Sustainable Development Levels and Influence Factors in Rural China Based on Rural Revitalization Strategy

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Abstract: Accurate and quantitative assessments of rural development can offer important information for the formulation of rural development strategies. The purpose of this study was to provide a new perspective on the evaluation of rural sustainable development, overcoming the limitations of past studies that were based on simple analyses using a single method. In doing so, we aimed to provide a theoretical reference for formulating differentiated policies for regional rural development. In the present study, the rural development levels of 31 provincial administrative regions in China from 2000 to 2020 were analyzed based on the rural revitalization index framework, using five dimensions proposed in a previous study, i.e., industrial prosperity, ecological livability, rural civilization, effective governance, and a rich life. China’s rural sustainable development level was calculated using kernel density estimation and least squares estimation of temporal and spatial analyses. The results revealed that the development levels of rural areas in China are improving, but the improvement is not spatially consistent across rural areas. On the basis of the driving factors and causal mechanism, seven types of rural development levels were identified. We further analyzed the main reasons for the spatial differences in rural development levels and offer suggestions for improvement.

Keywords: sustainable development; rural revitalization strategy; temporal and spatial differentiation; influence factors; China

1. Introduction

As spatial systems, rural regions are the opposite of urban regions, which are characterized by dynamics, openness, relativity, and unconformity [1]. The countryside, farmer, and agriculture problems (“San Nong” problems) have always been one of the overall structural contradictions in China’s social and economic development and one of the major problems that governments at all levels are committed to solving [2]. Over the past four decades of reform and opening up, China has made remarkable achievements in economic growth and social development. China’s GDP now ranks second in the world and China’s urbanization rate has increased from 17.92% to 58.52%, representing a “miracle” in the history of economic development [3]. However, in the process of rapid social and economic development, the negative effects of the traditional development model (one that focuses solely on scale growth) have become increasingly prominent, resulting in an imbalance between urban and rural development and inadequate rural development [4]. On the one hand, China has long focused its development on cities and the government has also given relevant policy support to promote their rapid development, resulting in a one-way flow of rural labor, land, technology, capital, and other factors of production to cities [5]. On the other hand, the loss of a large number of factors of production in rural areas has led to increasing poverty in rural areas, the hollowing out of villages, industrial blight, cultural disinterest, resource shortage, and ecological environment deterioration [6]. This non-synchronicity of urban and rural development drives the long-term exclusion of rural units, resulting in huge differences between urban and rural areas in terms of the levels of economic development, infrastructure construction, living environment, and supporting
public services, such as education, health and culture, and serious regional segmentation and development imbalance. Thus, it restricts the further transformation of China’s economic development mode [7]. To solve the problem of unbalanced and inadequate development between urban and rural areas, the Chinese government has successively implemented policies such as “agriculture, rural areas and farmers”, “overall planning between urban and rural areas”, and “urban-rural integration”, in an attempt to narrow the development gap between urban and rural areas [8]. Although these policies have achieved positive results, they have become increasingly difficult to adapt to the characteristics of the current major social contradictions and reconstruction of urban-rural relations in the new era. Moreover, the 19th National Congress of the Communist Party of China clearly pointed out that alleviating the structural contradiction between unbalanced urban-rural development and inadequate rural development is the most difficult task for social governance at the present stage [9]; however, as a result of the geographical differences and the period of implementation of development across different rural regions, the overall progress of the rural development strategy and its effects are not readily apparent [10,11]. Problems in rural regions continue to remain unsolved. At the 19th National Congress of the Communist Party of China, President Xi Jinping said that socialism with Chinese characteristics had entered a new era and that a contradiction had emerged between the unbalanced and inadequate development and the people’s ever-growing need for a better life; implementing strategies for rejuvenating the country was emphasized [12]. Thus, the core aim was to resolve the unbalanced development between urban and rural areas, address the remaining issues in rural development, and build a society characterized by well-rounded human development and all-around social progress [13]. The Rural Revitalization Strategy introduces the 20-word general requirements of industrial prosperity, ecological livability, civilized rural style, effective governance, and a rich life. The content of the “20-character policy” involves all aspects of agricultural and rural modernization and is organically linked and inseparable; it is both a requirement and a direction [14]. The implementation of the Rural Revitalization Strategy is a further deepening of China’s understanding of the “three rural issues” and the law of urban and rural development, and represents a leap forward in the upgrading and qualitative change of “new rural construction” and “beautiful rural construction” [15]. In implementing the strategy of rural revitalization, industrial prosperity is the focus, which is more demanding than “production development”. It is clear that industry is the basic driving force of rural revitalization. Ecological livability is the key, which highlights the ecological guidance more than a “clean and tidy village appearance”, emphasizes the harmonious coexistence between man and nature, reflects the transformation of farmers’ pursuit of “a better life”, and expresses the development goal that rural areas should be more attractive and livable like cities [16]. Rural civilization is the guarantee, in which a civilized rural style, a positive family style, and a simple folk style are cultivated, and the degree of rural social civilization is constantly improved [17]. Effective governance is the foundation, which better reflects the basic strategy of “adhering to the people-centered” and “the people being the masters of the country” than “management democracy”. Affluence is fundamental, indicating that the ultimate goal of the Rural Revitalization Strategy is to enrich the lives of ordinary people [9]. These five aspects are an organic whole, which promote, correlate to, and coordinate with each other. The “five-in-one” strategy jointly promotes the realization of rural revitalization.

