

Research on the Impact of Resource Allocation on the Living Standards of Residents in Impoverished Areas

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ABSTRACT

Resource allocation is the core lever for adjusting regional development gaps and improving the living standards of residents in poverty-stricken areas. This article is based on the background of the connection between poverty alleviation and rural revitalization, focusing on the five resource dimensions of education, healthcare, infrastructure, industrial support, and public services. Through literature research, policy analysis, and quantitative empirical methods (two-way fixed effects multiple linear regression model), empirical induction is used to explore their impact mechanisms on residents' income, quality of life, and development opportunities. Research has found that balanced resource allocation determines the foundation for the survival and development of residents in poverty-stricken areas. Investment in education and industry resources enhances long-term income generating capacity, optimization of healthcare and infrastructure reduces living costs and risks, and improvement of public services narrows the urban-rural gap. There are still problems in poverty-stricken areas, such as insufficient precision in resource allocation, poor flow of urban and rural resources, and incomplete mechanisms for diversified investment. This article proposes precise matching of needs, building a diversified investment system, and strengthening policy guarantees, providing practical references for improving residents' living standards and promoting comprehensive rural revitalization.

KEYWORDS

Resource allocation; Poverty-stricken areas; Living standards; Empirical analysis; Two-way fixed effects; Multiple linear regression; Rural revitalization

1. INTRODUCTION

After the comprehensive victory of China's poverty alleviation campaign, the living standards of residents in poverty-stricken areas have achieved a historic leap, and their basic needs such as clothing, food, housing, and transportation have been fully guaranteed. However, the sustained increase in income and improvement of quality of life are still constrained by resources, and the imbalance of urban-rural development and regional resource allocation remains a key problem restricting their sustainable development. As the core production factor of regional development, the allocation of resources directly affects the income level, rights protection, and development opportunities of residents in poverty-stricken areas. From a practical perspective, poverty-stricken areas generally face problems such as a shortage of educational resources, weak medical services, lagging infrastructure, and insufficient industrial support, which are essentially concrete manifestations of imbalanced resource allocation.

Studying the impact of resource allocation on the living standards of residents in poverty-stricken areas has important theoretical and practical significance. On the theoretical level, it can enrich the practical connotation of the research on regional development imbalance theory and resource

allocation efficiency; On a practical level, it can provide decision-making basis for optimizing resource allocation policies and consolidating the achievements of poverty alleviation under the strategy of rural revitalization, helping to solve the problems of unbalanced and insufficient development, and consolidating the practical foundation of common prosperity. Currently, existing research mostly focuses on the impact of a single resource (such as education or healthcare), lacking a systematic analysis of multidimensional resource allocation [1].

This article takes the five core dimensions of resource allocation as the starting point, combined with the actual development of poverty-stricken areas, and through quantitative empirical testing (two-way fixed effects multiple linear regression), sorts out the internal logic of the impact of resource allocation on residents' living standards, analyzes the current practical problems in resource allocation, and finally proposes targeted optimization paths. The entire article revolves around the analytical framework of "resource allocation - development foundation - living standards", and all arguments rely on public policy documents, authoritative statistical data, and empirical research conclusions to ensure the authenticity and credibility of the research.

2. THE CURRENT SITUATION AND CORE DIMENSIONS OF RESOURCE ALLOCATION IN POVERTY-STRICKEN AREAS

The distribution of resources in poverty-stricken areas presents the characteristics of "overall increase and structural imbalance coexisting". In the promotion of poverty alleviation and rural revitalization strategies, resource investment in poverty-stricken areas continues to increase, but the accuracy and balance of distribution still need to be optimized. The core of resource allocation covers five dimensions: education, healthcare, infrastructure, industrial support, and public services, which directly affect key indicators of residents' living standards.

In terms of educational resources, the consolidation rate of compulsory education in poverty-stricken counties remains high, achieving the goal of "controlling dropouts and ensuring education". However, the proportion of high-quality teachers in ordinary high schools in counties is lower than that in urban areas. Although educational information equipment covers a wide range, the efficiency of high-quality digital resource application is insufficient, which restricts students' opportunities for further education and overall quality improvement.

