ORGANIZATIONAL COMPETENCY DEVELOPMENT FOR FARMER PROFESSIONAL COOPERATIVES: A CASE STUDY OF BAJIE TOWN, ANNING, YUNNAN, P.R. CHINA

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DOCTOR OF PHILOSOPHY IN ADMINISTRATIVE SCIENCE

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THIS DISSERTATION HAS BEEN APPROVED IN PARTIAL FULFILLMENT
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IN ADMINISTRATIVE SCIENCE

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บทคัดย่อ

สหกรณ์เกษตรกรมีบทบาทสำคัญในการพัฒนาเศรษฐกิจชนบท การเพิ่มขีดความสามารถองค์กรเป็นสิ่งสำคัญอย่างยิ่งต่อการสร้างมาตรฐานการดำเนินงานของสหกรณ์เกษตรกร การวิจัยนี้จึงมีวัตถุประสงค์เพื่อศึกษา 1) สถานการณ์ปัจจุบันของสหกรณ์เกษตรกร 2) ระดับความสามารถของสหกรณ์เกษตรกรแห่งเมืองปาเจีย 3) ปัจจัยที่มีผลต่อความสามารถของสหกรณ์เกษตรกร และ 4) การกำหนดแนวทางในการปรับปรุงขีดความสามารถของสหกรณ์เกษตรกร โดยได้ทำการสุ่มเลือกสหกรณ์เกษตรกรจำนวน 26 แห่ง และได้กลุ่มตัวอย่างเกษตรกร จำนวน 152 คน ทำการตรวจสอบความน่าเชื่อถือและความเที่ยงตรงของข้อมูลที่ได้รับ และทำการวัดขีดความสามารถขององค์กรของสหกรณ์เกษตรกรด้วยวิธีเอนโดรปี้ จากนั้นใช้สมการพหุคุณถดถอยทำการวิเคราะห์ปัจจัยภายนอกและภายในของสหกรณ์ที่มีผลต่อความสามารถขององค์กร

ผลการศึกษาพบว่า เมืองปาเจียมีการผลิต บริโภค แปรรูป และจัดตั้งสหกรณ์เกษตรกรผู้ปลูกกุหลาบขึ้นหลายแห่งเพื่อพัฒนาอุตสาหกรรมกุหลาบ ในปี 2022 เมืองปาเจียมีสหกรณ์เกษตรกร 130 แห่ง ซึ่งคิดเป็น 60 เปอร์เซ็นต์ของสหกรณ์เกษตรกรในเขตอันหนิง ในจำนวนนี้มีเกษตรกรผู้ปลูกกุหลาบ 51 แห่ง หรือคิดเป็น 39 เปอร์เซ็นต์ของสหกรณ์เกษตรกรในเมืองปาเจีย ระดับขีดความสามารถของสหกรณ์เกษตรกรเกิดจากทักษะและการดำเนินงานของสหกรณ์ ปัจจัยภายนอก 2 ปัจจัย คือ สภาพพื้นที่และโครงการภายนอก และปัจจัยภายใน 2 ปัจจัย คือ สถานการณ์ภายในและการจัดการภายในของสหกรณ์เกษตรกรมีนัยสำคัญในทางบวกต่อขีดความสามารถของสหกรณ์เกษตรกร เมื่อพิจารณาสมการการถดถอยที่ครอบคลุมทั้งสองปัจจัย พบว่า เมื่อเปรียบเทียบกับปัจจัยภายนอกแล้ว ปัจจัยภายในเป็นปัจจัยหลักที่มีผลต่อระดับขีดความสามารถของสหกรณ์เกษตรกร

คำสำคัญ : สหกรณ์เกษตรกร, สหกรณ์เกษตรกรผู้ปลูกกุหลาบ, สมรรถนะองค์กร, แนวทาง

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ABSTRACT

Farmer professional cooperatives play an important role in rural economic development. Enhancing organizational capacity is crucial to establishing the operational standards of farmer professional cooperatives. The objectives of this research were to study 1) the current situation of farmer professional cooperatives, 2) the competency level of farmer professional cooperatives of Bajie town, 3) factors affecting the competencies of farmer professional cooperatives, and 4) setting guidelines for improving the competency of farmer professional cooperatives. Twenty-six farmer professional cooperatives were randomly selected and samples of 152 farmers were selected to verify the validity and reliability of the data received. The study measured the organizational competency of farmer professional cooperatives by the endropy method. Then, using multiple regression to analyze external and internal factors of cooperatives that affect organizational competency.

The study found that Bajie town has produced, consumed, processed and established many rose cooperatives in order to develop the rose industry. As of 2022, Bajia town has 130 farmer professional cooperatives, accounting for 60 percent of the farmer professional cooperatives in Anning County. Of these, there are 51 rose farmers' cooperatives, accounting for 39 percent of the farmer professional cooperatives in Bajia town. The competency level of farmer professional cooperatives was determined by the skills and operations of the cooperatives. Two external factors, namely, regional conditions and external projects, and two internal factors, namely, internal situation and internal management were positively significant to the competency of farmer professional

cooperatives. When considering the regression equation of both factors, it was found that when compared to external factors, internal factors are the main factors affecting the capacity level of farmer professional cooperatives.

Keywords : farmer professional cooperatives, rose farmer cooperatives, organizational competency, guideline

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CHAPTER 1

INTRODUCTION

Background and Significance of the Study

Research background

The Institutional Basis of Farmer Professional Cooperatives (FPC). The state established a system of “two-level management system based on household contract management and combining unified management with decentralized management”, which provided an institutional guarantee for the family operation of peasant households. According to this system, the peasant household becomes the basic contracting unit of the land, and the production, exchange, consumption and distribution are carried out by the family, so that the family becomes the main body of agricultural micromanagement (Liu Shouying, 2022)

Article 8 of the amendment to the Constitution adopted at the first session of the 13th National People's Congress in March 2018 stipulates that “the cooperative economy in various forms such as production, supply and marketing, credit and consumption in rural areas is the economy under collective ownership of the socialist working people. Workers who participate in rural collective economic organizations have the right to operate private plots, private hills, family sidelines and raise private livestock within the scope prescribed by law.” Article 15 of the Constitution stipulates that “the state implements a socialist market economy.” In recent years, the No. 1 central document put forward specific requirements for accelerating the development of FPC (Constitution of the People's Republic of China, 2018) .

