

# "The Journey to Happiness": A Study on the Development of Farmers' Co-operatives through Innovative Benefit-Linking Mechanisms to Help Farmers

-- Based on the Research of Farmers' Co-operatives in 9 Counties of Jiangxi Province

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**Abstract.** The report of the 20th Party Congress stresses that rural revitalisation lies in industrial prosperity, and the mechanism of cooperatives is an important hand for rural prosperity, but the existing benefit linkage mechanism of farmers' cooperatives is not sound, i.e., the ability to create benefits is weak; the effect of benefit incentives is not obvious; the distribution of benefits is unreasonable; and the benefit linkage is not standardised. Does the above benefit linkage mechanism affect the performance of co-operatives? How to build a reasonable and effective benefit linkage mechanism to improve the performance of co-operatives? Based on the research on farmers' cooperatives in nine counties of Jiangxi Province, we found that the "four-in-one" mechanism, i.e., production and marketing, shareholding, credit and risk control, can effectively solve this problem and provide an effective impetus for the realisation of common wealth.

**Keywords:** Farmers' Co-operatives; Benefit Linkage Mechanism; "Four-in-one" Mechanism; Common Prosperity Prediction Model.

## 1. Origin of the Problem and Research Overview

In the report of the 20th Party Congress, comprehensively promoting the revitalisation of the countryside was established as the primary task of achieving a modern socialist country. The core of rural revitalisation lies in the development of a prosperous agricultural industry, the optimisation and upgrading of agricultural structure, the extensive application of agricultural science and technology, and the improvement of the agricultural industry chain. In this process, cooperative economy, as an effective form of organisation, plays an irreplaceable role. Farmers' professional cooperatives, as an important carrier of the cooperative economy, effectively enhance the degree of organisation and market competitiveness of agricultural production by organising farmers to jointly produce and sell, and realise resource sharing and risk sharing.

The mechanism for assisting farmers' benefit linkages is a key element of rural revitalisation and plays a key role in enhancing its effectiveness. Through a series of benefit-sharing and cooperation methods, this mechanism closely links farmers, enterprises, the government and other multi-party subjects, and jointly promotes the comprehensive revitalisation of the countryside. Currently, academic research on the development of farmers' co-operatives empowered by the innovative mechanism of benefit linkage to help farmers is as follows: In China, the concepts of "benefit linkage mechanism to help farmers" and "farmers' co-operatives" are not unfamiliar to most people, and the integration and unification of the concepts of "innovative mechanism to help farmers" and "farmers' co-operatives" is a key factor in promoting the overall revitalisation of the countryside. In China, the two concepts of "assisting farmers with benefit linkage mechanisms" and "farmers' co-operatives" are not unfamiliar to most people, while the discussion and research related to the integration and unification of these two concepts, namely, "innovating mechanisms for assisting farmers with benefit linkage mechanisms and developing farmers' co-operatives", are relatively cold and have a low degree of heat from the public. There is a lot of room for research. At present, domestic scholars' research

on farmers' cooperatives and the mechanism for linking interests to help farmers mainly focuses on the significance of the development of farmers' cooperatives, dilemmas and causes of dilemmas, countermeasures to alleviate the dilemmas of the development of farmers' cooperatives, and the implication of the mechanism for linking interests to help farmers in farmers' cooperatives and its influencing factors in three aspects; abroad, scholars have explored the research of farmers' cooperatives and the mechanism for linking interests to help farmers in a more in-depth manner, especially in the area of farmers' cooperatives. In foreign countries, scholars have conducted more in-depth research on farmers' cooperatives and the mechanism of benefit linkage to help farmers, especially in the area of farmers' cooperatives.