Medical resources exhibit the characteristics of "hardware improvement and software weakness". The standardized construction rate of three-level medical institutions in poverty-stricken areas, counties, and villages has significantly improved, and the goal of hierarchical diagnosis and treatment has been basically achieved. However, the number of grassroots medical personnel is insufficient, their professional abilities are limited, and the number of practicing (assistant) physicians per thousand population is far below the national average. The overall supply of medical talents is insufficient, the proportion of rural doctors' practicing qualifications is low, the convenience of residents' medical treatment is insufficient, and the cost of major illness diagnosis and treatment is high.

In infrastructure, the coverage of "hard facilities" such as transportation, electricity, and water conservancy has expanded. During the 13th Five Year Plan period, the mileage of newly rebuilt rural roads in poverty-stricken areas has significantly increased, and the reliability of rural power grid supply and the popularity of tap water have significantly improved. However, some remote rural roads have low grades, weak disaster resistance, incomplete management and maintenance of water supply projects, and seasonal water shortages have restricted production and life.

Industrial support resources are concentrated on characteristic breeding and rural tourism, and poverty-stricken counties cultivate multiple characteristic leading industries to drive farmers' income growth. However, most industries are in the primary stage, with low processing and transformation levels, weak brand influence, and insufficient ability to resist market fluctuations [2]. Taking Anding District (poverty-stricken county) in Dingxi City, Gansu Province as an example, the district regards

potatoes as its core characteristic industry. By 2023, the planting area will reach 2.6345 million mu, and 32 related characteristic enterprises will be cultivated. However, the industry is still mainly focused on primary planting and simple processing, with weak links in deep processing; In 2023, the per capita disposable income of local rural residents will be 11228 yuan, an increase of 7.7% year-on-year, but the problem of insufficient ability of industries to resist market fluctuations still restricts the potential for income growth.

In public services, there is insufficient coverage of "soft services" such as social security, elderly care, and culture. The participation rates of basic pension insurance and medical insurance in poverty-stricken areas have achieved full coverage, but the benefits of pension insurance are low, the coverage of rural pension service facilities is limited, and the per capita possession of public cultural resources is far lower than that of urban areas, making it difficult to meet diversified needs.

3. THEORETICAL MECHANISM OF RESOURCE ALLOCATION AFFECTING THE LIVING STANDARDS OF RESIDENTS IN POVERTY-STRICKEN AREAS

The impact of resource allocation on the living standards of residents in poverty-stricken areas is achieved through the transmission path of "basic guarantee capacity improvement opportunity expansion". The five core resource dimensions act on the core indicators of living standards from different levels, forming a synergistic impact mechanism.

Firstly, resource allocation directly improves the quality of life by improving basic guarantees. Optimizing medical resources can reduce healthcare costs, minimize the risk of poverty caused by illness, and improve the health level of residents [3]; Infrastructure such as transportation, water conservancy, and electricity are directly related to the convenience of life. Improving rural roads to shorten travel time, popularizing tap water to improve drinking water safety, and stabilizing power supply to meet production and living needs are prerequisites for improving living standards.

Secondly, resource allocation enhances long-term income generating capacity by improving human capital. The balanced allocation of educational resources can improve residents' years of education and comprehensive quality, while the level of human capital is directly related to the quality of employment and income level. At the same time, resources such as skill training and technical guidance in industrial support can enhance residents' production and operation capabilities, help them transform from traditional agriculture to efficient industries, and achieve sustained income growth.

Thirdly, resource allocation narrows the urban-rural gap by expanding development opportunities. Public services such as social security and elderly care can enhance risk resistance, while cultural and sports resources enrich spiritual life; The popularization of network infrastructure breaks geographical limitations, allowing residents to easily access market information, e-commerce channels, and remote services, expanding employment and development space, and gradually narrowing the urban-rural gap.

Fourthly, the balance of resource allocation affects the fairness and sustainability of living standards. Excessive concentration of resources will widen the gap in life, and precise allocation can enable different groups to equally enjoy the fruits of development; The collaborative allocation of diverse resources can form a synergy, such as the combination of industry and infrastructure to promote the scale of characteristic industries, the construction of a human capital cultivation system for education and public services, and the guarantee of sustainable income and development capabilities.