On the basis of household contract responsibility system, various forms of FPCs emerged for agricultural production, and gradually became an important support for agricultural scale and industrialization. The state and government provided policy support for the development of FPCs; The grass-roots government did a lot of guidance and service work for FPCs’ sustainable development; FPCs

themselves also constantly improved their internal management and operation mechanisms.

The Legislative Guarantee of FPC The Law of the People's Republic of China on Farmer Professional Cooperatives, which was passed in October 2006, is the first law on FPC in China. The law was revised again on December 27, 2017 (Law of the People's Republic of China on Farmer Professional Cooperatives, 2017).

This marks that FPCs have played an active role in rural economic development, agricultural industrial transformation and farmer income increase, and FPCs entered a period of rapid development (Wen Tiejun, 2013). The government and agricultural administrative departments should do a good job in the management and service of FPCs, help FPCs to improve organizational competence (OC), and ultimately make the agricultural and rural economy continue to grow.

After 2009, FPCs in Yunnan Province developed rapidly and farmers were highly motivated to join FPC. FPCs in Yunnan Province were still in the early stage of development, with small scale and non-standard internal management. Compared with FPCs in eastern China, FPCs in Yunnan had a large gap in terms of organizational scale, service capacity, cooperation degree, operating income, business content and quality of members. FPCs at Bajie Town also has such problems. Therefore, facing the new situation of agricultural and rural economic development, it is necessary to accelerate the development of FPC.

Rapidly Development of FPC In 2018, FPCs in China's developed rapidly, showing a trend of rapid growth in number of FPC, driving more farmers, wide industrial coverage, and increased service content. By the end of September 2017, there were 1.969 million FPCs registered in accordance with the law nationwide, 2.86 times as much as in 2012 and 76 times as much as in 2007, especially the average annual growth rate of 37.2% in the lately five years. By the end of October 2019, the number of FPCs registered in accordance with the law reached 2.203 million, and more than 10000 FPCs were established through joint investment and brand creation. FPCs radiated and drived nearly half of the country's farmers, and ordinary farmers accounted for 80.7% of the total number of members (2020, China Agricultural Cooperative Network). In terms of industrial distribution, farmer

professional cooperatives mainly involved rural industries such as cultivation, breeding, agricultural machinery, forestry, plant protection, technical information, manual weaving, and farmhouse entertainment, among which, they were mainly concentrated in planting and animal husbandry. In terms of service content, FPCs had gradually expanded from the functions of technical assistance and information dissemination at the beginning to the cooperation of funds, technology, labor and other aspects. FPCs showed a development trend of gradually extending from the field of production to the integrated operation of production, circulation and processing. However, from the perspective of development as a whole, FPCs were at the initial stage of development, so it is necessary to continuously strengthen the intensity of regulations, guidances, cultivation and support, so that the organization of FPCs is more standardized, the interests of FPCs and their members can be better protected, and the development of agricultural and rural modernization is accelerated.

Research Meaning

There were various forms of cooperative economic organizations in China, including professional associations, professional societies, family farms ,and FPC etc. Other cooperative organizations also provided production services, market services and technical services for small farmers to solve their practical problems. However, under the conditions of market economy, in order to change the weak position of farmers and protect their legitimate rights and interests, the development of FPC should be supported. Article 1 of the Law of the People's Republic of China on Farmer Professional Cooperatives stipulates that "this law is formulated to regulate the organization and behavior of FPCs, encourage, support and guide the development of FPCs, protect the legitimate rights and interests of FPCs and their members, and promote agricultural and rural modernization" (Law of the People's Republic of China on Farmer Professional Cooperatives, 2017)

Taking FPCs at Bajie Town as the research objects, the standardization of organization of FPCs will be further studied and discussed, on the basis of the past research results, the effective implementation of the Law on Farmer Professional

Cooperatives, the transformation of government functions, and experience and practices at home and abroad. The significance of studying FPCs and their development is mainly reflected in the following aspects:

First of all, organization of FPC will be standardized well. The function of FPC is to provide production services for farmers, therefore, the standardization of organization of FPCs make FPCs better participate in the production and operation process and improve economic benefits. FPC, like partnerships, limited liability companies and joint stock limited companies, carries out various production and operation activities and participates in market competition. 1) in terms of organizational structure, FPC has a general assembly of members, a board of directors and a board of supervisors; 2) in terms of internal operation, FPC has regulations on the composition of capital contribution, the distribution of share funds, and decision-making on major issues; 3) in terms of the rights and interests of members, members have rights and obligations, including the right to join and leave the company and to be educated and trained. Therefore, it is necessary to standardize the production and operation behavior of FPC to meet the requirements of decentralized business activities of members. As an economic organization, FPC should carry out its business activities according to the laws of market economy in the face of fierce market competition under the conditions of market economy. In the development of FPC, China's legislature needs to legislate FPC, regulate its organization and behavior, so that FPC better serve the national strategy of rural revitalization.

Secondly, the interests of FPCs and their members will be protected. FPC is an economic organization, jointly funded by farmers, that provides various professional services for the decentralized operation of small farmers, including services in production, circulation, sales and other links. After the establishment of FPC, it has the legal personality and become an independent market entity. This economic organization has a fixed organizational structure, independent property ownership and management rights, and can enjoy economic rights and undertake economic obligations in its own name.

Thirdly, FPC deals with other economic organizations in the market, and its legal rights and interests need to be protected. The interests of FPC members also need to be coordinated to reach a relationship of interest connection. Once the member participates in the investment contribution of FPC and accepts the production and operation services provided by FPC, the member not only is an independent operator and interest subject, but also has common interests with FPC and independent interests. Therefore, in the production and operation activities of FPC, in order to motivate members to participate in FPCs, it is necessary to clarify the legal status of members and protect their legitimate rights and interests.

