

Rural Development

Subjects: **Public Administration**

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The development of rural areas is a significant component in social and economic activities. It is very important for optimizing the allocation of rural production and living factors, promoting the integration of urban and rural areas and sustainable development to identify the characteristics and main types of regional rural development.

rural development level

regional function

type recognition

development path

enclave area

Jingyuan County

1. Introduction

The evaluation of rural development level is a re-cognition of the process of production development, environmental improvement, and cultural inheritance in the specific rural regional system ^[1]. The core of rural geography research from an international perspective is rurality ^[2]. Cloke et al. first proposed to measure the state of rural development in a region through rurality ^{[2][3][4]}. Based on recent advances in rural geography, Woods et al. proposed that rurality is a rural “character” experienced and expressed by rural residents and immigrants, farmers, landowners, workers, travelers, leisure tourists, policymakers, media, and academic researchers ^{[5][6]}. From the perspective of the evolution of the theory of rural studies, the rural areas have experienced the transformation from the functional perspective to the political and economic perspective and the social construction perspective ^{[2][3][4][5][6]}. In the functional perspective of the 1970s, rural space was determined by rural functional characteristics. From the perspective of political economy in the 1980s, rural areas were defined as the product of social, economic, and political processes. From the perspective of social construction in the 1990s, it is proposed that rurality should be reflected in the social, cultural, and moral values of rural areas ^[7]. Since the 21st century, the perspective of rural studies has gradually shifted to “cultural ecology”, and the proposal of the “Triple space model of rural” has further expanded the theoretical horizon of rural studies ^{[1][8]}.

The rural regional system is a rural spatial system with a certain structure, function, and interregional connection under the mutual connection and interaction of humanities, economy, resources, and environment ^{[4][9]}. From the current research on rural development, the themes focus on rural connotation and rurality ^{[3][10][11]}, rural development type classification ^{[12][13][14][15]}, rurality evaluation ^{[16][17][18][19]}, rural transformation and reconstruction ^{[14][15][20]}, rural construction, and revitalization ^{[1][8]}. Halfacree et al. elaborated the specific connotation of rural in four dimensions: the descriptive definition, the socio-cultural definition, the rural as geographical area, and the rural as the social representation reproduction ^[21]. Woods proposed that the formation and evolution of rural areas can be explained appropriately only by taking rural areas as the representation of society ^[6], and the differences

between small towns in rural areas, outskirts of new cities, peripheral communities of cities, and urban-rural fringe areas can be compared. Liu Yansui et al. explored rural development from different perspectives, scales, and spaces in China from the aspects of the rural regional system [22][23][24], rural development types and evaluation [13][14], rural transformation and reconstruction [8][15][25], rural revitalization theory and methods, land use renovation, and transformation [20][26].

The research content mainly focuses on the evaluation of rurality and the analysis of influencing factors, while the measurement of the rural development level within the micro unit is less. The existing research mainly focuses on the identification of rural development types [27][28], the construction of rural evaluation indicators [18][23][29], the spatial and temporal differentiation characteristics of rurality [10][30][31], and the evaluation of rural development and transformation. Zhang Xiaolin et al. conducted a long-term exploration on the interpretation of the concept, classification, evaluation method, and index system of rurality, evaluated the rurality of different scales and regions in Jiangsu Province, and explored the evolution and influence mechanism of the rural spatial pattern [32][33][34]. From the perspective of research methods, qualitative methods have long dominated. It mainly includes semi-structured interviews, focus groups, ethnography and participant observation, and literature analysis. Qualitative methods are widely used in British rural research [35][36][37]. Quantitative methods are widely used in the United States, Europe, Australia, China, and other regions [18][27][38][39][40]. They mainly include the SOFM network model and geographical detector [41], the “3S” technology method [13][14][42], the sample band research method [19][43], the network analysis method, and the improved entropy method [18]. Madsen et al. proposed that a combination of qualitative and quantitative methods should be integrated to help strengthen the understanding of rural space use in both developing and developed countries [36][44].