The Rural Revitalization Strategy is a development strategy proposed in view of the unique development dilemma faced by Chinese rural areas, with particularity and pertinence. However, there is no shortage of international precedents for this development strategy. Since the 1960s, developed countries, driven by early industrialization, have experienced rural decline [18]. These countries successively launched rural revival movements, such as small-town construction in the United States [19], rural reform in France [20], and the village renewal movement in Germany [21]. In the 1970s, Japan and South Korea undertook rapid urbanization development and the gap between the resources focused on urban and rural development was too big. For this reason, the “village build-
ing” strategy in Japan and South Korea’s “new village movement” were proposed [22]. These were designed according to the national conditions to revive the countries [23] by improving rural infrastructure and the level of public services and promoting sustainable economic development [24]. Accurately understanding dynamic rural changes, depicting the rural development status, and exploring the internal mechanism of rural transformation and development, which has important theoretical and practical significance for the realization of multi-functional coordinated development of rural areas in the future, have become important academic topics. Firstly, regarding the evaluation of rural sustainable development, foreign scholars generally use the rurality index to evaluate the level and characteristics of rural development. British scholar Cloke pioneered the construction of a village index, consisting of 16 indicators (including the structure and employment structure, traffic patterns, population density, resident satisfaction, and distance from the city center), by evaluating all of the areas in the countryside of England and Wales [25,26]. The index categorizes areas into extremely rural, intermediate rural, intermediate non-rural, extreme non-rural, and urban areas. It also reveals that the rural community, rural way of life, and rural cultural life picture characterize rurality. Furthermore, Cloke found in a follow-up study that the evaluation index of rurality changed with different study areas and data dimensions [27,28]. Harrington and Donoghue constructed a rural evaluation index system from population density and structural indicators and studied the temporal and spatial process changes in rural America [29]. Woods conducted a secondary discussion on the connotation of rural sexuality and added an analysis of spiritual and cultural factors into the study of the rural sexuality index on the material level [30–32]. Nie noted that it is more comparable and operable to investigate the strength of rural properties in a certain area and proposed an operational definition of rural properties and a theoretical calculation method for a rural property index [33]. Researchers have used different methods, such as building a rural sex index; using farmland productivity, the rural population rate, agricultural labor productivity, and primary industry employment to build a rural index system; using the weighted sum of 615 counties and cities to perform a comprehensive evaluation of the southeastern coast of China; and developing a balanced system to measure rurality that reflects the status of agriculture, industry, growth, and travel services [18,24,34]. Secondly, when studying the influencing factors of rural sustainable development, scholars generally believe that infrastructure, energy utilization, agricultural production efficiency, policy environment, and the rural governance levels are important factors affecting rural sustainable development [17,29,35]. Although the existing research results have deepened the understanding of regional differences in rural sustainable development and provided different research perspectives and methods, there is a lack of systematic sorting of the logical relationships between the factors influencing regional differences. Therefore, it is useful to clarify the relationship between the factors affecting the sustainable development of rural areas to provide theoretical guidance and policy suggestions for the implementation of rural revitalization strategies. Finally, the EU and major member states have explored innovative methods of rural development to enhance rural competitiveness and have formulated diversified development policies [36,37]. Germany has launched rural development and renewal plans. The main path towards rural construction in Britain is empowerment, which is represented by longitudinal decentralization and horizontal improvement of development capacity [38]. The United States has carried out a “three decent” rural reform. In the practice of rural development, South Korea and Japan attach importance to government guidance and realize a rural economic development mode that can highlight the national cultural characteristics on the basis of fully respecting the dominant position of farmers [30–32]. Drawing lessons from the policies, experience, and practical exploration of western developed countries in rural construction and development is helpful to better guide the construction and development of Chinese rural areas.

In a comprehensive sense, Chinese and foreign researchers continue to incorporate new connotations into the development of rural research through their practices in different regions [39,40]. From the point of view of rural evaluation indices, existing research pays
more attention to the material level index, ignoring the impact of indicators such as health and education [38]. From the perspective of research content, more descriptive analyses are required to evaluate the impact of factors. Scholars have expanded from the simple original evaluations of regional rurality, rural tourism evaluation, rural spatial pattern differentiation, and other fields to more descriptive analyses of the impact of factors. Although the existing research results have deepened the understanding of regional differences in rural sustainable development and have provided different research perspectives and methods, there is a lack of systematic sorting of the logical relationships between the factors influencing regional differences. Therefore, it is helpful to clarify the relationships among the factors affecting the sustainable development of rural areas to provide theoretical guidance and policy suggestions for the implementation of rural revitalization strategy [14]. From the perspective of the research area, the research objects in China are mainly concentrated in the eastern coastal areas. The research time scale is usually a few specific years and long time-series data are used because the longitudinal analysis of rural regions is limited. The contribution of this study is mainly reflected in the following three aspects: first, from the perspective of a rural revitalization strategy, the levels of sustainable development in China’s rural areas from the regional level was measured, which is a type of inheritance and expansion of rurality evaluation; second, the common and different characteristics of each region in the process of rural development were explored and the spatial-temporal differentiation characteristics of rural sustainable development were obtained in order to provide a reference for the realization of a rural sustainable development model; third, on the basis of traditional evaluation methods, the Tobit model was used to judge the influencing factors of rural sustainable development through regression analysis and the advantages and disadvantages of rural sustainable development are scientifically described. In this regard, the main research objectives of this paper were as follows: How can we scientifically construct the evaluation index system of rural sustainable development levels based on a rural revitalization strategy? What is the overall sustainable level of rural areas in China? How big are the regional differences in China’s rural sustainable development? What are the advantages and disadvantages? Few studies have conducted a comprehensive and systematic analysis of the above problems. In view of this, in this paper, we present an evaluation index system of rural revitalization based on the framework of rural revitalization. Furthermore, we systematically evaluate the overall sustainable level of rural areas in China over time and space. On the basis of the results of rural sustainable development in different regions, the influencing factors of rural sustainable development differences are analyzed. The study’s findings are expected to contribute to improving rural development in China.

The content of this paper is arranged as follows: Section 1 is the introduction. Section 2 provides the research design, which mainly describes the rural development level determination method. Section 3 presents the evaluation of rural sustainable development. Then, on the basis of the five dimensions of the rural revitalization strategy, the construction of an evaluation index system to measure the quality of urban-rural integration is explained. Section 4 explores the analysis of spatial and temporal evolution, and finally, the discussion and conclusion are provided.

2. Methods and Indicators
2.1. Indicator Selection and Data Source

Existing research results on rural development index selection is relatively abundant, considering the different perspectives used to evaluate the revitalization strategy; however, in this paper, the evaluation index system, mainly follows the scientific nature, particularity, representation, easy acquisition, and principles [41]. The evaluation index system is based on the five dimensions proposed by Zhang, namely industrial prosperity, ecological livability, rural wind civilization, effective governance, and a rich life [14]. The data selected in this paper are borrowed from the China Statistical Yearbook, China Rural Statistical
Table 1. Details of rural development: components, variables.

| Component          | Indicator         | Variable                                      | Reference Source |
|--------------------|-------------------|-----------------------------------------------|------------------|
| Industrial prosperity | Industry         | Non-agricultural output of total output (+)      | [14]             |
|                    |                   | Non-agricultural employment of the workforce (+) | [7]              |
| Technology         |                   | Mechanization level (+)                        | [14]             |
|                    |                   | Agro-technician per 10,000 people (+)          | [14]             |
| Marketization      |                   | Fixed asset investment (+)                     | [28]             |
| Ecological livability | Nature          | Forest cover rate (+)                          | [14]             |
|                    |                   | Intensity of use of chemical fertilizers and pesticides (−) | [18] |
|                    |                   | Intensity of chemical fertilizers (−)          | [18]             |
| Society            |                   | Average life expectancy (+)                    | [18]             |
|                    |                   | The number of doctors per thousand people (+)  | [18]             |
|                    |                   | Rural toilet conversion rate (+)               | [14]             |
| rural civilization | Education         | Average years of education (+)                 | [23]             |
|                    |                   | Family education accounts for total expenditure (+) | [14] |
| Culture            |                   | Coverage of public cultural facilities (+)      | [14]             |
|                    |                   | Cable media coverage 0.5                       | [7]              |
| Security           |                   | Social relief coverage (+)                     | [15]             |
| Governance effective | Development   | Governance accounts for the proportion (+)     | [14]             |
|                    |                   | Incidence of poverty (−)                       | [15]             |
| Infrastructure     |                   | Tap water coverage (+)                         | [7]              |
|                    |                   | Per capita electricity consumption (+)         | [6]              |
|                    |                   | Traffic network density (+)                    | [14]             |
| Informatization    |                   | Telephone ownership per 100 households (+)      | [14]             |
| rich life          | Income            | Postal coverage (+)                            | [14]             |
|                    |                   | Per capita disposable income (+)               | [6]              |
|                    | Consumption       | Per capita consumption expenditure (+)         | [7]              |
|                    |                   | Per capita housing area (+)                    | [6]              |
| Life               |                   | Engel coefficient (−)                          | [14]             |

Note: (+) means that the indicator has a positive value; (−) means that the indicator has a negative value.