Finally, to accelerate the modernization of agriculture and rural areas. By standardizing the organization and behavior of FPC, protecting the legal status of FPC and the legitimate interests of members, the modernization of agriculture and rural areas will be accelerated. It was well known that the issues of agriculture, rural areas and farmers were worthy of attention, which affected the development of the national economy, played an important role in the development of the national economy, and also restricted by the development level of agricultural productivity. Through long-term practice, the role of FPC in solving problems of agriculture, rural areas and farmers has been recognized. FPC combined scattered small farmers and expand their scale through capital cooperation, credit cooperation and production cooperation; FPC provided small farmers with means of production, product sales information, marketing means and strategies; FPC helped small farmers avoiding market risks and coping with market competition.

The form of organization and the degree of development of FPCs in China were various. The various FPCs that exist in reality should be recognized, moderately regulated and effectively guided. The actual situation of FPC's development in agricultural industrialization should be considered, and the service content and service object of FPC should be clarified. At the same time, FPC provides services in the purchase of agricultural means of production, in the processing, sales, storage and transportation of agricultural products, as well as in agricultural production and management technology and information.

Location of the Study

Regional Overview

Bajie Town is located in the south of Anning City, east and Jinning District, Erjie adjacent to the township, the south and Jinning District, Shuanghe Township, Xiyang Township, west of Longquan Township, Yimen County, north and County Street Township, 35 km from downtown Anning, 67 km from downtown Kunming, with a total area of 340.29 square kilometers. The area under the jurisdiction of Bajie Town is relatively suitable for the growth of roses, with the famous tourist attraction Rose Valley. Because of the vast area under rose cultivation, in recent years Bajie Town have relied on edible roses to hold events such as the Rose Cultural Festival.

The Bajie Town Office has the largest agricultural population in the city of Anning, with 21 villagers' committees and one community residents' committee, and a total of 23 ethnic minorities, including Yi, Miao, Bai and Tibetan (Bajie Town, Work Report, 2020). The primary industry is mainly farming and planting, with the farming industry being dominated by free-range farming in rural areas, with fewer households farming on a large scale, and some farmers using the "company + farmer" farming model. In terms of farming, there are many different types of crops, including edible roses, vegetables and fruit, which are grown on a large scale in all the village councils, mainly in the southern part of the Bajie Town. There are two main ways of growing edible roses, one is to grow them individually in concentrated patches and the other is to grow them in sets with crops such as maize and vegetables. As the Bajie Town is an important water source for the city of Anning, the development of industry is restricted in order to ensure the safety of the water supply. Currently, the main focus is on the rough processing of flowers and vegetables and fruits, and the marketing and deep processing of rose products is a problem that needs to be solved by the government and the cooperatives.

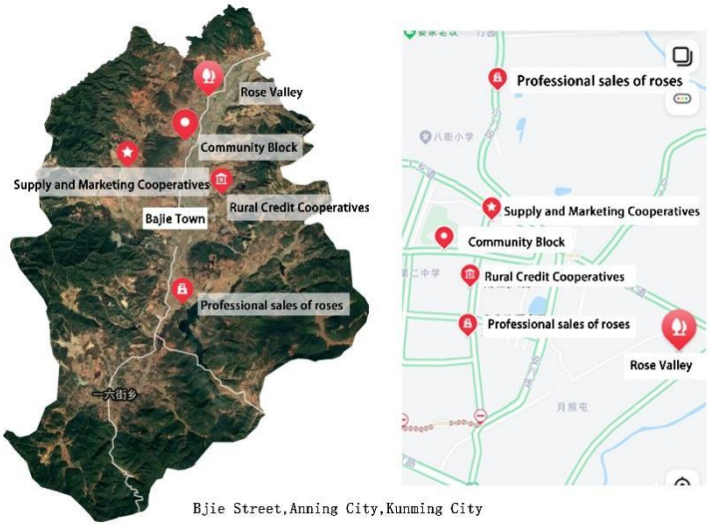


Figure 1 Map of the area of Bajie Town in Anning City

Advantages of Cooperative Development Conditions

In terms of natural conditions, Bajie Town is located in the southwest of Anning City, with a subtropical highland monsoon climate, which is characterised by high altitude, low temperatures, small annual temperature differences and large daily temperature differences, and a unique natural environment and locational advantages that are very suitable for the growth of roses. In the rose growing process, pest and disease control is mainly by physical insecticide, and the rose growing base is all fertilised with farmyard manure. As a result, the roses produced in this climatic environment are of high quality and are highly appreciated by consumers in the market, with demand even exceeding supply.

In terms of planting experience, the town of Bajie has been planting edible roses sporadically since the 1970s and has a long history of cultivation. At present, the experience and technology accumulated in the cultivation, management and processing of edible roses has become more mature.

In terms of market, edible roses are in high demand, with excellent prospects for development, and the market is rising year on year. At current market prices, the annual income per mu of edible roses is nearly 10,000 yuan, compared to the "meagre income" generated by growing food or other traditional agriculture. The

income is clearly more affordable and the family's economic conditions can be significantly improved.

In terms of traditional conditions, edible roses have a long history in many countries at home and abroad and are often used as an edible supplement or as a catering ingredient. The custom of eating flowers has been practised in China since the pre-Qin period, and hundreds of edible flowers have been processed and refined in Europe and the USA. Products made from edible roses, such as pastry, jams and canned goods, are even more popular with the public.

In terms of tourism resources, the town of Bajie is very rich in cultural and historical resources, with excellent conditions for red cultural resources. The town of Bajie has an ancient cultural town of Bajie, the Bajie Martyrs' Cemetery, revolutionary battle sites and monuments, all of which are very valuable tourist attractions. These red cultural resources can become an important resource for the development of cultural industry projects in Bajie. Bajie Town cultural town can give full play to its advantageous resources, relying on the existing ancient building complex combined with the Eight Street Martyrs' Cemetery, revolutionary battle sites, monuments and other red tourism resources, the development of the Bajie Town cultural industry, to create national education, revolutionary history education base, etc.; based on the protection and development of the Bajie Town ancient cultural town as a key cultural tourism industry project in Kunming, to strengthen the planning and positioning and key packaging to promote; at the same time, the For Kunming and the surrounding public to launch the "religious culture, national culture, revolutionary history education" as the theme of the weekend tour, so that the public, tourists to the eight street taste food, enjoy the beautiful scenery at the same time, but also for their own soul a thorough baptism, enjoy a unique leisurely weekend time.