The existing research in the academic world on the innovation of the benefit linkage mechanism for farmers to empower farmers' co-operatives provides an important premise and a solid foundation for this topic, and provides reference and inspiration for our research, but there are still shortcomings: in terms of the depth of the research, the current domestic and foreign research on farmers' co-operatives and the benefit linkage mechanism for farmers is mainly focused on the theoretical level, and there is a lack of in-depth empirical research. In terms of research methodology, existing research mainly adopts the method of literature analysis and lacks methods such as field surveys and case studies, which makes it difficult to comprehensively understand the actual situation of farmers' co-operatives and the mechanism of benefit linkage to help farmers; in terms of research perspectives, existing research is mainly carried out from the perspectives of economics, political science and other disciplines, and lacks multidisciplinary cross-research, which makes it difficult to comprehensively grasp the complexity of the farmers' co-operatives and the mechanism of benefit linkage to help farmers. In terms of research content, existing studies are mainly conducted from the perspectives of economics, politics and other disciplines. In terms of research content, existing studies mainly focus on the development significance of farmers' cooperatives, dilemmas and causes of dilemmas, and lack in-depth exploration of farmers' cooperatives and the mechanism of benefit linkage to help farmers.

Based on the existing research and the current development of the times, this topic keeps the right and innovation, and analyses how to better use the mechanism of assisting farmers' interests to develop new heights of farmers' cooperatives from the dilemmas faced by the new heights of "assisting farmers' interests in the development of farmers' cooperatives", causes of the dilemmas, the role of the mechanism, and the innovation and practice of the mechanism of assisting farmers' interests in the development of new heights, and puts forward The concept of "resources into assets, capital into shares, farmers into shareholders" allows farmers to share more value-added gains from the industry, forming a pattern of complementary advantages and division of labour in the industrial chain between enterprises and farmers. At the same time, this topic also proposes to build a "four-in-one" interest linkage mechanism for farmers, including production and marketing cooperation interest mechanism, shareholding cooperation interest mechanism, credit cooperation interest mechanism, and risk prevention and control mechanism, which will provide a new way to solve the problem of interest linkage of farmers' cooperatives, and open up a spiritual path to promote the revitalisation of the countryside, the affluence of the people, and the construction of a modern socialist country. construction to open up the path of thought and spirit.

## **2. Research Methods and Related Analyses**

### **2.1. Sources of Data**

This study adopts typical sampling and random sampling methods in the field research stage, selecting cooperatives in major counties and districts as research samples to provide data support for the subsequent research: typical sampling reveals the influencing factors of the performance level of farmers' cooperatives through the selection of typical local cooperatives, which can largely represent the essence and characteristics of the research problem; random sampling survey is a random sampling survey because the samples are randomly selected from the whole population, and the

sampling results have the same characteristics as those of the overall survey. Random sampling survey can represent the whole because the samples are randomly selected from the whole, and the sampling results are independent and can effectively reduce the sampling error. And random sampling survey can provide confidence intervals, at a certain confidence level and confidence level, can estimate the overall (i.e., the counties and districts and even the farmers' cooperatives in Jiangxi Province) some parameters, such as the constraints on the performance of farmers' cooperatives in Jiangxi Province. After data screening, a total of 520 co-operatives in 6 cities and 11 counties in Jiangxi Province were selected as research samples, as shown in Table 1.

**Table 1.** Comparison between the research counties and the number of co-operatives

market	Ganzhou City			Yichun City		Xinyu city		Nanchang City	Jiujiang City		Fuzhou City
counties	Yudu County	Shicheng County	ZhangGong district	Gao'an County	Wanzai County	Chongqing water area	new and high-tech zones	East lake area	Wuning County	PengZe county	Lichuan County
Number of cooperatives	54	31	44	52	47	76	26	45	58	33	54