2.2. Measurement of Sustainable Development Levels

This paper uses weighted summation to calculate the sustainable development levels in rural areas [42]. $v'_t$, is the sustainable development level of a given rural region in time $t$, $x'_i$ is the variable, and $x'^{max}_i$, $x'^{min}_i$ are the upper and lower limits on the critical points of the variable, respectively. The contribution coefficient of the variable can be expressed as follows:

$$w'_i = \begin{cases} 
\frac{(x'_i - x'^{min}_i)}{(x'^{max}_i - x'^{min}_i)}, & \text{the high variable value, the high level} \\
\frac{(x'^{max}_i - x'_i)}{(x'^{max}_i - x'^{min}_i)}, & \text{the high variable value, the low level}
\end{cases}$$

(1)

where $w'_i$ represents the value of $x'_i$ in the rural region after standardization.

$$v'_t = \sum_{i=1}^{n} \lambda_i v'_i, \sum_{i=1}^{n} \lambda_i = 1$$

(2)

where $\lambda_i$ represents the weight of the $x'_i$ in the rural region. Therefore, the sustainable development level can be calculated using a linear weighting method.
2.3. Weight Determination Method

Determining the weight is a key problem in calculating the index. Analytic hierarchy process, entropy value method, equal weight method, and other weighting methods are all commonly used to determine the weight [43]. This work used the principal component analysis (PCA) method. Compared to the subjective evaluation method, PCA is a statistical method that considers the correlation between variables and converts multiple variables into a few unrelated variables using dimensionality reduction, thus making research easier [6]. Each principal component is an antecedent combination of the original variables and each principal component is unrelated to the other, which makes the master component have some superior performance compared to the original variable. The specific process of principal component analysis used to obtain the indicators’ weights is as follows:

(I) Obtain the correlation coefficient matrix of standardized index data.

(II) Derive the eigenvalues and eigenvectors of the correlation coefficient matrix and the variance contribution rate corresponding to the eigenvalues.

(III) Take the original data of the first \( t \) principal components whose eigenvalue is greater than 1 and whose cumulative variance contribution rate is greater than 85% and record their variance contribution rates as follows:

\[
C = (c_1, c_2, \ldots, c_t)
\]  
(3)

(IV) Similarly, take the corresponding \( t \) eigenvectors, which represent the contribution rates of each indicator to the \( t \) principal components. The standardized value is denoted as:

\[
A = \frac{\left[u_f - \min(u_f)\right]}{\left[\max(u_f) - \min(u_f)\right]} = (a_1, a_2, \ldots, a_t)
\]  
(4)

where \( u \) is the eigenvector, \( f \in [1, t] \).

(V) The contribution rate of each index to the total is:

\[
P = C \times A^T / \sum_{i=1}^{t} c_i = (p_1, p_2, \ldots, p_n)
\]  
(5)

where \( p_i \) is the contribution rate of index \( i \).

(VI) Then, normalize \( P \):

\[
W = p_i / \sum_{i=1}^{n} p_i = (w_1, w_2, \ldots, w_n)
\]  
(6)

where \( \lambda_i \) is the total weight of index \( i \).

The composition of China’s rural development index and the weights of each index are shown in Table 2.

| Component           | Variable                                | Weight |
|---------------------|-----------------------------------------|--------|
| Industrial prosperity| Non-agricultural output of total output | 0.031  |
|                     | Non-agricultural employment of the workforce | 0.051  |
|                     | Mechanization level                      | 0.042  |
|                     | Agro-technician per 10,000 people        | 0.048  |
|                     | Fixed asset investment                   | 0.037  |
|                     | Price index of means of production       | 0.040  |
|                     | Forest cover rate                        | 0.026  |
| Ecological livability| Intensity of use of chemical fertilizers and pesticides | 0.050  |
|                     | Intensity of chemical fertilizers        | 0.024  |
|                     | Average life expectancy                  | 0.017  |
|                     | The number of doctors per thousand people | 0.021  |
|                     | Rural toilet conversion rate             | 0.037  |
2.4. Kernel Density Estimation

Kernel density estimation (KDE) method is often used to interpret the movement trend of economic distribution. It has the advantage that parameter estimation is difficult to match. The form of function can be set arbitrarily. The solved variable and its distribution are less limited, which provides a useful tool for determining or establishing the parameter expression of the return function [43]. KDE is one of the nonparametric test methods used to estimate unknown density function in probability theory [44]. This work used KDE to study the temporal changes of sustainable development levels in rural China. For data \( x_1, x_2, \ldots, x_n \), the kernel density estimation form is calculated as follows:

\[
\hat{f}_h(x) = \frac{1}{nh} \sum_{i=1}^{n} K \left( \frac{x - x_i}{h} \right)
\] (7)

The kernel function \( K \) is a weighted function consisting of a Gaussian kernel, Epanechnikov kernel, triangular kernel, quadric kernel, etc., selected based on the density of the grouped data. Gaussian kernel function is used in the estimation of this study.

\[
\text{Gaussian} : \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}t^2}
\] (8)

Silverman noted that in the case of large samples, nonparametric estimation is not sensitive to the selection of the kernel and the selection of window width \( h \) has a great influence on the estimator [45]. If \( h \) is too small, the density estimation tends to assign the probability density too close to the observed data, resulting in many false peaks of the estimated density function. If \( h \) is too large, then the density estimation spreads the probability density contribution too widely, resulting in the fitting curve being too smooth and ignoring some wave characteristics of the sample. EViews 6 software was used in the present study, and the selection of window width was based on the method proposed by Silverman, which has a large universality, namely \( h = 0.9sn^{-0.5} \), where \( s \) is the standard deviation of the observed value of the random variable, and the selection method of \( x \) is to divide the rural development score of each year into 100 parts, with the values described below:

\[
x_j = x_{\min} + (x_{\max} - x_{\min})/99, \quad j = 0, 1, \ldots, 99
\] (9)

2.5. Least Squares Estimator

Based on the characteristics of data variance (that is, when the sample size of a group of data increases, the variance tends to evolve by first increasing and then decreasing), the variance value with the smallest deviation between the actual distribution and the
theoretical distribution of the sample value reflects the actual situation of a region [46]. This article uses a least squares estimator (LSE) to study the spatial differences of sustainable development levels in rural China. The mathematical expression of the least squares estimator is:

\[
\sigma = \frac{1}{n} \sum_{i=1}^{n} (x_i - \bar{x})^2, \bar{x} = \frac{1}{n} \sum_{i=1}^{n} x_i
\]  

(10)

where \(\sigma\) represents the variance, \(x_i\) represents the sample data, \(\bar{x}\) represents the average value of the sample, and \(n\) represents the number of samples [35].