From the perspective of research scale and regional selection, most studies focus on Europe, North America, Northeast Asia, and developed countries [45][10][36][39] such as the United States, France, South Korea, and Japan [19][46][47][48][49]. Rural studies in China are mostly based on regional, provincial, and county scales [17][42][50][51]. In recent years, the scale of rural research has gradually focused on the micro field, paying more attention to the micro regional space and specific groups of rural residents [26][34][52][53]. For example, Gulumser et al. used principal component analysis and cluster analysis methods to classify the regions with similar core characteristics on the basis of dimensionality reduction [1][54]. Based on the town scale, Long Dongping et al. evaluated the rural development level of Gaoling County in Shaanxi Province in different periods [55], and explored the driving mechanism of rural development by using multiple linear regression analysis.

There are significant research results on rural development at home and abroad, but from the perspective of research topics, they do not answer the question of where special geographical units should go [3][40]. Too much attention has been paid to the definition of rural connotation, the division of rural types, and the construction of evaluation indicators, lacking multi-perspective, multi-system, and multi-scale rural classification methods [1][5][32]. Most studies focus more on revealing the overall characteristics of rural development from a macro-regional perspective, and lack differentiated analysis of rural development under the influence of different structures, factors, and functions from a micro perspective [56]. Rural development constitutes all the behavior of residents in daily life, and the rural space has the functions of production, life, ecology, and culture. The measurement index of

the rural development level should fully consider the function of rural residents' daily behavior [33]. Based on this, this paper selected the enclave-type regional countryside as the object, from the perspective of "factor-structure-function" correlation, combined with the actual rural development in Jingyuan County, Gansu Province, to construct the measurement index system of the development level of the enclave-type regional countryside. Through the combination of qualitative and quantitative methods, the level and type of rural development in Jingyuan County were explored, and the specific path of rural development was formulated so as to provide a scientific basis and theoretical reference for the rural transformation and development in the western poverty-stricken areas from the micro perspective and the implementation of a rural revitalization strategy.

2. Measurement and Path Selection of Rural Development Level in Enclave Areas: A Case Study of Jingyuan County, Gansu Province

Enclave is an important unit of regional space at different scales [45]. Due to the adjustment of administrative divisions and the intervention of policy-leading, its area only retains administrative functions in space [57][36]. There are great differences in economy, culture, society, population, and beliefs between the two separated regions. In the new spatial unit, the rural areas in the enclave region are easily attracted by other regional resource conditions, cultural exchanges, industrial driving, and other factors, so it makes the separation between the enclave region and the main region serious, leads to industrial faults, and eventually results in the lag of regional economic development and the disorder of spatial structure [16]. Jingyuan County is a special impoverished county in the arid area of Northwest China [42]. On the one hand, it has obvious advantages in industrial development and industrial foundation, and benefits from various natural resources, good climate conditions, and sufficient water resources. On the other hand, it also faces some challenges. Firstly, the rural spatial layout is scattered. Secondly, most of the rural industrial structure is single. Thirdly, the population loss is serious. Finally, the aging phenomenon is intensified. Therefore, the opportunities and challenges in rural development coexist in Jingyuan County.

Selecting the factor-structure-function nexus perspective as the dominant theoretical framework of the development level of enclave-type rural areas is a further deepening of the evaluation of rural development level from a single perspective, scale, and method in traditional research [5]. At the same time, the rural development system from the perspective of factor-structure-function relations truly reflects the context and internal law of rural development and evolution in Jingyuan County. The rural development level of Jingyuan County under the influence of different factors was measured, although the variation characteristics of rural development level between the northern enclave area and the southern main area were preliminarily found. However, from the perspective of the characteristics and classification of rural development level, it is necessary to discuss two aspects. The first is the choice of rural development path in Jingyuan County under the implementation of a rural revitalization strategy and the second is the driving factors of spatial change of rural development level in the enclave-type region.