## 2.2. Variable Selection

**Table 2.** Definition of performance variables of farmers' cooperatives

performance	variable name	definition
Growth ability	CA	Evaluation of the following three indicators is combined: (1) The business growth rate is compared with the council's expectations at the beginning of the year (2) The business growth rate is compared with the situation of the previous two years (3) The business growth rate is compared with the peers with similar business (Much worse =1; worse =2; much =3; better =4; much better =5)
profitability	PA	Evaluation of the following three indicators is combined: (1) Profitability is compared with the Council's expectations at the beginning of the year (2) Profitability is compared with the situation of the previous two years (3) Profitability is compared with peers with similar business (Much worse =1; worse =2; much =3; better =4; much better =5)
Member satisfaction	MS	Evaluation of the following three indicators is combined: (1) The satisfaction of the members with the services provided by the cooperative (2) The satisfaction of the members with the management affairs of the cooperative (3) Members' recognition and acceptance of the cooperatives (Very low =1; relatively low =2; general =3; relatively high =4; very high =5. )

### 1. Measurement of farmers' co-operative performance

Based on the basic nature of farmers' cooperatives to provide services for their members and to take into account both economic and social functions, and by drawing on the research methodology of Xu Xuchu and Wu Bin (2010) on the performance of cooperatives, this report chooses three indicators to reflect the performance of the current farmers' cooperatives, and each indicator is the sum of the evaluation of the three sub-indicators: the first one is the "growth capacity", which is the answer to "the ability to grow", the answer to "the ability to grow", and the second one is the "ability to grow". The first is "growth capacity", answering "much worse" with value 1, "worse" with value 2, "almost" with value 3, "better" with value 4, "better" with value 5, "better" with value 6, "better" with value 7, "better" with value 8, and "better" with value 9. The second is "Profitability", answering "much worse" with value 1, "worse" with value 2, "about the same" with value 3, "good" with value 4, "much better" with value 5, The second is "profitability", answering "much worse" with value 1, "worse" with value 2, "about the same" with value 3, "better" with value 4, "much better" with value 5. Third is "member satisfaction", answering "very low" assigns value 1, "relatively low" assigns value 2, "average" assigns value 3, "good" assigns value 4, "much better" assigns value 4, "much better" assigns value 5. The answer "very low" is assigned value 1, "relatively low" is assigned value 2, "average" is assigned value 3, "relatively high" is assigned value 4, and "very high" is assigned value 5.

## 2. Influencing factors of farmers' co-operative performance

Based on the benefit linkage mechanisms discussed in the previous section and considering the actual situation of cooperatives, we use a total of 22 variables from four benefit mechanisms and eight specific forms to reveal the current state of benefit linkage in farmers' cooperatives (see Table 3).

The first mechanism is benefit distribution, which is expressed in the form of equity structure and surplus distribution. In this study, the three variables X11, X12 and X13 are selected to reflect the shareholding structure, mainly based on the following considerations: first, in the process of cooperative establishment, the shareholding of the first largest shareholder reflects the co-operative sponsor and the establishment method; second, in the shareholding structure of the co-operative, the shareholding of the top ten shareholders reflects the result of profit distribution according to the shareholding; and third, whether or not the ordinary members hold the shareholding influences the co-operative's benefit distribution; The three variables X21, X22 and X23 reflect surplus distribution. The nature of the co-operative stipulates that its distributable surplus is mainly used for patronage return, but in practice many co-operatives have the problem of over-representation of dividends by shares.

The second mechanism is benefit incentive, which is expressed in the form of incentive effect and participation level. x31, x32 and x33 variables reflect the effect of incentive mechanism.

The third mechanism is benefit creation, and the specific forms of expression are internal financing and service capacity. x51, x52 and x53 variables reflect the internal financing of farmers' co-operatives, and the first two are the main sources of internal financing of co-operatives; x61, x62 and x63 variables represent the service capacity of co-operatives, which reflects the benefit creation of co-operatives.

The fourth mechanism is benefit security, which is expressed in the form of price protection and risk aversion. two variables, X71 and X72, express the benefit security of the co-operatives, which is reflected by the number of times that the products are purchased at a protected price and the number of times that the services are provided at no or low cost; while three variables, X81, X82 and X83, reflect the degree of risk aversion of the co-operatives.