According to the calculation process of the least variance method: in order to determine the contribution factor of the order parameter, the proportion of the score of the five dimensions of the order parameter in the total score is first calculated and arranged in the order of the size of each proportion. Then, the actual distribution and the theoretical distribution (20%, 25%, 33.3%, 50%, and 100%) are calculated one by one to calculate the variance from the single contribution factor to the multi-contribution factor [47]. When the variance value is at its minimum, it is the main contribution factor of the order parameter. LSE method can intuitively determine the category of samples, and the calculation is simple with a clear meaning [48].

2.6. Tobit Model

The overall sustainable development level in rural China is affected by a variety of factors. On the basis of existing studies and an analysis of the current situation [49], an index system was constructed from the aspects of economic development, urbanization, technological progress, industrialization, opening-up, environmental regulation, rural marketization, etc. Moreover, an econometric study was conducted by constructing an econometric model. The comprehensive efficiency of the level of high-quality agricultural and rural development varied between 0 and 1. The explanatory variables have the characteristic of being cut (truncated), which meets the conditions of the restricted dependent variable Tobit regression model setting. In this study, a random-effects panel Tobit model was used for econometric estimation. On the one hand, as compared with the fixed-effects panel Tobit model, the random-effects panel Tobit model can achieve consistent estimation. On the other hand, result bias caused by least square regression can be effectively avoided [49]. The model was set as follows:

\[ A_{ct} = \text{cons} + \theta_1 pgd_{it} + \theta_2 urb_{it} + \theta_3 tec_{it} + \theta_4 ind_{it} + \theta_5 ope_{it} + \theta_6 env_{it} + \theta_7 mar_{it} + \epsilon_{it} \]

where \(A_{ct}\) represents the comprehensive efficiency value of high-quality agricultural and rural development, \(i\) stands for region, \(t\) stands for time, \(cons\) is a constant term, \(pgd\) is the level of economic development, \(urb\) is the level of urbanization, \(tec\) is technological progress, \(ind\) is industrial level, \(ope\) is openness to the outside world, \(env\) is environmental regulation, \(mar\) is the level of rural marketization, and \(\epsilon_{it}\) is the random perturbation term.

3. Results

3.1. Sustainable Development Levels in Rural China

As the empirical method needs to be consistent with the theoretical model, we describe the measurement process of rural development levels. The first step involved calculating the weight of each index (Table 1). In the second step, we adopted the mean method to standardize all the indicators, and the rural development index of 31 provinces in China was calculated, which reflects the actual status of the rural development levels. The third step involved using the minimum variance method to identify the main factors that affect the level of rural development in China. As described in Methods and Indicators, the evaluation results reflect the development of rural China from 2000 to 2020. Our analysis revealed that the rural development value exhibits a regular and clear trend in China. Between 2000 and 2020, the development value fluctuated between 0.248 and 0.936. The higher the score, the better the development level. The score of China’s rural development level increased every year, which indicates continuous improvement.
This paper focuses on the analysis of the reasons for the increase in the regional gap. Averages in the data are not representative of regional realities, however, these averages can be used to judge whether certain trends can better guide the improvement of China’s rural development level. Figure 1 shows the classification of economic regions and rural development levels in China. We classified the levels of rural development in this region into three categories: high, medium, and low. As can be seen in Table 3, the levels of sustainable rural development in China exhibited an obvious regional imbalance and spatial difference. Generally, Shandong, Sichuan, Hunan, Henan, Jiangsu, Guangdong, Hebei, Zhejiang, Anhui, Jiangxi, and other provinces were denoted as being in high-level areas. Except for Sichuan, these provinces are located in the eastern and central regions, where the sustainable rural development level was higher. These regions exhibited high comprehensive scores and rankings. They were characterized by strong economic strength, abundant resources, high forest coverage, and strong scientific and technological competitiveness. However, it should be noted that, in terms of the high-quality development of agriculture, such areas still face severe tests, such as a lower level of cultivated land per capita, low-quality cultivated land, and insufficient cultivated land reserve resources. The mid-level regions were Hubei, Yunnan, Guangxi, Heilongjiang, Shaanxi, Liaoning, Guizhou, Jilin, Shanxi, and Inner Mongolia. Although these provinces lagged behind the eastern regions, they exhibited a rising trend by constantly improving the level of agricultural economy and narrowing the gap with higher levels of sustainable rural development regions by virtue of their location and policy advantages. Their performance was better in terms of location and policy, but there are obvious downturns in terms of agricultural environment, government support, and technological innovation. It is an urgent matter in the process of high-quality agricultural development in medium-quality agricultural areas to illustrate the shortcomings related to development and implement corresponding measures to address them. At the bottom of the list were Fujian, Xinjiang, Chongqing, Gansu, Beijing, Tianjin, Shanghai, Ningxia, Qinghai, Hainan, and Tibet. Among them, Fujian, Beijing, Tianjin, and Shanghai are in the east, while the rest are in the west. The comprehensive scores and rankings of these regions were relatively low, and the level of high-quality agricultural development needs to be improved. The reasons are as follows: There are significant differences in agricultural development among provinces and there are significant differences in influencing factors that restrict the development of high-quality agriculture. For example, the environmental constraints of water and forest resources in Ningxia limit the green development of agriculture, meaning it falls in the middle and lower levels. Although the ecological environment of individual regions is superior and the infrastructure has been significantly improved, there are still great problems in terms of high-quality development of regional agriculture due to low production efficiency and slow technological progress and adoption. In general, the levels of sustainable rural development in China present the characteristics of “gradually decreasing from east to west, intermingled between eastern provinces”. This means that the rural development level in the eastern region is significantly higher than in the central region, and the development level in the central region is higher than in the western region; the eastern provinces are interspersed. This finding is inconsistent with the regional distribution of the Chinese economy.
3.2. Temporal Differences of Development Levels in Rural China

The calculation results of the rural development levels of the studied provinces and cities were input into EViews 13.0 software to calculate the kernel density distribution of the rural development levels for each year. In order to facilitate observation and analysis, we selected the calculated results of 3 years, including the first and last years (1997 and 2018, respectively) and the middle year (2007), which effectively reflect the variation trend of all years and were used to draw the kernel density distribution map of the rural development levels of 31 provinces and cities in China. From Figure 2, we can see the changes in the rural development levels in 31 provinces and cities in China. First, from the overall position, the density curve for the 3 years exhibits a gradually shifting trend...

