

## Research on Influencing Factors of Rural Development Based on fsqca —Survey from Rural Areas in Central China

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### **Abstract**

*To further explore the fundamental causes of the central rural growth, taking Dong'an County of Hunan Province as an example, according to the economic growth levels: high, middle and low, a field survey was conducted in nine villages of three townships in Dong'an County, it discovered that fiscal revenue and education played a core role in the per capita governable income of rural residents, medical care, cultivland and infrastructure are support. In addition, education investment, decentralization of government finance and the village committee cadres construction will also promote economic progress. To test the objectivity of the research conclusion, the fsQCA examined the county statistics from 2009 to 2018, and gets the conclusion consistent with the survey.*

**Key words:** *Farmers' income, Regional fiscal revenue, Education level, fsQCA*

### **I. Introduction**

On November 23, 2020, China has lifted all 832 poverty-stricken counties out of poverty under the current standard. So far, the goal of eliminating absolute poverty has been completed. In order to explore the actual effect of rural poverty reduction and income increase in Central China, we selected Dong'an County of Hunan Province for field investigation. Hunan Province is a major agricultural province in Central China, with typical agricultural characteristics. Although Dong'an County has developed transportation and typical cultural characteristics, the long-term periodicity and weakness of agriculture make the economic development level of Dong'an County always in the lower 20% level of Hunan Province. Dong'an County won the title of "national agricultural product quality assurance county" in 2017. The local economy has made some progress under the strong support of the "Rural Revitalization" strategy and national preferential policies, but its problems in poverty alleviation and "agriculture, rural areas and farmers" are still prominent. Wu Xiaolong et al. <sup>[1-2]</sup> pointed out that rural development still lags behind, and it is very difficult to increase farmers' income at present. In order to improve farmers' income and improve their quality of life, this paper studies the necessity analysis of single conditions and the sufficiency analysis of configuration conditions, so as to test the accuracy of our research conclusions. At present, the research on poverty reduction and income increase in rural areas mostly focuses on three levels: finance, education and finance. From the financial perspective, Luo Dong et al. <sup>[3-4]</sup> found that the increase of financial support in agriculture in recent years has not only improved the overall output capacity of agriculture, but also led to the increase of farmers' income. Kong Xiangzhi et al. <sup>[5]</sup> found that the impact of China's fiscal policy on increasing farmers' income mainly lies in that all kinds of fiscal expenditure will significantly increase farmers' income, and the expenditure on rural social undertakings has the greatest impact. Sun Zhihong et al. <sup>[6]</sup> found that Chinese rural scientific and technological innovation is related to finance, so we should actively give play to the guiding and supporting role of finance, so as to drive rural economic progress. From the perspective of education, Wang Jiayi et al. <sup>[7-8]</sup> proposed that education can promote the progress of human capital and significantly affect the income level of rural residents in China. Therefore, we should pay attention to the investment and distribution of rural education resources. The research of Shi Zhile <sup>[9]</sup> shows that investing in human capital will significantly increase income. If families do not pay enough attention to education and lead to insufficient investment, they may fall into poverty. It can be found that education is of great significance in reducing poverty and increasing income. From the financial perspective, the role of financial development in poverty reduction mainly lies in increasing the possibility of the poor to participate in financial

business. By reducing the threshold of credit business, they can participate, which will help the poor improve their conditions and get out of difficulties<sup>[10]</sup>. Squire et al.<sup>[11-12]</sup> found that financial development has different effects on groups at different income levels. It plays a greater role on poor groups than on rich groups. It can increase the income of low-income groups by about 80%, so as to reduce the gap between the rich and the poor. Liu Jinquan et al.<sup>[13]</sup> found that there are differences in the impact of financial development on rural and urban income, but financial development can promote economic development, alleviate poverty, and then curb the excessive income gap between the two.

Based on the above research, it is found that most of the literature studies its role from a single angle, and rarely combines these factors to empirically test its necessity, or introduces the importance of the combination of these factors only from the theoretical aspect. In order to achieve the effect of reducing poverty and increasing income in rural areas, to a greater extent, multiple factors work together. Therefore, this paper will test the necessity of single conditions and the sufficiency of configuration conditions through the method of Fuzzy-Set Qualitative Comparative Analysis (fsqca), so as to demonstrate how regional financial revenue, education level, medical security, cultivated land area, infrastructure and other factors work together to improve the income of rural residents.