## 2.3. Model Analysis

### 1. Econometric model construction

Since the three variables of "growth capacity", "profitability" and "member satisfaction" reflecting the performance of farmers' co-operatives in the paper are all ordered categorical variables (all

divided into eight ordered levels), and the three variables of X81, X82 and X83 reflect the degree of risk aversion, the model is constructed as follows. The three variables of "growth ability", "profitability" and "member satisfaction" are all ordered variables (all divided into eight ordered levels), while the benefit linkage is a group of variables composed of multiple variables, so the ordered probability model is adopted to estimate the relationship between the two. Let the regression equation be:

$$Y_i = \beta X_i + \eta_i \quad (i = 1, 2, \dots, n)? \quad ?? \quad (1)$$

**Table 3.** Definition of variables of interest linkage mechanisms of farmers' cooperatives

Interest mechanism	concrete form	argument	definition
Profit distribution	ownership structure	X11	The shareholding amount of the largest shareholder
		X12	The holdings of the top 10 shareholders (0%=0,1%~10%=1,11%~20%=2,21%~30%=3,.....,91%~100%=10)
		X13	Whether ordinary members hold shares (1= yes, 0= no)
	apportionment of profit	X21	Proportion of share capital and dividends (0%=0,1%10%=1,11%~20%=2,21%~30%=3,.....,91%100%=10)
		X22	Benefit the return ratio (0%=0,1%~10%=1,11%~20%=2,21%~30%=3,.....,91%~100%=10)
		X23	Rebate income from the core members
Interest incentive	arousal effect	X31	The proportion of poor household members being lifted out of poverty (0%=0,1%~10%=1,11%~20%=2,21%~30%=3,.....,91%~100%=10)
		X32	Stability of revenue expectations (low =1, middle =2, high =3)
		X33	The annual income of social members is higher than that of non-farmers
	degree of participation	X41	The proportion of the core members to the council (0%=0,1%~10%=1,11%~20%=2,21%~30%=3,.....,91%~100%=10)
		X42	Member withdrawal ability (very weak =0; weak =1; strong =2; strong =3)
Profit creation	internal financing	X51	The total amount of government departments and social donations is 110,000 yuan
		X52	Annual productive income of a cooperative
		X53	The proportion of the surplus income of the cooperatives in the total income (0%=0,1%~10%=1,11%~20%=2,21%~30%=3,.....,91%~100%=10)
	serviceability	X61	Whether to provide unified purchase and marketing, agricultural materials and agricultural technology services
		X62	Whether to set up the postpartum processing business
		X63	Whether to solve the financing for the commune members (If so =1,0= none)
Interest protection	Price protection	X71	Whether the product has been purchased at the protection price (if so =1,0= none)
		X72	Number of free or cheap services provided
	risk aversion	X81	Virtual variables under the supervision of the administration (no =0; yes =1)
		X82	Number of general meetings held in 2018
		X83	The proportion of the members to buy agricultural insurance (0%=0,1%~10%=1,11%~20%=2,21%~30%=3,.....,91%~100%=10)

## 2. Analysis of model results

### (1) Basic Statistical Characteristics of Farmers' Cooperative Performance and Benefit Linkage Mechanisms

The data of this study were obtained from field research, and the questionnaires were filled out by the management members and members of the cooperatives, with a total of 3,000 questionnaires distributed and 2,954 valid questionnaires recovered, with a valid recovery rate of 98.47%. The data were analysed using the statistical software Stata 14.0 and the results showed that the reliability coefficient ( $\alpha$ ) of the questionnaire was 0.819, which is an acceptable result. The distribution of farmers' co-operative performance showed that the score hierarchies of all three performance variables approximately obeyed a normal distribution (see Table 4).