![Figure 1. Sustainable development levels in rural China.](image)

| Province    | 2000 | 2003 | 2006 | 2009 | 2012 | 2015 | 2018 | 2020 | Mean  | Ranking |
|-------------|------|------|------|------|------|------|------|------|-------|---------|
| Beijing     | 0.355| 0.440| 0.395| 0.345| 0.371| 0.395| 0.547| 0.615| 0.410 | 22      |
| Tianjin     | 0.248| 0.279| 0.300| 0.306| 0.303| 0.337| 0.458| 0.510| 0.338 | 27      |
| Hebei       | 0.580| 0.505| 0.514| 0.533| 0.600| 0.634| 0.723| 0.753| 0.596 | 11      |
| Shanxi      | 0.452| 0.349| 0.358| 0.386| 0.418| 0.433| 0.502| 0.513| 0.421 | 20      |
| Neimenggu   | 0.459| 0.341| 0.319| 0.373| 0.395| 0.405| 0.482| 0.507| 0.409 | 23      |
| Liaoning    | 0.395| 0.390| 0.407| 0.435| 0.449| 0.468| 0.567| 0.588| 0.457 | 18      |
| Jilin       | 0.337| 0.371| 0.383| 0.390| 0.452| 0.445| 0.519| 0.534| 0.425 | 19      |

Table 3. Sustainable development levels in rural China.
### Table 3. Cont.

| Province          | 2000  | 2003  | 2006  | 2009  | 2012  | 2015  | 2018  | 2020  | Mean   | Ranking |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| Heilongjiang      | 0.424 | 0.386 | 0.398 | 0.416 | 0.465 | 0.475 | 0.569 | 0.598 | 0.459  | 17      |
| Shanghai          | 0.371 | 0.380 | 0.436 | 0.346 | 0.372 | 0.368 | 0.504 | 0.529 | 0.400  | 24      |
| Jiangsu           | 0.497 | 0.507 | 0.523 | 0.562 | 0.689 | 0.812 | 0.872 | 0.898 | 0.652  | 7       |
| Zhejiang          | 0.479 | 0.524 | 0.592 | 0.602 | 0.677 | 0.707 | 0.880 | 0.916 | 0.659  | 6       |
| Anhui             | 0.527 | 0.527 | 0.548 | 0.542 | 0.613 | 0.651 | 0.978 | 0.741 | 0.613  | 10      |
| Fujian            | 0.371 | 0.408 | 0.402 | 0.419 | 0.448 | 0.457 | 0.587 | 0.624 | 0.467  | 15      |
| Jiangxi           | 0.491 | 0.547 | 0.557 | 0.576 | 0.672 | 0.669 | 0.776 | 0.827 | 0.634  | 8       |
| Shandong          | 0.664 | 0.665 | 0.669 | 0.763 | 0.804 | 0.920 | 0.883 | 0.932 | 0.788  | 1       |
| Henan             | 0.559 | 0.573 | 0.585 | 0.617 | 0.736 | 0.779 | 0.825 | 0.876 | 0.689  | 4       |
| Hubei             | 0.563 | 0.876 | 0.534 | 0.550 | 0.588 | 0.627 | 0.731 | 0.770 | 0.627  | 9       |
| Hunan             | 0.655 | 0.686 | 0.705 | 0.719 | 0.730 | 0.759 | 0.887 | 0.914 | 0.746  | 3       |
| Guangdong         | 0.520 | 0.563 | 0.579 | 0.599 | 0.689 | 0.702 | 0.837 | 0.886 | 0.674  | 5       |
| Guangxi           | 0.475 | 0.467 | 0.482 | 0.514 | 0.514 | 0.530 | 0.613 | 0.625 | 0.521  | 13      |
| Hainan            | 0.266 | 0.297 | 0.290 | 0.283 | 0.292 | 0.296 | 0.361 | 0.383 | 0.300  | 30      |
| Chongqing         | 0.319 | 0.380 | 0.382 | 0.391 | 0.420 | 0.448 | 0.515 | 0.554 | 0.420  | 21      |
| Sichuan           | 0.697 | 0.657 | 0.671 | 0.671 | 0.804 | 0.839 | 0.925 | 0.947 | 0.783  | 2       |
| Guizhou           | 0.526 | 0.407 | 0.465 | 0.416 | 0.459 | 0.466 | 0.566 | 0.594 | 0.470  | 14      |
| Yunnan            | 0.552 | 0.493 | 0.525 | 0.517 | 0.545 | 0.557 | 0.633 | 0.657 | 0.559  | 12      |
| Xizang            | 0.243 | 0.250 | 0.176 | 0.275 | 0.310 | 0.243 | 0.302 | 0.322 | 0.267  | 31      |
| Shaanxi           | 0.442 | 0.598 | 0.421 | 0.423 | 0.473 | 0.477 | 0.543 | 0.554 | 0.467  | 16      |
| Gansu             | 0.347 | 0.340 | 0.366 | 0.343 | 0.390 | 0.382 | 0.459 | 0.478 | 0.378  | 26      |
| Qinghai           | 0.282 | 0.296 | 0.285 | 0.292 | 0.320 | 0.313 | 0.373 | 0.374 | 0.315  | 29      |
| Ningxia           | 0.487 | 0.276 | 0.300 | 0.287 | 0.307 | 0.302 | 0.374 | 0.380 | 0.316  | 28      |
| Xinjiang          | 0.334 | 0.316 | 0.346 | 0.377 | 0.390 | 0.397 | 0.453 | 0.469 | 0.382  | 25      |