## II. Economic development of Dongan County in Hunan Province

### 2.1 Basic situation

Dongan County is located in the upper reaches of the Xiangjiang River and belongs to the southwest of Hunan, with a total area of 2219 square kilometers and a population of 630000. In recent years, the economy of Dong'an County has developed rapidly, the construction of grass-roots health service system has been improved, township health centers are also expanding the coverage of general practitioners, and all kinds of medical infrastructure are becoming more and more complete. In terms of culture and education, Dongan County built 20 boarding and small-scale schools in 2020, the quality of rural schools has improved, which has promoted the development of local education.

(1) Convenient transportation. Dong'an is the first county where the Xiangjiang River flows into Hunan. The total water flow in the territory is 50.4km, and the waterway transportation is very convenient. Moreover, thanks to the construction of Hunan Guangxi railway, hengkun Expressway and G55 expressway, its land transportation is also very developed, known as the "gateway to southern Hunan". In recent years, with the advancement of highway construction in Dong'an County, 96 km of highway construction has been completed in rural areas in 2019, and the construction of cement road in natural villages has reached 299 km, the traffic rate of each administrative village has reached 100%, and the rural highway network is becoming more and more perfect. The development of transportation also promotes the revitalization of industry and tourism, such as the rapid rise of "transportation + rural tourism" and "transportation + industrial development", which not only improves the added value of roads, but also expands the space for farmers to increase their income, showing the diffusion effect of driving wealth by road construction.

(2) Distinctive local characteristics and culture. Martial arts culture is the most important feature of Dong'an County. Combined with tourism, it has embarked on a development path of promoting tourism by martial arts and improving tourism quality by martial arts culture. For example, the "Hunan martial arts competition" (2018), "peak Hunan · six famous mountain climbing competition" (2019), "Dongan Yilian Cup National Aerobics Competition" (2020) and other events hosted by Dong'an County, strive to promote the regional business card of "de Wu Dong'an". Since 2016, Dong'an County has regularly held Wushu Culture Tourism week at the end of November and early December every year, which has promoted the formation and development of local cultural characteristics and become a well-known platform for Wushu exchange and cooperation in Hunan.

(3) Industrial development is integrated with agricultural economic development. In recent years, both traditional industries, emerging industries and characteristic industries in Dong'an County are closely related to agricultural

economy. For example, the thermal power industry in LuHong Town, from the early land acquisition and demolition to the subsequent factory recruitment, the local residents have increased employment opportunities in addition to the compensation for land acquisition, which has promoted the development of industrial economy. Another example is leek village in damiaokou town. With the help of poverty alleviation cadres stationed in the village, farmers develop Nanzhu industry according to local conditions, which not only revitalizes the local Nanzhu resources, but also increases their family income by working in the processing plant.

## 2.2 Field investigation

During the field investigation, this paper adopts the methods of discussion, which are divided into high, medium and low levels according to the level of economic development, and then uses the sampling survey method to select LuHong town with the highest level of economic development (zhaojiating village, Yongxing Village and dajiantang Village), Zixi town with medium level of development (Heyetang village, Wuyi village and lubutou Village) Damiaokou town (Yuanjia village, Gaojian village and Jiucui Village) has the lowest development level. Among the nine administrative villages, zhaojiating village and Heyetang village have the highest economic development level, followed by Wuyi village, lubutou village, Yongxing Village and dajiantang village, and finally Yuanjia Village (provincial poverty-stricken village removed its hat in 2018), Gaojian Village (provincial poverty-stricken village removed its hat in 2017) and Jiucui village (provincial poverty-stricken villages removed its hat in 2018) During the investigation, we held a small-scale symposium with 15 participants from 10 units, including the county agriculture and rural Bureau, the County Finance Bureau, the county finance office, the people's Bank of China, rural credit cooperatives, the Agricultural Bank of China, the county Statistics Bureau, the County Education Bureau, the county civil Affairs Bureau and the County Social Security Bureau, so as to ensure that this article has a macro and accurate understanding of policy supply and capital supply data. Then, at the point of township research, we communicated with township cadres first, then the research group dispersed to the villagers' homes or gathered together to conduct a questionnaire survey. 417 questionnaires were sent out, and 385 effective questionnaires were collected after data cleaning, with an effective rate of 92.33%.