Scope and Limitation of the Study

Scope

This study would be limited to collecting data of FPCs at Bajie Town, Anning City. Bajie Town has a large agricultural population, with 21 villagers' committees and 1 community residents' committee, and 23 ethnic minorities including Yi, Miao, Bai and Tibetan (Bajie Town, Work Report, 2020). The main reason for choosing Bajie Town as the research site is that Bajie Town is more suitable for the growth of roses. There is a famous tourist attraction, Rose Valley. Because of the vast area of rose planting, Bajie Town had held rose culture festival and other activities relying on edible roses in recent years. As of March 2022, there were 130 FPCs at Bajie Town, accounting for 60% of FPCs in the city. There were 51 FPCs related to edible roses at Bajie Town, accounting for 39% of FPCs at this town. By 2022, 46 rose FPCs were in operation, in which 17 had registered capital of 1 million yuan or more (Anning 8th Street, work report, 2022).

Figure 2 Location of Bajie Town, Anning City, Yunnan Province, P.R. China

Limitations

As far as the perspective of theory and practice, the limitation of this research was that although China's cooperatives had a long-term development process, the standardized operation duration of FPCs was not long. Therefore, there was few related research topics.

The ability of FPCs was affected by such factors as finance, performance and democratic management. However, there were few relevant documents about the impact of these factors on the ability of FPC. First, in the process of writing, the lack of literature made this paper lack of theoretical support. Second, in practice, due to the limitations of researchers' ability, research funds and relevant conditions, there may be deviations in the conclusions of empirical analysis using survey data. Third, in the survey, farmers were asked to fill in the questionnaire one-to-one, and older or lower educated farmers need help to finish the questionnaire.

Research Questions

1. What is the situation of farmer professional cooperatives in Bajie Town, Anning City?
2. What is the competence of farmer professional cooperatives in Bajie Town, Anning City?
3. What is the factors affecting the competency of farmer professional cooperatives in Bajie Town, Anning City?
4. What is the guideline to improve the competence of farmer professional cooperatives?

Research Objectives

1. To investigate the present situation of farmer professional cooperatives in Bajie Town in Anning city.
2. To study the level of farmer professional cooperatives competency
3. To study the factors effecting farmer professional cooperatives competency.
4. To formulate the guideline to improve organizational competence of farmer professional cooperatives.

Expected Result of the Study

Appropriate strategies for the improvement of OC for FPC are expected to be developed and proposed.

1. The current situation of OC of Rose FPCs at Bajie Town would be revealed by the management and sociological methods. The current situation of these FPCs, including the regional overview of Bajie Town, the overall situation of FPCs in Anning City, the basic situation of FPCs at Bajie Town, the basic situation of Rose FPCs at Bajie Town and the current situation of OC for FPCs at Bajie Town, would be researched by in-depth interviews, questionnaires, field surveys and other methods.

2. The level of OC for Rose FPCs at Bajie Town would be researched. The level of OC for Rose FPCs in terms of information, performance, skills and culture would be investigated with the Likert scale. The information part would include financial disclosure, management system, infrastructure and economic conditions; Performance would include business income, household income, distribution mode and production cost; Skills would consist of skills on planting technology, product sales, professional training and services; Culture would consist of business philosophy, FPC vision, core values and management capabilities. The weight of the four dimensions of the rose FPCs at Bajie Town would be calculated, then the level of OC for these FPCs would be evaluated.

3. Factors affecting OC for rose FPCs at Bajie Town would be studied. The personal information of the members of these FPCs would be gathered, and the internal and external factors of these FPCs would be analyzed with the Likert scale. The personal information would include gender, age, education level and the amount of time for agricultural production; Internal factors would include income distribution, internal management, organization and fund raising; External factors would include economic conditions, natural resources, the distance between location of FPC and market and external competition. The effect of these factors on OC for rose FPCs at Bajie Town would be analyzed with the regression method.

4. The existing strategies for OC for rose FPCs at Bajie Town would be analyzed. In this section, the existing strategies would be analyzed, and the deficiencies in the strategies would be pointed out. Based on the analysis of the factors affecting OC for these FPCs and the existing strategies, new strategies improving OC for these FPCs would be designed.

Operational Definition of the Terms

Cooperation is the behavior of two or more people working together to achieve common goals through joint creation and joint action.

Farmer professional cooperative economic organization is the predecessor of Chinese cooperatives that implement mutual assistance based on voluntary participation and self-management. It is based on the production of products and services, its aims is to increase the income of its members, which related to all aspects of production, distribution, sales and processing.

Cooperatives are economic organization forms in which members participate in and unite to carry out production cooperation and cooperative operation. Cooperatives have two basic elements, one of which is cooperation and the other is economic organization.

Farmer professional cooperatives are mutual economic organizations that are voluntarily united and democratically managed between agricultural producers and operators, and between agricultural producers and users on the basis of household contract management in rural China. The focus of this study is the farmer professional cooperatives in Bajie Town, Yunnan, China.

Agricultural cooperatives are the commercial organizations formed by farmers as the main body of producers in the household contract operation, in order to maintain and improve their production and living conditions, in accordance with the provisions of laws and cooperatives, on the basis of mutual benefit. This business organization requires its members to work together and manage democratically. The profits of agricultural cooperatives are mainly the distribution of transactions between members and agricultural cooperative economic organizations.

Farmers are those who contract land in rural areas and engage in agricultural production for a long time.

Rose FPC is an organization that, based on rural household contract management, achieves the purpose of mutual assistance among its members by providing services related to the sales, processing, transportation, storage of agricultural products, as well as technology and information related to rose production and operation. Since its establishment, it has economic mutual assistance and has a certain organizational structure, with members enjoying certain rights and responsibilities.