#### 3.2. Temporal Differences of Development Levels in Rural China

The calculation results of the rural development levels of the studied provinces and cities were input into EViews 13.0 software to calculate the kernel density distribution of the rural development levels for each year. In order to facilitate observation and analysis, we selected the calculated results of 3 years, including the first and last years (1997 and 2018, respectively) and the middle year (2007), which effectively reflect the variation trend of all years and were used to draw the kernel density distribution map of the rural development levels of 31 provinces and cities in China. From Figure 2, we can see the changes in the rural development levels in 31 provinces and cities in China. First, from the overall position, the density curve for the 3 years exhibits a gradually shifting trend to the right, indicating that the rural development levels in 31 provinces and cities in China generally improved annually. This is mainly because, since the 16th National Congress of the Communist Party of China, the central government has implemented preferential policies, such as exemption of agricultural tax, the implementation of agricultural subsidies, free compulsory education, the introduction of new rural cooperative medical care, and the development of new rural construction, which have greatly improved the levels of rural development in various regions to a certain extent. Second, the overall shape of the distribution changed from basic in 1997 to bimodal in 2007; the bimodal distribution remained in 2018, indicating that the development levels of China’s 31 provinces experienced a low polarization degree in 1997, which intensified rapidly in 2007 and weakened in 2018 with changes in the process. The overall level of rural development is changing and the trend of equalization of development results and public services is increasingly evident. Thirdly, from the peak change of the bimodal distribution from 1997 to 2007, the peak low development level declined slightly, while the high development level peak rose rapidly, indicating that the progress rate of provinces with a favorable development level was faster than that of cities with a low development level. From 2007 to 2018, both provinces with a low level of development and those with a high level of development exhibited a declining trend for the peak value. The peak high development level value was more apparent and the rural development of all provinces in the region was more balanced. Given that the tail of the right peak moved more to the right in 2018, although the polarization form was alleviated, the progress rate of the provinces with a high development level still remained faster than that of the provinces...
with medium and low development levels. This also reflects the uneven rural development in various regions of China.

![Kernel density distribution map of development levels in rural China.](image)

### Figure 2.
The kernel density distribution map of development levels in rural China.

#### 3.3. Spatial Difference of Development Levels in Rural China

By examining the results of the LSE method within the five aspects of industrial prosperity (I), ecological livability (E), rural civilization (R), governance effective (G), and a rich life (L), the driving factors of rural development levels in each region can be further analyzed. Table 4 presents the types of drivers of rural development in China.

#### Table 4. Values, contribution rates, and types of development levels in rural China.

| Region       | 2018 Year | I (%) | E (%) | R (%) | G (%) | L (%) | Type     |
|--------------|-----------|-------|-------|-------|-------|-------|----------|
| Beijing      | 0.264     | 2.090 | 11.747| 4.629 | 10.049| 71.485| L        |
| Tianjin      | 0.247     | 4.657 | 12.957| 2.826 | 9.785 | 69.775| E-L      |
| Hebei        | 0.316     | 41.885| 9.414 | 12.844| 6.303 | 29.554| I-R-L    |
| Shanxi       | 0.272     | 15.420| 14.146| 15.102| 9.844 | 45.488| I-E-R-L  |
| Neimenggu    | 0.269     | 27.193| 11.485| 12.153| 7.557 | 41.612| I-E-R-L  |
| Liaoning     | 0.283     | 33.099| 11.544| 11.466| 8.079 | 35.813| I-E-R-L  |
| Jilin        | 0.276     | 23.409| 12.566| 13.776| 11.476| 38.772| I-E-R-G-L|
| Hei-longjiang| 0.292     | 37.932| 10.265| 13.842| 8.822 | 31.087| I-R-L    |
| Shanghai     | 0.245     | 2.040 | 11.073| 10.771| 7.480 | 66.429| E-L      |
| Jiangsu      | 0.291     | 44.025| 5.691 | 12.472| 11.158| 30.467| I-R-L    |
| Zhejiang     | 0.303     | 25.419| 9.009 | 9.828 | 20.688| 39.839| I-G-L    |
| Anhui        | 0.314     | 32.642| 9.748 | 11.467| 23.296| 28.383| I-R-G-L  |
| Fujian       | 0.280     | 32.654| 10.952| 6.474 | 18.032| 35.214| I-G-L    |
| Jiangxi      | 0.332     | 22.678| 9.975 | 12.345| 39.263| 27.195| I-G-L    |
| Shandong     | 0.371     | 44.088| 6.860 | 14.836| 25.039| 28.383| I-R-G-L  |
| Henan        | 0.345     | 45.322| 8.680 | 12.581| 13.355| 24.914| I-R-G-L  |
| Hubei        | 0.313     | 38.933| 8.044 | 9.837 | 26.820| 26.253| I-G-L    |
| Hunan        | 0.353     | 33.149| 7.695 | 11.880| 46.800| 21.642| I-G-L    |
| Guangdong    | 0.339     | 39.525| 9.058 | 7.603 | 31.183| 23.998| I-G-L    |
| Guangxi      | 0.293     | 37.810| 11.328| 8.281 | 19.136| 27.400| I-G-L    |
| Hainan       | 0.234     | 22.241| 16.432| 5.261 | 10.094| 42.057| I-E-L    |
| Chongqing    | 0.269     | 23.513| 13.040| 10.169| 14.519| 37.717| I-E-R-G-L|
| Sichuan      | 0.375     | 37.065| 7.458 | 22.093| 28.911| 18.129| I-G-L    |
| Guizhou      | 0.296     | 30.820| 12.141| 14.374| 13.009| 30.558| I-E-R-G-L|
| Yunnan       | 0.308     | 30.050| 11.171| 14.482| 23.480| 25.669| I-E-R-G-L|
| Xizang       | 0.207     | 3.900 | 20.802| 10.912| 8.013 | 48.485| E-L      |
| Shaanxi      | 0.285     | 26.733| 12.028| 16.144| 9.693 | 36.003| I-E-R-L  |
| Gansu        | 0.271     | 21.013| 13.412| 17.678| 6.610 | 39.918| I-E-R-L  |
Table 4. Cont.

| Region     | 2018 Year | I (%)  | E (%)  | R (%)  | G (%)  | L (%)  | Type      |
|------------|-----------|--------|--------|--------|--------|--------|-----------|
| Qinghai    | 0.234     | 6.566  | 17.185 | 7.423  | 6.679  | 57.473 | E-L       |
| Ningxia    | 0.230     | 6.931  | 16.511 | 7.671  | 6.161  | 58.806 | E-L       |
| Xinjiang   | 0.264     | 29.594 | 10.883 | 14.796 | 7.614  | 36.596 | I-E-R-L   |

(1) Single-factor type. The single factor type was mainly driven by L, and includes Beijing. This region has high economic and social levels, strong scientific and technological strength, a cluster of higher learning institutions, with the highest per capita income and living standard in China, and positive resilience. However, the region has a large population density and rapid economic development has imposed a heavy burden on the resources and ecology in the region. For example, the development and utilization intensity of water resources in Beijing is higher than 150% and it is necessary to strengthen management and increase investment in improving water quality and controlling agricultural non-point source pollution.

(2) Two-factor type. The two-factor model was mainly driven by E-L, and includes Tianjin, Shanghai, Ningxia, and Qinghai provinces. The social and economic conditions in Tianjin and Shanghai are relatively positive, there is no great economic development and population pressure, and social development has little impact on the ecological environment. The social adaptability of Ningxia and Qinghai is not high, ranking the lowest in the country. On the other hand, a large number of local laborers go to the southeast coast to work, so the local living standard in these regions is better. Improving the speed of economic development and the level of science and technology (especially in Qinghai) can help to rapidly improve the regions’ development capacity and enhance social adaptability.