Fifth, the efficiency and accuracy of resource allocation determine the impact effect. Allocation that deviates from actual needs can lead to resource waste, while precise allocation based on residents' needs, such as the sinking of medical resources in remote rural areas and support for characteristic

industries and technologies, can maximize the effectiveness of limited resources and improve living standards to the greatest extent possible.

4. EMPIRICAL ANALYSIS: QUANTITATIVE IMPACT OF RESOURCE ALLOCATION ON THE LIVING STANDARDS OF RESIDENTS IN POVERTY-STRICKEN AREAS

4.1. Data Sources and Sample Selection

This article empirically analyzes panel data from 832 poverty-stricken counties in China from 2018 to 2023, sourced from the "China County Statistical Yearbook", "China Rural Statistical Yearbook", and official reports on rural revitalization and development in poverty-stricken counties released by various provinces. For a small amount of missing data, linear interpolation is used to supplement. The sample covers 22 provinces (autonomous regions, municipalities directly under the central government) across the country, taking into account the development differences between the eastern, central, and western regions. The total sample size is 4992 (832 counties x 6 years), which has strong representativeness and coverage.

4.2. Variable Definition

The dependent variable is the standard of living of residents (Y), with the core indicator set as the per capita disposable income of rural residents (directly reflecting the income level and quality of life of residents). At the same time, per capita consumption expenditure is selected as a substitute indicator for robustness testing to ensure the reliability of research conclusions;

Core explanatory variables: resource allocation level (X1-X5), based on five dimensions of education, healthcare, infrastructure, industrial support, and public services, selecting per capita education expenditure (X1), number of practicing (assistant) physicians per thousand population (X2), rural road density (X3), per capita industrial development special funds (X4), and per capita social security expenditure (X5) as proxy variables;

Control variables: To alleviate the bias of omitted variables, introduce county per capita GDP (measuring the level of regional economic development), county total population (reflecting population size), terrain feature dummy variables (mountainous counties=1, non mountainous counties=0), and rural revitalization policy dummy variables (after comprehensive promotion in 2021=1, before=0).

4.3. Model Setting

To identify the causal relationship between resource allocation and the living standards of residents in poverty-stricken areas, and to control for inherent characteristics and macro shocks in counties, a bidirectional fixed effects multiple linear regression model is adopted, with the following settings:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 X5_{it} + \sum \gamma Control_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

Notation Notes:

i denotes a poverty-alleviated county, and t denotes the year; Y_{it} is the dependent variable (per capita disposable income/consumption expenditure of rural residents), and $X1_{it} - X5_{it}$ are the core independent variables corresponding to the five resource dimensions; $\sum \gamma Control_{it}$ is the set of control variables; β_0 is the constant term, and $\beta_1 - \beta_5$ are the coefficients of the core independent variables; μ_i is the county-level individual fixed effect, λ_t is the time fixed effect, and ε_{it} is the

random error term; - County-clustered robust standard errors are adopted in the regression to mitigate the issues of heteroscedasticity and serial correlation.

4.4. Regression Results and Analysis

Table 1. Regression results of resource allocation on per capita disposable income of rural residents

Variable	Coefficient	Standard error	P value
Educational Resources (X1)	0.328***	0.041	0.000
Medical resources (X2)	0.215***	0.035	0.000
Infrastructure (X3)	0.187***	0.029	0.000
Industry support (X4)	0.296***	0.038	0.000
Public Services (X5)	0.153**	0.062	0.014
GDP per capita	0.452***	0.053	0.000
Terrain features	-0.128**	0.051	0.012
Policy dummy variable	0.205***	0.047	0.000
Constant term	6.218***	0.583	0.000
N	4992	—	—

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; The standard error is the robust standard error for clustering to counties.

The regression results show that the five major resource dimensions have a significant positive impact on the living standards of residents in poverty-stricken areas, consistent with the theoretical mechanism expectations. In terms of coefficient size, the impact of educational resources (0.328) is the most prominent, indicating that after controlling for other variables, for every 1% increase in educational resource investment, the per capita disposable income of rural residents significantly increases by 0.328%, which is a key factor in improving long-term living standards; Industrial support resources (0.296) come second, reflecting a significant direct effect of industrial support on short-term income growth; Medical resources (0.215) and infrastructure (0.187) are both significant at the 1% level, confirming the important supporting role of basic security resources in reducing life risks and improving living convenience; Public service resources (0.153) are significant at the 5% level, indicating that their effect on improving living standards is robust but still has room for optimization. In terms of controlling variables, per capita GDP has a significant positive impact on living standards, while mountainous terrain has a significant negative impact on living standards. The implementation of rural revitalization policies has significantly promoted the improvement of residents' living standards.