Competency is the deep level characteristics of individuals that can distinguish outstanding achievers from ordinary people in a job. It can be any individual characteristics that can be reliably measured or counted, such as motivation, traits, self-image, attitudes or values, knowledge in a certain domain knowledge, cognitive or behavioral skills, and can significantly distinguish excellent from ordinary performance.

Organizational competency is the organic collection of knowledge, skills, resources, and endowments possessed by organizational members.

Peasant families are the families engaged in agricultural production in rural areas.

Ability is the comprehensive quality of goals or tasks, which is different from people's ability to achieve goals. Ability is a kind of personality mentality, which directly affects the efficiency of the activity and determines whether the activity can be successfully completed.

Organizations are different forms of social groups composed of people according to specific purposes, tasks and forms. Organization is not only the cell of society, but also the basic unit and foundation of society.

A community is an area composed of a group of people with a certain degree of interactivity and common cultural background, who are interconnected in a specific environment.

Community organizations are different groups in the community. The interaction between groups is the basic needs of community residents.

Rural collective economic organizations are agricultural cooperative organizations, which came from the agricultural cooperative movement in the 1950s. They are based on the voluntary association of farmers and carries out centralized management with their own means of production, including contracted land and agricultural machinery. They are economic organizations formed by farmer concentrated labor in accordance with the principle of "acting according to their abilities and distributing according to work".

A villager committee is the mass autonomous organization elected by the villagers of China's administrative village. It is a grass-roots autonomous organization with self-management, self-election and self-service.

A legal person is a social organization that is established according to law, has a fixed organizational structure, has independent property ownership and management rights, and can enjoy economic rights and obligations in its own name. Legal persons have civil capacity and civil rights. The legal person system is an important legal system to regulate the world economic order and the whole social order.

A company is the profit-making enterprise legal person established in China in accordance with the provisions of the Company Law, including limited liability companies and joint stock limited companies. It is a form of enterprise organization formed to meet the needs of social production and market economy.

A association is a group or organization. It is a group formed by individuals and individual organizations on the basis of voluntary association in order to achieve certain goals, including various professions, industries and academia.

Net income of farmers per capita is the average of net income of farmers based on the rural population. This indicator reflects the average income of rural residents in a country or region. Net income is the total income of rural residents from various sources in the current year after deducting income.

Public welfare fund is the fund withdrawn from after-tax profits. The public welfare fund is mainly used for public welfare undertakings such as employee welfare, which is a part of the undistributed profits of the enterprise.

Distributable surplus is the company's net operating income in the current year. It is part of the surplus, which is the surplus of the company's income after deducting the corresponding expenses. Deduction items include death, disability, company benefits, his expenses and the increased liability reserves every year.

Fixed assets is non-monetary assets that are used to produce products, provide services, rent or operate with a certain value. The service life of fixed assets shall be more than 12 months. They include houses, buildings, machinery and tools and other equipment related to production and business activities.

CHAPTER 2
REVIEW OF LITERATURE AND RELATED STUDIES

Theoretical Perspective

With the spread of cooperative economic thought in China, the theory of cooperative economy has been continuously improved since the founding of the People's Republic of China. The practice of cooperative economic organizations in China has led many scholars to begin in-depth research and explore their importance. At the same time, the management system and internal rules and regulations of cooperative economic organizations have been standardized to promote their healthy development. In particular, the promulgation and implementation of the Law of the People's Republic of China on Farmers' Professional Cooperatives marks that China's farmers' professional cooperative organizations have entered the stage of legalization. In the implementation process, it is necessary to regulate the establishment, registration, dissolution, and liquidation of farmers' professional cooperatives in accordance with the law and guide their legal person status. Farmers' professional cooperatives participate in market competition, safeguard their legitimate rights and interests, improve their competitiveness, and ultimately promote the orderly development of farmers' professional cooperatives and the modernization of agriculture and rural areas. (Kong xiangzhi, Chen dangmei, 2007; Huang zhuhui and Shao ke, 2009)

Research on Cooperative Economic Thought

Basic Connotation of Cooperative Economy

Cooperative economics refers to when a country and its social economy develop to a certain stage, the operators voluntarily join cooperative organizations and implement democratic management. It is an economic model in which the services enjoyed, and the benefits obtained are jointly owned by all members and

teams. (Huang Ping, 2013) The farmer's professional cooperative is an economic organization with mutual aid properties. Its main purpose is to serve its members. Cooperation and mutual aid are the key points of the farmer's professional cooperative. Through organizational system innovation, the farmer's professional cooperative can largely resolve the contradiction between small farmers and large markets (Huang Zuhui, Xu Xuchu, 2008).

Typical Cooperative Economic Thought

Farmer cooperative economic thought. In order to solve the problem of low productivity, dispersion and backwardness of small-scale peasant economy from the source, many scholars have put forward their own views. Liu Shaoqi believed that by tightly grasping the circulation link with rural cooperatives and realizing the connection between socialist collective economy and scattered small farmers, guiding the broad masses of farmers to take the socialist road, thus developing and consolidating the collective economy, is the secret of socialist rural development (Li Dianping, 2003). At that time, among various cooperatives, Liu Shaoqi paid great attention to the development of rural supply and marketing cooperatives. Under Liu Shaoqi's promotion, cooperatives quickly responded greatly throughout the country. Xue Muqiao believed that the construction principle of grassroots cooperatives is mutual aid by the people, operated by the masses and serving the masses. The government only provides certain help in terms of policy and business. He regarded villages as the basic unit of cooperative construction. He pointed out that this would neither be separated from the masses nor lead to the dispersion of funds. For problems encountered in cooperative operation, he advocated that profit sharing is secondary and serving the masses and solving practical difficulties for them is primary (Hu Xiaotian, 2022). He believed that we should uphold the attitude of serving the masses, rewarding production labor and. In terms of equity participation, he proposed that in addition to monetary equity participation, it is also possible to participate in equity through physical objects, labor force, dividends and other ways to attract farmers to participate as much as possible. Deng Zihui (1952), as an advocate and practitioner of China's agricultural cooperation movement, believed

that cooperative economy should be developed through several ways: first, developing cooperative economy and formulating relevant policies is a necessary way to move towards socialism or even achieve common prosperity; secondly, formulating agricultural cooperative economic policies (Shi Kai, 2015). He proposed to take the road of agricultural cooperation and develop agricultural production. A series of agricultural economic policies must be formulated. Through the guiding role of policies, the enthusiasm of agricultural producers can be greatly mobilized. The use of economic means provides practical reference and theoretical support for solving the “three rural issues” at present.