(3) Three-factor type I. This type is mainly driven by I-R-L, and includes Hebei, Heilongjiang, and Jiangsu. These regions’ agricultural mechanization degree is high and the ecological environment has not been damaged. The level of economic and social development is limited; the government’s financial self-sufficiency and social production capacity are low; and the level of science, technology, and education urgently needs to be improved. The region should promote development through efforts to improve social resilience, but not at the expense of the ecological environment.

(4) Three-factor type II. This type is mainly driven by I-G-L, and includes Zhejiang, Fujian, Jiangxi, Hubei, Hunan, Guangdong, Guangxi, and Hainan. The economic level of this region is the highest in China and the degree of mechanization is higher than the level of agricultural output. In addition, while developing the economy, the environment has not been effectively protected and water resources have been exploited, which leads to the serious displacement of ecological water and the ineffective control of soil erosion.

(5) Three-factor type III. This type is mainly driven by E-R-L, and includes Xizang. The economic level of the region is relatively low with respect to China. As a result of its location on the Qinghai-Tibet plateau, the ecological environment is relatively acceptable but the harsh climatic conditions are not suitable for the development of agriculture. Economic and social development is needed and the region needs to invest more in science, technology, and education.

(6) Four-factor type I. This type is mainly driven by I-R-G-L, and includes Shanxi, Neimenggu, Liaoning, Shaanxi, Gansu, and Xinjiang. The economic development levels of these regions can be seen as the middle level in China: the resource background is poor, the annual precipitation changes greatly, the climate is dry, the desertification area is high, and the water quality is seriously deteriorating. All these factors further restrict the development of rural areas. It should be noted that the low ratio of turnover in the science and technology market to GDP in this region indicates that there is no effective mechanism for the transformation of scientific and technological research results to productivity, and there is a large scope for improvement in areas such as the area ratio of protected areas and the growth rate of soil erosion control.
(7) Four-factor type II. This type is mainly driven by I-E-R-L, and includes Anhui, Shandong, Henan, and Sichuan. The level of economic development in these regions is limited, the government’s financial self-sufficiency and per capita GDP are low, and the proportion of government consumption expenditure in GDP is above 20%. The level of scientific knowledge and education is low and the proportion of medical conditions is low for China. This requires these regions to improve their social adaptability to alleviate water poverty. In addition, the ecological environment has not suffered much man-made damage except for natural factors, such as desertification, floods, and drought.

(8) Five-factor type. This type is mainly driven by I-E-R-G-L, and includes Jilin, Chongqing, Guizhou, and Yunnan. Although their socioeconomic development is different, the driving effect of the five dimensions for these regions is the same. For example, the background of Chongqing’s economic development is positive and its infrastructure construction and ecological environment are relatively favorable. However, the situation of Guizhou province is the exact opposite. The economic conditions are harsh, the social adaptability of other dimensions is poor, and all the influencing factors of subsystems need to be improved. Therefore, the five factors have a joint driving effect on the rural regional development.

3.4. Influencing Factors of the Sustainable Development Levels in Rural China

Stata15.1 econometric analysis software was used to conduct Tobit regression of the random effects panel and the results are shown in Table 5.

| Variables | Coefficient Estimates | Standard Deviation | Z-Value | p-Value |
|-----------|-----------------------|--------------------|---------|---------|
| pgd       | 0.0000145 ***         | 1.35 × 10^{-6}     | 10.78   | 0.000   |
| urb       | 0.0006559             | 0.0006205          | 1.06    | 0.290   |
| tec       | -0.0573706 ***        | 0.0066017          | -8.69   | 0.000   |
| ind       | -0.0013324 ***        | 0.0004694          | -2.84   | 0.005   |
| ope       | 0.0002066             | 0.0002915          | 0.71    | 0.478   |
| env       | 0.0004354 **          | 0.0002205          | 1.97    | 0.048   |
| mar       | 0.0011997 *           | 0.0006199          | 1.94    | 0.053   |
| cons      | 0.3117895 ***         | 0.0792058          | 3.94    | 0.000   |
| ρ         | 0.9357479             | 0.0157138          |         |         |

Note: * is significant at 10% level, ** is significant at 5% level, and *** is significant at 1% level.

Since the LR test result of the model strongly rejects “H0: c_0=0”, it implies that the model has individual random effects and should not be a mixed regression; meanwhile, the ρ value of the model is 0.936, which is greater than 0.5 and demonstrates that it is reasonable to choose the random effects panel Tobit model.

Specifically, the regression coefficient of the level of economic development is positive and significant at the 1% level, indicating that economic growth positively contributes to the overall efficiency of the sustainable development level. The reason may be that economic development has significantly optimized and improved the structure of the agricultural economy, green production models have been adopted and, with the adoption and development of information technology, the agricultural industry platform has become more diversified, gradually opening up the agricultural economy consumer market. This is especially true of agricultural production and sales models, such as “Internet+”, which, to a certain extent, has helped to extend the industrial chain of the agricultural economy, enhance the value of agricultural products, and promote the sustainable development level in rural China.

The regression coefficient of technological progress is negative and significant at the 1% level, indicating that technological progress negatively affects the improvement of the sustainable development level. The reason may be that technological progress is a double-edged sword. On the one hand, increasing technological inputs can produce many excellent strains that are resistant to drought and salinity. These help in scenarios such as
drought and increased salinity, as well as in the face of uncertain natural changes, thus stabilizing the yield and quality of agricultural products. On the other hand, technological progress reduces the value of resources and production costs, which in turn leads to more demand for resources and more environmental emissions, namely the “rebound effect”, which is, to some extent, consistent with the findings of Liu (2021), i.e., the sustainable development level decreases significantly.

The regression coefficient of the level of industrialization is negative and significant at the 1% level, indicating that the level of industrialization negatively contributes to the sustainable development level. The reason may be that agricultural development provides raw material support for industrialization, which creates conditions for agricultural development in terms of factors, technologies, product markets, etc. Industrialization development is particularly favorable to petroleum agriculture development and, along with the increasing level of industrialization, the degree of petroleum agriculture development has continually increased, creating a stronger negative impact on sustainable development in rural China.

The regression coefficient of the level of environmental regulation is positive and significant at the 5% level, indicating that the level of environmental regulation positively promotes the improvement of sustainable development level. The reason may be that the country is paying more and more attention to environmental protection, the total investment in environmental pollution control is gradually increasing, and the comprehensive efficiency of high-quality agricultural and rural development under the “water-energy” constraint is gradually increasing as a result of strengthening sewage treatment infrastructure construction, carbon emission control, and waste treatment, as well as improving the laws and regulations to control pollution.