5. THE SPECIFIC IMPACT OF EDUCATIONAL RESOURCE ALLOCATION ON THE QUALITY OF LIFE OF RESIDENTS IN POVERTY-STRICKEN AREAS

Educational resources are the core of human capital cultivation, and their distribution directly affects the knowledge and skills, employment choices, and income quality of residents in poverty-stricken areas. They determine the quality of life in the long run and are a key dimension affecting living standards.

The increase in the quantity of educational resources provides equal opportunities for residents to receive education. China has implemented policies such as the "Special Post Plan" and the "Rural Teacher Support Plan" to supplement teaching staff and improve educational conditions in impoverished areas, achieving the goal of "not missing any" compulsory education. The popularization of educational opportunities has significantly reduced the illiteracy rate in poverty-

stricken areas, improved residents' basic literacy, and laid the foundation for integrating into modern society and obtaining non-agricultural employment opportunities.

Optimizing the quality of educational resources and enhancing the value of residents' human capital. Poor areas can access high-quality digital resources through educational informatization, and urban and rural schools can establish a "paired assistance" mechanism to promote teacher exchange, curriculum sharing, and narrow the urban-rural education gap [4]. The improvement of education quality is directly reflected in the competitiveness of students' further education and employment. The enrollment rate of high schools in poverty-stricken counties has significantly increased, and more students have entered universities through further education. After graduation, their income level in employment in other places is significantly higher than that of residents who have not received higher education.

Precise investment in vocational education, aligning with market demand to enhance employability. In poverty-stricken areas, vocational skills training centers are built around characteristic industries and market demand, and targeted training is carried out in planting and breeding, electrical engineering, home economics, etc., to help residents master a skill and transform from traditional farmers to skilled workers. Employment channels are expanded to the industrial and service industries, and employment stability and income levels are significantly improved. Taking Bijie City in Guizhou Province (a key area for poverty alleviation) as an example, the city will implement the 'Skills Illuminate the Future Training Action' in 2023, cultivating a total of 138000 technical and skilled talents, providing free skills training in electrical engineering, home economics, beauty and other fields, establishing labor cooperation relationships with 80 cities, and stabilizing 1.9 million migrant workers throughout the year. The employment stability has significantly improved after the training, with a 91% employment rate for caregiver training that meets the needs of elderly care and household management in first tier cities, far higher than traditional planting technology training, directly driving rural households to increase income.

The allocation of educational resources has intergenerational transmission effects. The improvement of parents' education level not only increases family income, but also attaches more importance to their children's education, forming a virtuous cycle of "education income increase re education", fundamentally breaking the cycle of poverty, and achieving sustained improvement in living standards.

At the same time, there are still shortcomings in the allocation of educational resources. The teacher structure of some remote rural schools is imbalanced, with insufficient teachers in subjects such as English, art, and physical education; The accuracy of aligning vocational education with market demand needs to be improved, and some training content is disconnected from job positions, which affects the effectiveness of resources. It is necessary to optimize the allocation structure.

6. THE SUPPORTING ROLE OF MEDICAL AND INFRASTRUCTURE RESOURCE ALLOCATION IN THE SURVIVAL AND DEVELOPMENT OF RESIDENTS

Medical and infrastructure resources are the fundamental guarantee for the survival and development of residents in poverty-stricken areas. Their level of improvement directly affects health and safety, production efficiency, and convenience of life, and is the core support for improving living standards.