Table 1 Income and expenditure survey

Questions	Category	Number (person)
Source of income	wages	167
	farming	183
	government subsidies	26
	investment	51
	child support	78
	land circulation	46
Annual household income (yuan)	below 5000	106
	5000-10000	51
	10000-20000	74
	20000-40000	68
	over 40000	86
Money sent back by relatives (yuan)	below 2000	223
	2000-5000	36
	5000-10000	31
	10000-20000	45
	over 20000	50
Annual household expenditure (yuan)	below 5000	66
	5000-10000	50
	10000-20000	112

	20000-40000	84
	over 40000	73
Object of expenditure	life	89
	education	155
	social spending	178
	medical care	125
	production	51

Data source: according to the questionnaire

(1) Disposable income is the fundamental factor affecting the quality of life. As shown in Table 1, the number of respondents with an annual household income of less than 20000 yuan reached 60%, and only 22% of households with an annual household income of more than 40000 yuan. In terms of household expenditure, more than 40% of households with annual expenditure of more than 20000 Yuan, favor expenditures take the first place, followed by education and medical care, and lastly production. Influenced by China's concept of paying attention to human relations, rural families pay more attention to "human society". Not only do they spend more frequently, but also the cost of single expenditure is large. The deeper their friendship, the greater the cost. Therefore, the cost in this regard occupies the primary position in the expenditure of rural families. Medical treatment ranks third in the purpose of expenditure. In the survey sample, most respondents are the elderly and children left at home, which leads to the high data. Similarly, since most of the nine administrative villages surveyed are left behind by the elderly and children at home, production is mainly to ensure basic survival needs rather than improve the quality of life. Obviously, the factors affecting farmers' income are some of the most basic aspects of life, that is, "whether the money is enough to spend and whether it can ensure the basic standard of living".

(2) Education expenditure plays an important role in household expenditure. According to the investigation, the education of migrant children in Dong'an County mainly includes the following three categories: boarding, renting or buying a house in the county, and choosing a nearby school. These three types of education, especially the first two types, cost the most, and they all take the form of self payment without state subsidies, so they have become the fixed expenditure of rural residents. Generally speaking, the higher the level of local economic development, the denser the distribution of local schools, the stronger the strength of teachers, and the higher the probability of students going to school nearby. As the economic development level of Dong'an County has always been at the lower 20% level of Hunan Province, few local residents' children go to school nearby, most of them choose boarding and accompanying students. Therefore, education expenditure has become the highest expenditure of farmers in addition to social expenditure. This shows that in the hearts of the new generation of migrant farmers, they have realized the importance of improving the education of the next generation of children, and hope to change the poverty situation of this generation through education.

(3) The mode of financial allocation has an impact on the scale of financial expenditure. At present, according to the actual situation of our country, some financial transfer payment systems adopt the traditional unified allocation method, and there is no differential allocation according to the economic level and economic contribution rate of each township. From the survey, LuHong town with the highest level of economic development is constrained by the lack of autonomy of local finance, which has seriously affected the enthusiasm of local villages and towns to develop economy. In contrast, damiaokou Town, which has the lowest level of economic development, fiscal centralization has expanded the scale of fiscal expenditure without a sense of restraint. The reason is that the economic development of damiaokou town depends more on the financial allocation of the county government under the arrangement of the financial decentralization system. Such decentralization makes the local government more inclined to increase financial expenditure to promote economic progress. When managing, the local government tends to be "responsible upward" rather than "responsible downward". Whether it is pursuing job promotion or other performance goals (such as infrastructure construction and image construction projects), this is particularly important for officials in economically backward areas who are at disadvantage in "promotion" due to economic

development conditions. This also distorts the fiscal expenditure in different regions. In other words, the difference of "promotion" environment will induce the differentiation of local government behavior, so that fiscal decentralization will affect the scale of local fiscal expenditure. Therefore, we infer that the higher the fiscal autonomy, the more effective the implementation of fiscal policy, and the more it can promote economic progress and drive the growth of farmers' income.