## (2) Relationship between the performance of farmers' co-operatives and benefit linkage mechanism

The results of the econometric model estimation are shown in Table 5:

From Table 5, the chi-square values estimated by the three models are 43.774, 43.128, and 58.816, respectively, and all of them reach the significance level of 1%. The three columns of the table show the estimation results of growth capacity and benefit linkage mechanism, profitability and benefit linkage mechanism, and member satisfaction and benefit linkage mechanism of farmers' co-operatives, in that order.

### **3. Dilemmas and Causes Facing the Research on Developing Farmers' Cooperatives by Helping Farmers' Benefit-Linkage Mechanisms**

Co-operatives can play an important role in driving farmers out of poverty and increasing their incomes, and the performance of this role depends on the construction of the benefit linkage mechanism to help farmers. Farmer co-operatives under the mechanism of interest linkage to help farmers in the long run is not "completed", but "in progress", and the development of things on the road is winding, to help farmers in the development of the mechanism of interest linkage to help farmers co-operatives in the development of the process of a variety of difficulties that may arise, we need to explore the causes. We need to explore the reasons:

#### **3.1. Insufficient Value-added Motivation**

First, the value-added benefits of preferential services are limited. Farmers' professional cooperatives serve their members for the purpose of serving them, and various cooperatives carry out market operation and socialised services around the different needs of their members. Farmers' cooperatives have limited value-added benefits from preferential services, and the implementation period of industrial projects is limited, which leads to the limited ability of preferential services to generate benefits. Second, the value-added of high value-added products is limited. The value-added of agricultural products mainly flows into non-agricultural industries, and farmers' cooperatives have not been able to effectively open up the channels for farmers to enter the supply of agricultural materials and the processing and circulation of agricultural products in order to realise added-value appreciation, so that the interests of the agricultural sector that flow out of the country cannot be adequately retained. Thirdly, farmers' cooperatives have limited resources and capacity. Lacking professional marketing teams and channels, it is difficult to enter high-value markets for agricultural products. The market environment is complex and prices fluctuate greatly, and co-operatives lack the ability to cope with market risks, leading to unstable returns.

#### **3.2. Benefit Incentives are Hardly Effective**

For one thing, material benefit incentives are insufficient. On the one hand, productive members are restricted in the realisation of material benefits. On the other hand, the incentives for ordinary members of the co-operative are mainly realised through means other than dividends and patronage returns, which are obviously insufficient for members, and the material benefits fail to flow sufficiently. Secondly, the incentives for the granting of power are insufficient. Managers want to win the praise of members and gain external honour and status, but it is difficult to achieve the expected level. The internal management of the co-operative is more centralised, with core members controlling resources and decision-making, and other members' participation and power are

insufficient, leading to a decline in members' motivation. Thirdly, there is insufficient incentive for honour giving. Managers' performance is not recognised in a timely manner, so it is difficult to maintain their enthusiasm and their ability cannot be fully released. Relying on farmers alone cannot maintain the normal operation of the co-operative and lacks sustainable development. Lack of timely recognition and reward system, members' participation motivation declines.

### **3.3. Unreasonable Distribution of Benefits**

For one thing, the distribution between interest subjects is unreasonable. Diversified and heterogeneous characteristics are presented among the interest subjects within farmers' co-operatives, forming a complex interest pattern. In the distribution of interests, the operation administrator usually tends to choose the scheme that maximises his own interests, thus forming a tilted interest relationship in the cooperative. Secondly, the distribution of interests within the main body is unreasonable. The interest subjects within the co-operative have large differences and conflicts. Ordinary members focus on the realisation of benefits from basic services, while core members receive more surplus distribution. The interests of core members are significantly higher than those of ordinary members, making it difficult to fully realise the interests of ordinary members. Third, the distribution of benefits is not transparent and fair enough. Members do not know enough about the management and decision-making of the co-operative and lack participation and supervision in the distribution of benefits.