The idea of farmers’ cooperative economy has laid the theoretical foundation for the establishment of various new rural cooperative economic organizations in China and has also had a positive impact on China’s agricultural transformation.

The Contemporary Value of Cooperative Economic

The idea of cooperative economy has provided us with a reference for achieving socialist modernization faster and better. The main manifestations are as follows:

The first is to attach great importance to the fundamental position of agriculture. As the foundation of the national economy, its development is directly linked to the economic and social stability of a country. The development of agriculture not only concerns the urgent needs of people’s livelihoods, but also its fundamental position makes its production inseparable from the secondary and tertiary industries. Only when agriculture develops steadily and sustainably can the secondary and tertiary industries thrive. Due to its large population, China is the world’s largest consumer market and has the greatest potential as a consumer of agricultural products. The strong consumer demand that China possesses is not available in most other agricultural powers in the world. Therefore, promoting the development of agriculture is promoting economic development, and the former is the driving force behind the latter.

The second is to continuously increase the government's effective investment in agriculture. Due to the special position and role of agriculture, its development requires continuous support from national fiscal policies. In terms of grain production, one-time grain subsidies and agricultural machinery purchase subsidies should continue to be implemented. In terms of agricultural infrastructure, efforts should be made to strengthen the construction of cold storage and preservation facilities for agricultural products. The development of facility agriculture, smart agriculture, and green agriculture in China cannot be separated from the continuous huge investment of the Chinese government in the field of agriculture.

The third is to safeguard the fundamental interests of farmers and attach importance to the development of agriculture through science and technology. China's farmers are still scattered and face not only natural risks but also market risks. This requires relying on industry to drive farmers to become rich. Vigorously develop industries such as agricultural product processing, leisure tourism, and e-commerce, and attach importance to training the professional skills of farmers. Promote the deep integration of the primary, secondary, and tertiary industries in rural areas, and distribute more and better industrial chain benefits to small farmers so that they have the confidence and ability to engage in agricultural production.

Finally, the idea of overall planning and consideration has laid the foundation for the unity of cooperatives. In the new era, we must not only strengthen our joint efforts but also strengthen our combined efforts, coordinate various resources, and make full use of the basic conditions of cooperative economic organizations such as funds, facilities, outlets, talents, and resources. The cooperative economic thought has undergone many tests and practices and has become increasingly mature.

The History of Agricultural Cooperative

Early Smallholder Stage

China's agricultural civilization has a long history. As early as the Spring and Autumn Period, production was carried out with farmers as the unit. During the "well-field system" era, small-scale farming was mainly engaged in, but the efficiency of small-scale farming at that time was low. In order to further improve production efficiency, various localities have implemented a series of agricultural policies. Agricultural reform measures such as "abolishing well-fields and opening up channels" have further improved agricultural production efficiency, enabling small farmers to obtain livelihood security from the land and thus promoting the development of small-scale farming (Wang Yantao, 2017).

Cooperative Operation in the Early Days of the Founding of the People' s Republic

After the founding of the People's Republic in 1949, to liberate rural labor productivity, the government carried out land reform. Land reform allowed many rural farmers to obtain land and abolished excessive land rent. Similarly, the state also formulated other policies that benefit the people and gradually restored agricultural productivity. With the end of land reform, China began to implement an industrialization strategy. In 1952, China completed rural land reform, allowing farmers to have their own cultivated land and begin agricultural production. Scattered farmers embarked on the socialist road of collective ownership. To better adapt to social development and solve major "three rural" problems, we must establish this model of collective cooperation, namely collective operation (Zhu Ding, 2019).

Cooperative Operation Under Market Economy

With the deepening of reform and opening up, the state implemented the household contract responsibility system for joint production, giving farmers market subject status. In order to better integrate small-scale production with complex and

changing large markets and improve farmers' organizational level in participating in market economy, farmers united to set up cooperatives and entered a new stage of development (Bi Meijia, 2021), mainly including four stages: The first is from the late 1970s to the early 1990s (initial stage). With the implementation of the rural land household contract management system, the disintegration of people's communes and the abolition of the unified purchase and marketing system, phenomena such as disconnection between rural scientific research promotion systems based on planned economic systems and collective economic systems and rural financial service systems and decentralized rural household production management units appeared. Therefore, specialized associations, specialized cooperation bodies, joint ventures and other cooperatives also began to appear, providing new opportunities and challenges for rural economic development (Ding Aimei, 2012). The second is from the mid-1990s to the late 1990s (growth stage). With the clear guidance and support for farmer professional cooperative organizations by the State Council in early 1994, the development scope of rural professional cooperative organizations continued to expand, their business was also expanded, and their functions were enhanced. In addition, the "Model Charter for Farmer Professional Cooperative Organizations" was also formulated. "Enterprise + specialized cooperative organization + farmer" gradually became an important way for rural industrialization management and provided strong support for development. The third is from the late 1990s to 2007 (deepening and accelerating stage). The implementation of the "Agricultural Law" (2003) marked that farmer professional cooperative organizations entered a rapid development stage. The "Agricultural Law" clearly stipulates that farmer professional cooperative economic organizations should adhere to serving members as their purpose and carry out agricultural production operations and service activities within their charter stipulated scope according to principles such as voluntary joining, free withdrawal, democratic management and surplus return. Legal practices such as production, marketing and after-sales service within areas explicitly stipulated by regulations will also be more strictly regulated. The fourth is from 2007-present (development transformation stage). On October 31st 2006, the "Farmer Professional Cooperative Law" was promulgated and implemented on July 1st 2007 , making

cooperative development more standardized; in 2013, the Central No.1 Document proposed for the first time “farmer cooperation”, which emphasized FPC’s important role in promoting rural collective economy development, and proposed: “FPC is a basic subject that drives farmers into market, is a new entity for developing rural collective economy, is an effective carrier for innovating rural social management… Encourage farmers to set up diversified, multi-type cooperatives such as professional cooperatives and shareholding cooperatives”. (the Law on Farmer Professional Cooperatives, 2006)