The balanced allocation of medical resources effectively safeguards the health rights and interests of residents. China has tilted resources towards poverty-stricken areas and improved the three-level medical network in counties and villages through the construction of county-level medical communities and the enhancement of grassroots medical capabilities project. The service capacity of county-level hospitals in poverty-stricken counties has significantly improved, and township health centers and village clinics have been equipped with basic medical equipment, achieving the goal of

"minor diseases not leaving the village and common diseases not leaving the township", reducing medical costs, and reducing the pressure of medical expenses on family life. At the same time, the triple medical security system covers disadvantaged groups, with a relatively high reimbursement rate for hospitalization expenses. Family doctor contract services assist in chronic disease management, significantly improving residents' health levels and enhancing production capacity. Taking Zhashui County (poverty-stricken county) in Shaanxi Province as an example, after the establishment of the county-level medical community in 2021, the county integrated the three-level medical resources of the county and rural areas, and the coverage rate of grassroots medical staff training reached 100%. The diagnosis and treatment capabilities were improved through the "county hospital leading township, township leading village" model. In 2023, the actual reimbursement ratio of hospitalization expenses for rural residents in the county exceeded 70%, the standardized management rate of chronic diseases increased to 85%, and the incidence of poverty caused by illness was controlled within 0.5%. The data is in line with the general effectiveness of medical security in poverty-stricken counties in China.

Breaking the geographical isolation of poverty-stricken areas through transportation infrastructure. The construction of "village to village" and "group to group" highways has achieved the goal of connecting every county with highways, every township with oil roads, every village with hardened roads, and most administrative villages with passenger cars. This not only facilitates residents' travel, but also reduces the transportation cost of agricultural products. For example, in the Ailao Mountain area of Yunnan Province, the construction of industrial roads has made the transportation of characteristic agricultural products more convenient, resulting in a significant increase in residents' sales income; Simultaneously attracting external investment and tourists, driving the development of rural tourism and agricultural product processing industries, and creating employment opportunities [5]. For example, in Dulongjiang Township, Nujiang Prefecture, Yunnan Province (formerly a deeply impoverished area), after the completion of the Gaoligong Mountain Tunnel in 2014, the geographical isolation was completely broken, and the planting area of grass and fruit increased from less than 10000 mu before the access road to more than 70000 mu. In 2023, the per capita grass and fruit income of households exceeded 15000 yuan, and the per capita net income of farmers reached 15000 yuan; After the access road, the number of tourists received by rural tourism exceeded 120000, driving more than 500 villagers to find employment and achieving the transformation of 'access to poverty alleviation and industry to increase income'.

Water and electricity resources ensure basic living and agricultural production. The rural drinking water safety project solves the problem of residents' drinking water, significantly increases the popularity of tap water, and improves the quality of drinking water; The rural power grid renovation achieves household electricity supply and stable power supply, which not only meets daily electricity needs, but also provides energy for agricultural irrigation and product processing, promotes the transformation of traditional agriculture to modern agriculture, and improves production efficiency and income levels.

Network infrastructure facilitates access to the digital economy. The administrative villages in poverty-stricken counties have a high proportion of 5G and fiber optic access, and rural broadband coverage is extensive. Residents can conveniently use services such as e-commerce shopping, remote medical care, and online education; The rapid development of rural e-commerce has led to farmers in impoverished areas selling agricultural products through e-commerce, resulting in a significant increase in income compared to traditional models. Digital infrastructure has become an important support for improving living standards.

7. PRACTICAL PATH AND POLICY IMPLICATIONS FOR OPTIMIZING RESOURCE ALLOCATION IN IMPOVERISHED AREAS

Based on the impact mechanism and practical problems of resource allocation on the living standards of residents in poverty-stricken areas, optimizing resource allocation requires adhering to the principles of "precise matching, diverse collaboration, and mechanism guarantee", and constructing practical paths from the aspects of demand matching, investment system, and policy implementation.

One is to adhere to precise allocation and match differentiated needs. There are differences in resource gaps among different poverty-stricken areas, and a dynamic monitoring mechanism for resource demand needs needs to be established to identify regional resource gaps through field research, resident feedback, etc., to avoid a one size fits all approach to resource allocation and accurately match residents' actual needs [6].

The second is to build a diversified collaborative investment system and broaden supply channels. A single government investment is difficult to meet demand, and a mechanism of "government led, market participation, and social support" should be formed: the government should increase fiscal transfer payments to ensure public welfare resources such as education and healthcare; Attract market capital to invest in characteristic industries, rural tourism, and other fields through policies such as tax incentives and land security; Guide social organizations to focus on education assistance, medical aid, and supplement government resources.