### **3.4. Inadequate Guarantee of Benefits**

First, the guarantee of smooth realisation of products is insufficient. Farmers' cooperatives suffer from poor circulation of agricultural products and lack of agricultural insurance. This makes it difficult to realise cash when the products are not sold, and members cannot get effective protection when they face risks. Second, there is insufficient protection for the reasonable distribution of benefits. With some members fading out of the agricultural business, transactions are becoming more and more concentrated, and the difference in the profit contribution of different members is widening, the traditional surplus distribution mechanism of the co-operative is difficult to ensure that the fruits of development are fairly shared by all members. Third, the lack of diversified sales channels. Such as agricultural products e-commerce platform, co-operative direct shop, etc., making the market risk of agricultural products more prominent.

## **4. Mechanisms for Assisting Agricultural Benefit Linkage Mechanisms on the Performance of Co-Operatives**

### **4.1. Production and Marketing Co-Operative Benefit Mechanism**

The production and marketing co-operation benefit mechanism is a mechanism that runs through the process of agricultural production, processing and marketing, and is committed to realising a long-term mechanism for the close connection between small farmers and the big market.

It is a long-term mechanism for realising a close connection between small farmers and the big market. First, it facilitates the provision of personalised agricultural supply. It operates on an "order basis", which means that production, processing and sales are linked by orders; and secondly, it promotes the integration of farming, production and marketing, and the formation of brand effects. Based on the digital empowerment of farmers' cooperatives to promote the "integration of planting, raising, production and marketing", thereby strengthening quality monitoring and forming a brand effect.

### **4.2. Shareholding Co-operation Benefit Mechanism**

The shareholding co-operative benefit mechanism is an interest mechanism that concentrates the production factors owned by each participating subject in the form of shares, puts them into use in a unified manner, and distributes dividends according to the shares. Firstly, it is conducive to the formation of the benign interaction of "promoting production with income and increasing income

with production". "Farmers + supply and marketing societies + agricultural companies + co-operatives" of the multi-subject and into the joint-stock co-operation to help farmers benefit linkage mechanism to fully stimulate the production factors play a role in the construction of "income to promote the production, to production to increase income," the positive interaction. Secondly, optimise the shareholding structure, promote the substantive assistance to agriculture. Based on the construction of "democratic decision-making + benefit distribution + financial audit" and other long-term mechanisms, the equity is more concentrated, thus enhancing the profitability and wealth creation function of the cooperative.

#### **4.3. Credit Co-operation Benefit Mechanism**

The credit co-operation benefit mechanism is a new type of mechanism that relies on credit evaluation and a strict verification system to carry out mutual financial assistance among members internally and obtain bank loans externally. Firstly, it is conducive to the formation of a "community of mutual trust and support". Taking the No.1 Document of the Central Government as a value guide, the co-operatives adhere to the principle of "mutual assistance only to internal members but not to external members, only absorbing share capital but not storage, only enjoying dividends but not dividends on share capital, and only using it for the development of production by the members but not abusing it", and promote the construction of a "community of mutual trust and support" by integrating professional production and mutual financial assistance. ". Secondly, the degree of benefit linkage has been strengthened. The co-operative takes "credit file" as the carrier and "credit interpersonal as the guideline, legal norms as the bottom line" as the principle, i.e., relying on village rules and regulations, interpersonal relationship, character and credit to enrich the form of interest linkage and strengthen the degree of interest linkage.

#### **4.4. Risk Control and Co-operation Benefit Mechanism.**

The wind control and co-operation benefit mechanism is a collaborative mechanism to control the internal management risks of co-operatives, accept the supervision of financial and government departments, and escort agricultural development. Firstly, it relies on the "futures + insurance" model to reduce the natural and market risks of agricultural products. The co-operative relies on the "government subsidy + co-operative targeted assistance + insurance company personalised" approach to tailor-made insurance products for farmers to reduce natural risks and market risks. Secondly, it promotes the openness of the affairs of the Sunshine Co-operative to form benign wind control. The co-operative holds regular general meetings, councils and supervisory boards to strengthen democratic management, and allows members to actively participate in and supervise the daily and major affairs of the co-operative, so as to make the affairs of the co-operative more open and transparent.