Cooperatives

Definitions of Cooperatives in different countries

Cooperatives, as a type of cooperative economic organization, have different definitions in different countries. The United Kingdom believes that “a cooperative is an organizational form created, owned and engaged in some economic activity by people who seek common welfare rather than profit.” (Fu Shiru, 1985); The United States believes that “a cooperative is a legal entity organization voluntarily formed by members with similar conditions such as consumers or producers to take advantage of large-scale operations.” (Fu Shiru, 1985); Japan believes that “agricultural cooperative organizations are developed gradually by farmers voluntarily and encouraged by the government, with the basic characteristics of being run by the people, operated by the people and benefiting the people. Agricultural cooperative associations (abbreviated as agricultural associations) are one of the important forms of Japan’s agricultural socialized service organizations. The formation and development of agricultural cooperative organizations benefit from the policy encouragement and financial support of the government.” (Hu Polong, 2001); Among them, the agricultural cooperative closely related to this article refers to a production cooperative in which many small farmers organize their products for cooperative sales to improve sales efficiency. The “International Cooperative Alliance Statement on Cooperative Definition” passed by the International Cooperative Alliance’s 100th Anniversary Rochdale Conference in 1995 shows that cooperatives

are managed and managed by members through cooperation and sharing of profits, voluntary openness, democratic management, economic participation, independence and autonomy, education and training, cooperation between cooperatives and concern for society.

Definitions of Cooperatives in China

Article 2 of the "Farmer Professional Cooperative Law of the People's Republic of China" stipulates: "A farmer professional cooperative is a mutual aid economic organization that is voluntarily united and democratically managed by producers or providers and users of agricultural production and operation services based on rural household contract management." ("Farmer Professional Cooperative Law", 2016).

In the "FPC Law", it is stipulated that the main service object of FPC is its members, and it can carry out one or more of the following services: first, the purchase and use of means of production; second, the production, sales, processing, transportation, storage and other related services of agricultural products; third, the development and operation of rural folk crafts and products, leisure agriculture and rural tourism resources; fourth, services related to agricultural production and operation such as technology, information, facility construction and operation. ("Farmer Professional Cooperative Law", 2017). It is worth noting that the development and operation of rural folk crafts and products, leisure agriculture and rural tourism resources also appear in the "FPC Law".

FPC is an independent economic entity that is different from legal person organizations such as limited liability companies and joint stock companies, as well as non-profit organizations such as social groups. We know that FPC serves farmers and is a mutual aid economic organization with independent legal personality; members voluntarily unite to participate in democratic management in order to obtain good services and increase their own income.

After a long period of practice in China, from the definition of "FPC law", FPC has the following characteristics: First, FPC is a legal person. When FPC is established, it must have its own name, have a fixed organizational structure, have management

rights and governance structure, and be able to independently participate in economic activities and economic litigation; secondly, farmers must be the main members of cooperatives. Article 20(1) of the "Farmer Professional Cooperative Law" stipulates that "farmers should account for at least 80% of the total number of members in a farmer professional cooperative", which clearly defines the main position of farmers in cooperatives; thirdly, FPC is a mutual aid economic organization that must be related to the business content of agricultural and rural activities. It must fully utilize farmers' strengths and provide services to each other among members; finally, FPC has non-profitability internally. This is the difference between FPC and other economic organizations. FPC cannot aim for profit internally but must engage in profitable economic activities externally. The non-profitability of FPC means that a small number of members who manage and operate FPC cannot receive income distribution but can rely on business activities to generate income.

Internal Governance of Cooperatives

Zusman (1992) constructed an organizational screening of collective choice rules in cooperatives based on the use of contract theory, and the model explained how the cooperative's charter was established and how collective choices were made under conditions of limited rationality, uncertainty, and insufficient information. Nilsson (1996) proposed through research that in order to achieve a consistent goal among members in an organization, social factors such as low transaction costs among members, the same values and common organizational spirit are needed, which ultimately benefits unity and reduces transaction costs. Hendrikse and Veerman (2001) used incomplete contract theory and non-cooperative game theory methods to interpret the governance mechanism and investment choices of cooperatives, and the conflicts between producers and marketing cooperatives in dual investment decisions during transactions, which is conducive to understanding producer governance structures, capital formation schemes and incentive systems in economic society.

Huang Shengzhong (2009) took Zhejiang Province in China as an example to expound the internal operation mechanism of farmer professional cooperatives under market economy conditions. At the same time, based on field research, he analyzed and compared the characteristics of its internal governance, emphasizing that farmers are the main body, participating in diversified forms of subjects, serving members, reflecting fairness and efficiency, and ultimately promoting the sustainable development of farmer professional cooperatives. Zhang Manlin (2010) pointed out that through the rational allocation of decision-making power, it is clear that the highest decision-making power is in the member congress during internal operation, clarifying decision-making procedures, emphasizing "capable people" governing society and democratic management, improving the selection system for managers and decision-making mechanisms. Song Yandong (2012) proposed that property rights should be clarified, a sound member equity system should be established; accumulation of public reserve funds, public welfare funds and risk funds should be increased to enhance risk resistance capabilities; surplus profits should be reasonably distributed; and a sound financial management system should be established. Jiang Hong (2014) pointed out that the "Farmer Professional Cooperative Law" breaks through the traditional "one person one vote" voting system. Members with more contributions enjoy additional voting rights according to the charter but must not exceed 20% of the total number of basic voting rights of members of this society. This solves the problem of imperfect democratic decision-making mechanisms. Lu Lina (2014) pointed out that when establishing an incentive mechanism, full consideration should be given to core personnel and general members. Incentive mechanisms should be constructed from the perspectives of large producers, enterprises, core members and general members. In addition, constraints have been established from aspects such as membership qualifications for cooperatives, internal management and government support. This can not only ensure members' enthusiasm but also regulate members' behavior and jointly promote the development of cooperatives.