Table 2 Land survey

Questions	Index	Number (person)
Land classification	paddy field	218
	dry land	183
	hill	148
	fish pond	44
Land use	self planting	228
	lease	160
	abandonment	115
	collection	15

Data source: according to the questionnaire

Table 3 Economic characteristics of Dong'an County

Year	Proportion of primary industry (%)	Sown area of crops (1000 HA)	Employment in tertiary industry (person)
2009	26.3	99.57	/
2010	25.3	99.63	/
2011	26.2	97.42	/
2012	23.6	99.46	/
2013	23.0	97.89	61800
2014	22.9	102.88	66169
2015	22.6	103.81	66582
2016	22.6	104.34	68780
2017	21.1	96.49	/
2018	17.3	92.92	/

Data source: Statistics Bureau of Dong'an County (2009-2018)

(4)The abandonment degree of rural cultivated land is high. It can be seen from table 2 that nearly 59% of the respondents cultivate part of their own land, and nearly 42% of the farmers rent the land. Except for self planting and leasing, the rest of the land is basically abandoned, with abandonment proportion of 30% (since multiple land use categories can be selected, we use 385 effective questionnaires as the base for calculating the proportion). The reasons for the barren land are as follows: first, the land irrigation system is seriously abandoned. As the main rice planting area in China, 90% of the land in Dong'an County is paddy fields, and the irrigation system is the decisive factor to ensure the number of paddy fields and rice yield. From the overall situation of Dong'an County, only the land close to the water source can be preserved, and those far away from the water source have been deserted. The financial model of unified allocation restricts the maintenance funds of the irrigation system to a certain extent. In addition, the pursuit of GDP and the relative low efficiency of traditional rice planting exacerbate the misappropriation of maintenance funds, resulting in the shortage of special maintenance funds of the irrigation system; Second, the benefit of rice is low. Although the finance of Dong'an County subsidizes 275 yuan in cash per mu of rice, it still can not make up for farmers' purchase of fertilizers, production tools and other productive inputs, resulting in the abandonment of cultivated land; Third, there is a shortage of rural labor force. Nowadays, more and

more young labor force flock to cities, which is another important reason for the desolation of land. It can be seen from table 3 that the proportion of primary industry in Dong'an County decreased from 26.3% in 2009 to 17.3% in 2018, the agricultural development showed signs of recession. In addition, the number of employees in the tertiary industry increased from 61800 in 2013 to 68780 in 2016. It can be inferred that the above phenomenon of barren cultivated land is real.

(5)The development of transportation has effectively promoted rural tourism. As an infrastructure, highway construction is the most fundamental basic investment of the government. In recent years, it has become the support of a new round of economic growth. By the end of 2019, the natural village roads in Dong'an County have reached 1139 kilometers, and a total of 2091 kilometers of roads have been built in the county, which has greatly promoted the development of rural tourism. At present, there are mainly four "micro tourism" routes, namely red tracing tour, food discovery tour, self driving autumn tour and Shun praying tour. In addition, the "eight scenic spots along the belt" jointly developed by Hunan Yueliangwan group and LuHong town attracts tens of thousands of tourists every year; Jianjialing village road has driven the development of local "black tiger" planting industry and tourism, and can increase the output value of nearly 2 million yuan for this provincial poor village every year; Baiyashui village road has attracted Nanzhu processing, bamboo barrel wine and other industrial enterprises to set up factories in the village, increasing the collective income of the village by more than 60000 yuan every year. Today, the pattern of "highway + industry" has been gradually formed and improved, further promoting the in-depth integration of agriculture, culture and tourism.

(6)Family income is the basic guarantee of family stability. In the process of field research, it is found that a more obvious and severe problem is the "divorce rate". Among the three administrative villages with the most developed, moderately developed and backward rural economy in Dong'an County, the last administrative village has the highest divorce rate. This phenomenon is particularly prominent among the "poor households" in the "poor villages" who are poor due to illness. Generally speaking, the poor people have poor physical quality and medical conditions, and their awareness of health and insurance ability are also relatively poor, the proportion from minor illness to serious illness will also be higher. Therefore, the more poor areas are, the more prominent the problem of poverty caused by illness. During the interview and survey, we found that there was no divorce caused by economic conditions in the two administrative villages with the best economy, but more than 80% of the divorce caused by economic reasons in the two administrative villages with the worst economy. The main reason for divorce is that poverty brings excessive pressure on family relations. Especially when the cause of poverty is disease, the family economic situation will deteriorate obviously. In the face of this high expenditure, women often choose divorce because they can't bear the pressure. This shows that the richer the family, the lower the divorce rate, and the poorer the family, the higher the divorce rate. In the concept of rural family, family income is the primary factor reflecting the degree of family prosperity, and family marriage is an important factor reflecting the stability of family relations. Therefore, family income is the basic guarantee of rural family stability.