2.1. Path Choice of Rural Development

The choice of rural development path in the enclave region essentially answers the core question that needs to be solved to evaluate the level of rural development, that is, how should Jingyuan County develop in the future? The evaluation of rural development level is a scientific and reasonable analysis of the current situation and contradictions of rural development resources in space utilization [17][19]. Based on the calculated regional function index of rural development, the actual level of rural development within the region was judged, which provides references for the classification of rural development types and spatial judgment. The core goals of the rural revitalization strategy are reshaping the relationship between urban and rural areas, promoting the harmonious coexistence of man and nature, inheriting agricultural civilization, and promoting the structural reform of agricultural supply side [8]. To promote the overall improvement of rural development level, the implementation of the strategy in the specific village space should be more specific. The overall level of rural development in Jingyuan County is at a low-and-mid level, and the quality of rural development is generally not high. Taking the factor flow, structural change, and functional change in the process of rural development in Jingyuan County as the common thread, this paper determined the main path of rural development from the aspects of industry, population, tourism, land use, culture and ecology, etc. of different villages in Jingyuan County (Table 1), and formulated specific development strategies through relevant cases and the current situation of rural development in Jingyuan County.

Table 1. Path selection of different rural development types.

Types	Essential Characteristics	Path Selection	Concrete Tactics	Case
Agglomeration Drive	It is mainly composed of suburban-fusion types and agglomeration center types. Such villages have a strong driving effect in space and can absorb peripheral resources to achieve economies of scale.	A1: Industrial Agglomeration: Based on the existing industrial foundation, we should create an industrial linkage mode to promote the expansion of the village industrial function and format.	Around facilities agriculture along the Yellow River, agriculture in the three irrigation districts, arid and semi-arid mountainous areas, cultural tourism along the Yellow River, park industry, etc., vigorously build a modern agricultural park, pastoral complex, facility agriculture base as the core of the agricultural industry cluster.	Yonglian Village, Jiangsu Province
		A2: Return Migration: On the basis of industrial agglomeration, promote the return of population, form a new population aggregation, build a new “modern farmers” system.	Relying on diversified population agglomeration, it introduces innovative scientific and technological factors to the countryside, drives the development of all kinds of talents in the village, brings urban population and maker culture to the village, and stimulates the diversified	Shijiaao Village, Zhejiang Province

Types	Essential Characteristics	Path Selection	Concrete Tactics	Case
			business development of the village.	
		A3: Tourism Promoting: Build Jingyuan high-quality tourism routes, strengthen publicity and consumption guidance, and build a comprehensive, multi-level rural tourism brand system.	Develop leisure tourism, and characteristic accommodation to promote the rural tourism cluster. Create the Yellow River scenery tourism belt, Pingpu pastoral comprehensive experience area, and Dushi village rural tourism demonstration point.	Situ Village, Shanxi Province
Integration and Optimization	It is mainly composed of the potential development type and promotion optimization type. Such villages have great potential in resource flow, and new development vitality is needed in production, life, and ecology. Integrating the advantages of different villages to achieve regional linkage and fine development.	B1:Land Use Optimization: Promote the efficient use of rural land and implement the policy of “increase and decrease linked” to solving land restriction of rural construction development.	The land resources of some villages in Liuchuan Town and Dalu Town were centralized remediation. The construction of new rural communities guide farmers centralized resettlement. To solve the characteristics of “more, scattered and chaotic” in rural residential areas and promote the distribution of land in pieces.	Xiangxiyi Village, Zhejiang Province
Policy Leading	It is mainly composed of remediation type, recession-merging type, and other general types. Such villages have weak foundation, serious population loss, and single industrial structure. Policies are needed to intervene in the process of rural development and achieve spatial restructuring.	C1: Spatial Reorganization: Optimizing the rational allocation of rural resources, and taking “migration”, “integration”, and “restoration” as means to affect the effective use of rural space.	For villages with small population, poor infrastructure, fragile ecological environment, frequent natural disasters, and major project construction needs, the reintegration of land, population, and means of production is promoted through policies such as excessive poverty alleviation and relocation, ecological remediation and restoration, ecological livable relocation, and rural agglomeration development relocation.	Minning Village, Ningxia

