai Yuling, Chen Jia, Yin Sha, et al. The Evolution of Rural Resilience and its Influencing Factors in Poverty Alleviation Areas under the Background of Rural Revitalization -- A Case Study of the Qinba Mountainous Area in Southern Shaanxi. *Ecological Sciences*, 2024, 44(19):8798-8811.