Based on the above research, we draw the following conclusions: education and regional fiscal revenue are important conditions affecting farmers' income. Considering that China has established a basic medical insurance system, we consider that education and finance have a stronger impact on income than medical. Similarly, irrigation system and infrastructure construction need financial support, and the corresponding cultivated land area and highway construction will be less important than regional financial revenue.

### III. Empirical analysis

From the field survey, we have learned the importance of education, finance, medical treatment, cultivated land and highway construction to farmers' income. Considering that the field survey data is subjective and in order to test the accuracy of the survey conclusion, we will use macro data to further test this part.

#### 3.1 Research methods

### 3.1.1 Study design

This paper uses fsQCA to examine the eight factors, such as education level, regional fiscal revenue, hospital beds, cultivated land area, highway mileage, total registered residence population, regional GDP, and the balance of foreign currency loans of financial institutions, which affect the per capita disposable income of rural residents. The biggest feature of QCA is that it can explore the joint effect of multiple interactive factors on specific phenomena. In the specific analysis process, the traditional regression method focuses more on analyzing the net effect of a single explanatory variable, while fsqca can analyze the configuration relationship between multiple influencing factors. Although there are other methods to test the configuration relationship, these methods can not effectively distinguish the importance of these explanatory variables and the differences when they play their roles.

### 3.1.2 Samples and data

The research object of this paper is to take Dong'an County, Hunan Province as an example, combined with the macro data from 2009 to 2018. In recent years, driven by the national "Rural Revitalization" strategy, Dong'an County has actively developed the rural economy and become a model village for rural poverty alleviation. Therefore, taking the economic development indicators of Dong'an County as a sample is representative of the rural economic development under the "Rural Revitalization" strategy. In addition, Hunan Province is a medium-level development province in Central China, and the economic level of the city where Dong'an County is located is also medium. Therefore, the sample indicators selected in this paper are objective. In the study, Dong'an County is taken as the benchmark, and the proportion of Dong'an County in Hunan Province is taken as the specific variable for each factor. The data are derived from the statistical yearbook of Hunan Province, the statistical bulletin of Dong'an County and its government work report.

### 3.1.3 Measurement and calibration

In fsqca, each condition (i.e. the eight influencing factors in this paper) and result (per capita disposable income of rural residents) are regarded as a set respectively. The so-called calibration is to give each set membership score. In the selection of calibration methods, this paper uses the direct calibration method, that is, three qualitative anchor points are used for calibration: complete membership, complete non membership and intersection. It is the most widely used calibration method at present <sup>[14]</sup>. Referring to the setting of anchor point threshold by Zhang Ming et al. <sup>[15]</sup>, this paper takes 95%, 5% and 50% as the thresholds of the above three anchor points respectively.

## 3.2 Research results

### 3.2.1 Necessity analysis of single condition

Consistent with existing studies, this paper first tests whether a single condition constitutes a necessary condition for rural residents' per capita disposable income, that is, when the result of rural residents' income increase exists, which factors will always appear as necessary conditions. Referring to the judgment criteria of Schneider <sup>[16]</sup>, the condition that the consistency score is greater than or equal to 0.9 is called the necessary condition, the results are shown in Table 4.