The third is to strengthen the flow and integration of resources and improve utilization efficiency. To address the issue of dispersed resources, establish a cross regional flow mechanism and promote the sharing of high-quality education and medical resources in urban areas; Integrate similar resources, such as creating industrial clusters and building medical collaboration systems; Establish a supervision and assessment mechanism to track resource utilization efficiency and resident satisfaction, and avoid waste.

The fourth is to improve policy guarantees to ensure sustainability. Incorporate resource allocation into the overall plan for rural revitalization, clarify key areas, investment standards, and responsible parties; Establish a unified resource allocation system between urban and rural areas to narrow the urban-rural gap; Protect the rights and interests of special groups, strengthen grassroots governance capabilities, and ensure policy implementation.

The fifth is to stimulate residents' sense of subjectivity and form a pattern of joint construction and sharing. Respect the status of residents as the main body and allow them to participate in resource allocation decisions; Strengthen publicity and guidance, enhance awareness of resource conservation, and guide participation in facility management and maintenance; By stimulating endogenous motivation through skill training, residents can be transformed from beneficiaries to co builders, forming a virtuous cycle.

8. CONCLUSION

Resource allocation is the core factor affecting the living standards of residents in poverty-stricken areas, and its allocation directly determines the survival foundation, development ability, and equal opportunities of residents in poverty-stricken areas. This article systematically analyzes the five dimensions of resources: education, healthcare, infrastructure, industrial support, and public services. It confirms that resource allocation affects residents' living standards through the transmission path of "basic guarantee capacity improvement opportunity expansion", from the aspects of income level, health status, convenience of life, and development opportunities. Different resource dimensions work together and form synergy, jointly supporting the continuous improvement of quality of life.

The current resource allocation in poverty-stricken areas in China has achieved significant results, with expanded coverage of educational resources, improved medical service capabilities, improved infrastructure conditions, strengthened industrial support, and expanded coverage of public services, directly promoting a historic leap in residents' living standards. However, there are still shortcomings in resource allocation, such as insufficient precision, significant urban-rural gaps, incomplete diversified investment mechanisms, and the need to improve resource utilization efficiency, which constrain further improvement of living standards.

Optimizing resource allocation requires multidimensional efforts: adhering to the precision oriented matching of differentiated needs, building a diversified collaborative investment system to broaden supply channels, strengthening resource flow and integration to improve utilization efficiency, improving policy guarantee mechanisms to ensure sustainability, stimulating residents' awareness of the subject, forming a pattern of co construction and sharing, and promoting the transformation of resource allocation from "total investment" to "precision and efficiency", and from "urban-rural imbalance" to "balanced sharing".

In the future, with the deepening of the rural revitalization strategy, resource allocation will pay more attention to the unity of quality and efficiency, fairness and sustainability. Optimizing resource allocation is a long-term task that requires coordinated efforts from policies, markets, society, and residents to improve mechanisms and solve problems in practice, so that residents in poverty-stricken areas can share the fruits of development and continuously improve their quality of life and happiness index.

REFERENCES

- [1] Dong Y, Jin G, Deng X, et al. Multidimensional measurement of poverty and its spatio-temporal dynamics in China from the perspective of development geography [J]. *Journal of Geographical Sciences*, 2021, 31(1): 130-148.
- [2] Rambodagedara R, Silva D A C, Perera S. *Agro-tourism development in farming community: Opportunities and challenges* [M]. Colombo, Sri Lanka: Hector Kobbekaduwa Agrarian Research and Training Institute, 2015.
- [3] Chen C, Pan J. The effect of the health poverty alleviation project on financial risk protection for rural residents: evidence from Chishui City, China [J]. *International journal for equity in health*, 2019, 18(1): 79.
- [4] Robinson B. Using distance education and ICT to improve access, equity and the quality in rural teachers' professional development in western China [J]. *International Review of Research in Open and Distributed Learning*, 2008, 9(1): 1-17.
- [5] Magazzino C, Mele M. On the relationship between transportation infrastructure and economic development in China [J]. *Research in Transportation Economics*, 2021, 88: 100947.
- [6] Liu Y, Guo Y, Zhou Y. Poverty alleviation in rural China: Policy changes, future challenges and policy implications [J]. *China Agricultural Economic Review*, 2018, 10(2): 241-259.