Types	Essential Characteristics	Path Selection	Concrete Tactics	Case
Characteristic Protection	It is mainly composed of humanistic protection, natural protection, and compound protection. Humanities and natural resources have obvious characteristics, and have high humanistic and natural utilization and protection value. It plays a core role in promoting regional development. [22] [23] [20]	D1: Cultural Activation: Explore the village culture creativity and refine the village culture symbol to create the village characteristic culture brand.	Integrate art into the countryside to revive local rural spirit and culture. Reflect on the homogeneous space brought by urbanization with nostalgia promoting people to look back at the countryside, re-experience the rural life form, and inherit the rural context.	Echigo-Tsumari, Japan
		D2: Ecological Protection: Guided by ecological environment friendly and sustainable utilization of resources, establish a government-led, village participation, social support protection model.	Based on the protection of the ecological environment, making full use of environmental advantages, turning ecological environment advantages into economic advantages, relying on the Yellow River Basin and Zuli River Basin, and focusing on the development of the ecological economy.	Gaojiatang Village, Zhejiang Province

other factors, but are also closely related to the national regional development strategy and the development of surrounding areas. Jingyuan County is a special enclave region, whose core factor affecting the level and type of rural development is the adjustment of administrative divisions [\[34\]](#). The change of administrative divisions makes the rural development level in south of Jingyuan County higher than that in north. The rural development conditions in the southern main area are good, the traffic is convenient, and the types of land resources are diverse [\[15\]](#)[\[29\]](#), which makes the development level of most rural areas in its spatial unit higher than that in the northern enclave area. Affected by topography, traffic conditions, and population structure [\[58\]](#), the development of most rural areas of eight townships in north of Jingyuan County is at a low level. The administrative separation between the main area and the enclave area leads to a significant difference in the spatial distribution of rural development levels in different regions [\[19\]](#). The high-value area and the low-value area of the rural development level are quite different. Although there are dense traffic lines and numerous river systems in the regional unit, there is a great distance between town and village, village and village, which hinders the spatial flow of resource factors and the transformation of industrial structure among different villages.

From the actual situation and evaluation results of rural development in Jingyuan County, the strong boundary of enclave makes its rural spatial structure gradually evolve from south to north. The adjustment of administrative divisions is the original factor of the low level of rural development in Jingyuan County [\[7\]](#), but the rural population size, degree of population aging, location conditions, natural environment, land resources, and other exogenous factors have a greater impact on rural development level in the enclave area. The high-value areas of rural development are mostly concentrated in river valleys, which have good cultivated land resources, and are

distributed along the Yellow River and Zuli River Basin. The implementation of major treatment measures such as intensive utilization of rural land, integration of resource elements and restoration of ecological environment, and so on, has significantly improved the level of rural development in some villages with underdeveloped production and living conditions and fragile ecological environments, which is pushed forward by government-led policies such as relocation, village mergers, and other policies. It can be seen that natural resources, river systems, population size and structure, reformation of administrative division, and local policies are the leading factors of change in rural development level and type identification in enclave regions [23][59], which affect the spatial distribution range and structural characteristics of the rural development level, and indirectly affect the effective implementation of rural revitalization strategies.

Overall, the measurement of rural development level in Jingyuan County is a scientific judgment on the rationality of the rural development process and path in typical areas. The evaluation index system of rural sustainable development level in enclave region was constructed from the perspective of “Factor-structure-function”, and the rural development level of Jingyuan County was calculated by combining qualitative and quantitative methods. On the one hand, the evaluation results not only truly reflected the actual level of rural development in Jingyuan County in different periods, but also showed the limitations and problems in the implementation of the current rural revitalization strategy. The research results can not only guide the practice of rural development in poor areas at the theoretical level, but also provide a definite development path and direction for the future rural areas. The construction of index system from the perspective of “factor-structure-function” correlation further enriches the theoretical structure of rural development level measurement at home and abroad, and provides a new idea for the sustainable development evaluation of special geographical units from different perspectives, elements, and directions.

On the other hand, there are still many deficiencies in the selection of evaluation indicators, the collection of research data, and the selection of evaluation methods. The selection of evaluation indicators should fully consider the local identity of different groups, cultural heritage, industrial innovation, and other indicators. Interview questionnaires and sample selection need to be further supplemented and improved. The methods of measuring rural development level and analyzing spatial differentiation characteristics should be more scientific. Subsequent research will focus on the above aspects to supplement scientificity and integrity.

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