Table 4 Analysis of the necessary conditions for the increase of rural residents' income

Antecedent condition	Per capita disposable income of rural residents	
	uniformity	Coverage
Total population of registered residence (10000 persons)	0.7569	0.7900
Hospital beds (10000)	0.6633	0.8560
Regional GDP (100 million yuan)	0.4601	0.6854
Regional fiscal revenue (100 million yuan)	0.9163	0.9426
Balance of domestic and foreign currency loans of financial institutions (100 million yuan)	0.5737	0.7639

Education level (10000 people)	0.9103	0.9641
Cultivated land area (1000 HA)	0.8346	0.7338
Highway mileage (km)	0.6254	0.7336

It can be seen from table 4 that the consistency level of regional fiscal revenue and education level is greater than 0.9, indicating that these two conditions are necessary conditions affecting the per capita disposable income of rural residents, that is, they can still make strong independent interpretation of the outcome variables when they change separately.

### 3.2.2 Adequacy analysis of conditional configuration

The most important thing of QCA method is to analyze the condition configuration, that is, to study the combination of multiple conditions and explain the results. Similarly, the consistency level is our judgment standard. The lowest consistency score determined in this paper with reference to Zhang Ming et al. [17-18] is 0.8. Fsqca will output complex solutions, intermediate solutions and reduced solutions respectively. Most researchers tend to report intermediate solutions because intermediate solutions are closer to theory and practice and more in line with our research objectives. Therefore, this paper reports intermediate solutions here and divides antecedent conditions into core conditions and auxiliary conditions, in order to better distinguish the differences when different conditions play a role in the follow-up analysis. The intermediate solutions are combined and analyzed, and the results are shown in Table 5.

Table 5 Configuration analysis of rural residents' income increase

Antecedent condition	solution			
	1	2	3	4
Total population of registered residence (10000 persons)	●		●	●
Hospital beds (10000)		●		●
Regional GDP (100 million yuan)				
Regional fiscal revenue (100 million yuan)		●	●	●
Balance of domestic and foreign currency loans of financial institutions (100 million yuan)		●	●	
Education level (10000 people)	●	●	●	
Cultivated land area (1000 HA)			●	●
Highway mileage (km)	●			●
uniformity	0.9430	1	1	1
Original coverage	0.5278	0.4382	0.3386	0.4541
Unique coverage	0.0597	0.1015	0.0199	0.0318
Overall solution consistency	0.9575			
Overall solution coverage	0.7191			

Note: ● = core condition exists; ● = Auxiliary conditions exist; "Space" = this condition can exist or be absent

As shown in Table 5, the consistency of each configuration solution is greater than 0.8, the consistency of the overall solution is 0.96 and the coverage is 0.72, indicating that the above conditional configuration has made a strong



explanation for the results. Horizontally, education level and regional fiscal revenue have appeared three times as the core conditions in the four configuration solutions. Vertically, the education level in configuration 1 has played a central role, and household registration and mileage have played a supporting role. In configuration 2, regional fiscal revenue and education level have played a core role, and hospital beds and the balance of domestic and foreign currency loans of financial institutions have played an auxiliary role. In Configuration 3, regional fiscal revenue and education level are the core conditions, and the registered population, the balance of loans in domestic and foreign currencies of financial institutions, and the cultivated land area are auxiliary conditions. In configuration 4, the regional fiscal revenue is the core condition, and the registered population, hospital beds, cultivated land area, and highway mileage are auxiliary conditions. Analyze the above four configurations:

In the first intermediate solution, the level of education plays a core role. Its core role is not only reflected in that education will improve the level of human capital, which will have a positive driving force on farmers' income, but also reflected in that the reduction of education expenditure will indirectly increase farmers' income in the short term; The registered residence population plays a supplementary role. Combined with the specific conditions of Dongan County, there are more elderly people and higher divorce rate. Therefore, the local population, labor structure and demographic dividend should be taken into account. Highway mileage plays an auxiliary role. The quality of rural highway construction is closely related to the rural people getting rid of poverty and getting rich, and the development of agricultural industry; In the second intermediate solution, in addition to the level of education, regional fiscal revenue also plays a core role, indicating that the increase of regional fiscal revenue will significantly promote the increase of farmers' income. When regional fiscal autonomy is enhanced and fiscal revenue is increased, the government will have more quota to use for people's life, such as increasing farmers' income through social welfare and transfer payment; As an auxiliary condition, hospital beds are the basic investment of the government in society and an embodiment of social welfare. In addition, the compensation function of medical insurance will reduce medical expenditure and indirectly increase income; The balance of domestic and foreign currency loans of financial institutions plays an auxiliary role. When the external loans of financial institutions increase, the disposable income of the people will increase accordingly; In the third intermediate solution, the regional fiscal revenue and education level are still the core conditions, and the registered population and the balance of loans in domestic and foreign currencies of financial institutions are auxiliary conditions, so I will not repeat them. The last auxiliary condition is the area of cultivated land. Combined with the situation of Dong'an County, agriculture is the pillar of local economic development and an important guarantee for farmers' life, so it also has an important impact on farmers' income; In the fourth intermediate solution, regional fiscal revenue still plays a central role, registered residence population, hospital beds, cultivated land area and highway mileage play an auxiliary role. The role of various antecedents on farmers' income will not be repeated here.