### **5. Lessons Learnt**

#### **5.1. Extend the Industrial Chain to Enhance the Ability of Benefit Creation**

With the deepening of the development of agricultural industrialisation, farmers' co-operatives, while improving their agricultural production capacity, should, according to the characteristics of their own agricultural products, production conditions, etc., actively carry out services such as agricultural production, product storage, processing, sales and credit mutual aid to extend the co-operative industry chain, enhance the co-operative's ability to create benefits, and really drive farmers out of poverty and increase their incomes.

#### **5.2. Implementing the Return of Patronage to Improve the Distribution of Benefits**

Under the assumption of "economic man", conflicts of interest will inevitably arise between economic individuals linked by common interests, and co-operatives need to clarify the relationship of interests between economic subjects, differentiate between the rights and obligations of different subjects of

interest, and pay attention to the importance of fairness in the distribution of interests. Co-operatives boldly explore innovative mechanisms for benefit distribution, and use reasonable benefit distribution mechanisms to balance the relationship of interests and resolve conflicts of interests. On the basis of the traditional dividend distribution and return according to transaction volume, the co-operatives have carried out innovative exploration, such as the distribution of dividend plus profit, and have established a sound remuneration system for managers.

### **5.3. Introduce Agricultural Insurance to Improve the Risk Protection Mechanism.**

Co-operatives should establish relevant risk compensation mechanisms to resist risks in all aspects and effectively protect the economic returns of members. Cooperating with insurance companies, introducing agricultural insurance and establishing risk guarantee funds can improve the ability of cooperatives to resist risks. At the same time to establish an effective membership withdrawal mechanism, to prevent the risk of default, the co-operative financial supervision is reasonable, to protect the economic interests of all parties in the co-operative.

### **5.4. Deepen Democratic Management to Improve the Enthusiasm of Members' Participation.**

Democratic management is an important way to realise the maintenance of farmers' interests, but it is difficult to realise in the real environment. To solve this drawback in the operation and management of cooperatives, it is necessary to establish a perfect and effective democratic management system, such as rigidly stipulating the minimum proportion of ordinary members in the board of directors of cooperatives, preventing the core members of cooperatives from concentrating too much power in management, and improving the enthusiasm of ordinary members to participate in the management of cooperatives.

The accurate prediction of power load is of great significance for the electric power production and the safe operation of the power grid and the national economy [1]. Short term load forecasting is an important part of energy management system. The prediction error directly affects the analysis results of subsequent safety check of power grid, which is of great significance for dynamic state estimation, load scheduling and cost reduction [2-4]. Traditional prediction methods are based on linear regression, such as time series method, analysis method and pattern recognition method have defects of respectively [5].

### **Acknowledgments**

The authors gratefully acknowledge the financial support from Jiangxi Normal University national innovation and entrepreneurship plan fund.

### **References**

- [1] Cheng Qiyun, Sun Caixin, Zhang Xiaoxing, et al. Short-Term load forecasting model and method for power system based on complementation of neural network and fuzzy logic [J]. Transactions of China Electrotechnical Society, 2004, 19(10): 53-58.
- [2] Fangfang. Research on power load forecasting based on Improved BP neural network [D]. Harbin Institute of Technology, 2011.
- [3] Amjady N. Short-term hourly load forecasting using time series modeling with peak load estimation capability [J]. IEEE Transactions on Power Systems, 2001, 16(4): 798-805.
- [4] Ma Kunlong. Short term distributed load forecasting method based on big data [D]. Changsha: Hunan University, 2014.
- [5] SHI Biao, LI Yu Xia, YU Xhua, YAN Wang. Short-term load forecasting based on modified particle swarm optimizer and fuzzy neural network model [J]. Systems Engineering-Theory and Practice, 2010, 30(1): 158-160.