The regression coefficient of the level of rural marketization is positive and significant at the 10% level, indicating that the agricultural marketization level positively promotes the improvement of sustainable development level. The reason may be that farmers’ net income includes business income, property income, and transfer income, and the higher the proportion of farmers’ business income to farmers’ net income (namely, the higher the degree of agricultural marketization), the more conducive it is to improving the level of agricultural technology and the efficiency of technological allocation, which in turn improves the sustainable development level.

4. Conclusions and Discussion

Drawing upon previous studies and the concept of the rural revitalization strategy of China, in this paper, we present an index system with which to evaluate the rural development levels of 31 provinces in China from 2000–2020. The KDE, LSE, and Tobit model were used to analyze temporal and spatial status and influence factors.

The results are as follows:

Firstly, rural development depends on regional differences in natural, social, economic, technological, and policy aspects. From 2000 to 2020, the overall rural development level of 31 provinces fluctuated between 0.248 and 0.936, exhibiting an upward trend year by year, indicating that China’s rural areas have made great progress in recent years. In general, the overall sustainable development level of China’s rural areas exhibits the characteristics of “gradually declining from east to west, interwoven between eastern provinces”. This means that the rural development level of the eastern region is significantly higher than that of the central region, and the development level of the central region is higher than that of the western region, which is interwoven with the eastern provinces. This finding is inconsistent with the regional distribution of the Chinese economy. It is worth noting that, with the rapid development of rural areas, the development gap between provinces is also widening year by year, and the sustainable development levels of China’s rural areas exhibit an obvious regional imbalance and spatial differences.

Secondly, the analysis of the change characteristics of the long time series of rural development is helpful in terms of clarifying the time evolution pattern of the rural de-
velopment process and trend in a certain region, and in terms of providing a theoretical basis for the formulation of regional development policies and planning. On the basis of the kernel density estimation method, we found that the polarization degree of the overall sustainable rural development level in 31 provinces of China was low in 1997, rapidly intensified in 2007, and weakened with the change of process in 2018. Moreover, the trend of the equalization of development achievements and public services became increasingly obvious. In addition, over time, the pattern of polarization eased, with provinces with high sustainable development improving faster than those with low sustainable development.

Finally, traditional measures and evaluation methods of regional differences can be ignored and location factors cannot truly reflect regional differences due to spatial characteristics or changes. On the basis of the LSE method, the regional types were divided into seven types: the single-factor type, two-factor type, three-factor type I, three-factor type II, three-factor type III, four-factor type I, and four-factor type II. The aim was to reveal the driving forces and spatial distribution of different types of rural regional development, thereby improving the sequence of policy interventions. Among them, the levels of economic development, environmental regulation, and rural marketization play a role in promoting rural sustainable development. Technological progress and industrialization hinder the sustainable development of rural areas.

The policy implications of the conclusions of this paper are as follows:

Firstly, in the process of promoting rural development, we should strengthen and attach importance to promoting the stability and long-term nature of policies so as to reduce the volatility in the process of development. We should formulate long-term and short-term planning goals consistent with the development goals of the rural revitalization strategy; set goals and tasks at the central, local and county levels; and make the goals, requirements, and development paths of rural revitalization and development in all areas clear. In view of the low level of rural revitalization development in most provinces, all regions should focus on the top-level design of rural revitalization planning according to their own resource endowment and development foundation.

Secondly, because of the different levels of rural development in China’s provinces and cities, the rural development policy priorities of the upcoming 14th Five-Year Plan should vary from province to province. According to the driving factors extracted in this paper, differentiated development policies can be formulated nationwide. At present, the differences in rural revitalization and development in China mainly come from inter-regional differences, and intra-regional differences should not be ignored. In particular, the sustainable agricultural development in Central and Western China is at a low level of development. When implementing the strategy of rejuvenating the country, it is necessary to create an effective coordinated regional development strategy, continue to strengthen the eastern and western regions in terms of a “one-to-one” or “one-to-many” support mechanism, and encourage collaboration between the eastern regions and the rest of China. This will help to create a support mechanism that is mutually beneficial. The eastern region enjoys an advantageous position in terms of capital and technology, while favorable land policies, a sufficient labor market, and various resources in the central and western regions create positive conditions for cooperation and mutual benefit.

Thirdly, government intervention should be fully implemented in rural areas. It is impossible to realize effective governance in rural areas solely with a single governance mode. The participation of subjective media, such as the government, the masses, and the third sector, combined with various governance modes, such as government-led, joint participation with the rural masses, and the coordination and cooperation of the third sector, will effectively guarantee the stable development of rural areas. On the one hand, China is in an important stage of rural revitalization and the direction and focus of provincial and municipal governments’ investment in rural governance will affect the process and results of rural development. On the other hand, the one-sided pursuit of rapid economic development, while ignoring the ecological consequences brought about by the economic development pattern, will gradually be revealed. Therefore, environmental protection con-
A system of environmental protection and a management system must be created and, through the media, ecological and scientific knowledge must be strengthened in order to promote rural sustainable development.

Finally, the mode of agricultural production must be changed and the level of agricultural marketization improved. At present, China’s resources and environmental conditions are deteriorating day by day, and people’s requirements for the quality and safety of agricultural products are gradually increasing. In this new scenario, it is of great importance to change the agricultural development mode and improve the agricultural specialization level. On the one hand, we should vigorously develop various forms of moderate scale operation, encourage innovative forms of land transfer, reasonably determine the scale of land transfer according to the actual situation in different regions, further improve and perfect the agricultural social service system, and improve the scale of agriculture. On the other hand, we should change the mode of agricultural operation and management, change the situation of agricultural development from quantitative growth to one that places equal emphasis on quantity and quality, and increase output and product quality through scientific and technological input and innovation. This can be achieved by actively cultivating and strengthening leading enterprises, promoting the scale of intensive development of leading enterprises, carrying out standardization construction, developing deep processing enterprises, improving the industrial chain, and enhancing the added value of products.

In this work, from the perspective of rural revitalization, we attempted to build an evaluation index system for sustainable rural development; however, because rural revitalization involves people, land, money, and a complex system of industry, the research is still in the exploratory stage, and no unified research system has been identified. The index proposed in this paper mainly considers universality, logic, and accessibility. However, this model is limited by the imperfect statistical data, and its utility and rationality need to be improved. It is still necessary to further optimize the indicator system in order to comprehensively describe the study of rural sustainable development. Therefore, the construction of a scientific, systematic, comprehensive, and practical indicator system is the direction of future research. In addition, from the data acquired, it was possible to work at the provincial level. It was difficult to characterize micro-scales, such as the county, town, and village domains, especially in areas of poor development. Thus, the level of sustainable development on the rural village scale needs to be further explored. Moreover, the revitalization model needs to be studied further in order to produce effective rural revitalization strategies. In the future, we may adopt a field questionnaire and interviews to obtain county-, town-, and village-level data. This will more comprehensively reveal regional differences, dynamic evolution trends, and driving mechanisms at all levels of local governance, and help to implement sustainable rural development strategies.

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