### 3.2.3 Robustness test

This paper improves the consistency to 0.85 for testing. When the consistency level is improved, the necessary conditions and sufficient conditions of configuration analysis are completely consistent with the conditions under the original consistency level, and the results are basically unchanged, indicating that the research conclusion of this paper is robust.

## IV. Discussion and Enlightenment

This paper discusses the core and auxiliary conditions to promote the increase of farmers' income through fsqca method, and obtains the conclusions consistent with the survey, which are summarized as follows:

First, education is the core condition to promote the increase of farmers' income. Education can promote the progress of human capital and have an important impact on income. In our field research, we found that rural families spend very much on education, which is an important condition affecting the income of rural residents. Dongan County government should ensure the investment of rural education funds, actively improve various financial support policies, implement regional financial support for education, and make up for the investment and expenditure of rural

residents on education to a certain extent, so as to improve the income of rural residents.

Second, regional fiscal revenue is the core condition to promote the increase of farmers' income. Because the finance of Dong'an County is a unified allocation method, and fiscal decentralization will greatly stimulate the enthusiasm of local governments for economic development. Under normal circumstances, the local government knows the local situation better than the superior government, so the implementation of financial policies by the local government will be more conducive to rural economic development. Dong'an County government should appropriately give township governments certain financial autonomy, so as to give better play to the management role of the local government, implement fiscal policies that are closer to reality to promote economic growth and increase farmers' income.

Third, medical security is an auxiliary condition to promote the increase of farmers' income. This conclusion is related to the basic medical insurance system that has been established in China. It is consistent with the residents in the survey area. The new rural cooperative medical insurance purchased by the local people can reduce the medical burden to a certain extent, and the medical expenditure is guaranteed to a certain extent compared with the complete self expenditure of education. And for farmers, unless the condition is very serious, they will not easily go to the hospital. In addition, the higher the level of hospital, the lower the reimbursement proportion of outpatient and inpatient. In addition, there is a certain deductible line standard and reimbursement upper limit, which is another important factor restricting farmers from going to the hospital. Therefore, the role of medical treatment is limited.

Fourth, cultivated land area and highway construction are auxiliary conditions to promote the increase of farmers' income. Irrigation system is an important factor to determine the size of cultivated land, and as an infrastructure, irrigation system depends on government investment. In view of the gradual increase in the desolation of cultivated land in Dong'an County in the past two years, Dong'an County government should constantly establish and improve the land transfer system, guide and encourage farmers to lease, transfer and subcontract idle cultivated land, and promote the rational transfer of rural cultivated land. In addition, it is necessary to strengthen the construction of water conservancy facilities, increase the financial investment and implementation of irrigation system maintenance funds, and improve the current situation that farmers' paddy fields cannot be irrigated. Continue to promote the highway construction in Dong'an County, increase the basic financial investment in this regard, and use the highway to drive the development of tourism and other related industries.

## **V. Conclusion**

Through field research, combined with the macro data of Dong'an County from 2009 to 2018, this paper uses fsqca method to obtain the intermediate solution to promote the improvement of farmers' income from the perspective of conditional configuration. We believe that Dong'an County government should increase the investment in rural education, improve the financial autonomy of local governments, strengthen infrastructure construction, jointly drive the growth of farmers' income with education, finance, cultivated land and highway construction, and pay attention to the compensation effect of medical insurance on farmers' income. In the follow-up research, there are still problems to be further explored. For example, in the process of rural economic development, the election and ability of village committee cadres play a role in farmers' income, and how to comprehensively measure the ability and role of village committee cadres need to be solved and improved.

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