Cooperative Management

Enke (1945) used neoclassical economic theory to assume that the cooperative is a manufacturer and that when the producer surplus of the cooperative and the consumer surplus of the members are maximized, the members and the social welfare of the cooperative are maximized. Sext (1986) proposed that when cooperatives reach a certain economic scale, the higher level of productivity is a certain degree of competitiveness. Boehkje (1996) suggested that the "new co-operative" has many characteristics, and that the "new co-operative" is more concerned with the specialization of production and the refinement of the supply chain in terms of the contractual relationship with members, and is more adaptable in terms of restructuring and organizational innovation with the development of modern agriculture. Using transaction cost theory, Fahlbeck (1996) suggests that cooperatives need to improve the market failures they face by further extending the processing supply chain through the joint efforts of their members.

Liu Jie (2011) proposed that the law of value is also reflected in the operation of the cooperative economy under the conditions of market economy, and that cooperative economic subjects, as important participants in economic activities, have the adaptability in market supply and demand, competition and price changes, and can reduce losses or interrupt economic activities to a certain extent .

Liang Qiao et al. (2015) pointed out that in the study on the impact of social capital on the performance of farmer professional cooperatives, it is believed that social capital is an important factor in improving performance, and social capital has a positive impact on the capacity enhancement of members and their participation in technical training.

Cooperative and Government Relations

Edwin G. North (1920) conducted research based on the nature of cooperatives. Cooperatives themselves have social attributes. He believes that from the perspective of cooperative development, the government should provide support and assistance. Poter (1987) pointed out that under the principle of fair competition in the market, it is not advocated that the government provide excessive support to cooperatives. It is believed that on the one hand, public resources will be wasted, and on the other hand, the operating efficiency of cooperatives will be limited.

Zhao Xiaofeng (2015) pointed out that the sustainable development of farmer professional cooperatives needs to rely on various policy tools. In the process of a new round of cooperative organization and cooperative system reform, breaking the shackles of relationship networks, weakening the impact of social structure, adjusting the connection mechanism between the state and farmers, and reshaping the logic of action of various interest subjects. Shao Huimin and Qin Dezhi (2018) pointed out that the impact of relationship trust on the overall performance of cooperatives is significantly higher than that of institutional trust. The impact of institutional trust on cooperative economic performance is greater than that of relationship trust; the impact of relationship trust on non-economic performance of cooperatives is greater than that of institutional trust. The above results help government departments and cooperative operators to propose an internal trust optimization mechanism oriented towards performance improvement and provide a decision-making basis for guiding and supporting the development of farmer cooperatives.

Operational Mechanisms of Farmer Professional Cooperatives

Study on the Operation Mechanism of Farmer Professional Cooperatives

A Farmers' Professional Cooperative refers to an economic organization based on rural household contract management, where producers of agricultural products or providers and users of agricultural production and management services voluntarily unite and democratically manage. The cooperative mainly serves its members and provides services such as the purchase of agricultural production materials, the sale, processing, transportation, and storage of agricultural products, as well as technical and informational services related to agricultural production and management. The operating mechanism of a Farmers' Professional Cooperative is mainly composed of four aspects: organizational structure, management mechanism, benefit distribution mechanism, and supervision and incentive mechanism. Improving the operating mechanism of a Farmers' Professional Cooperative can reduce the cost and loss of agricultural production and management, improve the efficiency and quality of agricultural production and management, and promote the rapid development of Farmers' Professional Cooperatives (Wang Min, 2022).

Organizational Mechanisms

Members of a Farmers' Professional Cooperative are citizens with civil capacity, as well as enterprises, institutions and social organizations engaged in production and management activities directly related to agriculture and Farmers' Professional Cooperatives. They can enjoy the services provided by the Farmers' Professional Cooperative, recognize and abide by the charter of the Farmers' Professional Cooperative, and fulfill the membership procedures stipulated in the charter. The general meeting of members of a Farmers' Professional Cooperative is composed of all members and is the power organ of the cooperative. It has the power to amend the charter, elect and remove the president, directors, supervisors, etc. When members vote or pass resolutions through the general meeting of members, they should pass amendments to the charter or merge, split or dissolve the charter with more than half of the total number of votes. (William F., 1997) The

establishment of an association or a resolution of its members should be passed by more than two-thirds of the total voting rights of its members. To achieve comprehensive supervision of cooperatives, it is most important to strengthen propaganda and training by relevant departments so that members and supervisory committees can better reflect their roles. Supervision of cooperative organizational construction can ensure that cooperative decision-making is in line with farmers' interests before sustainable development.

Business Management Mechanism

The business task of a cooperative is to carry out agricultural production and planning arrangements. It is a company that integrates production, sales, processing, transportation, storage and technical consulting. Under the guidance of the cooperative's rules and regulations, it participates in daily operations and regulates the activities of its members. The choice of management mode affects its development plan, so cooperatives should strengthen their learning in management methods, learn from other cooperatives' good management methods, and minimize losses. The management mechanism is divided into business process and business content analysis. The business process mechanism includes pre-production, production and post-production. Business process analysis includes annual experience feedback and summary. Especially after the harvest of agricultural products, a cooperative summary and training should be held to find out the problems that still exist in the benefits of agricultural products this year, summarize the problems raised by the cooperative and the situation of the cooperative, convey them to the members, analyze what adjustments need to be made next year, and plan ahead. Since the business content of a cooperative is multi-level rather than single, the source of income for a cooperative is flexible. It can be derived from cooperative derivative services, government subsidies and main business profits. Better service to agriculture, rural areas and farmers provides effective assistance for rural revitalization (Wang Min,2022).

Profit Distribution Mechanism

The profit distribution mechanism mainly involves the classification of agricultural social sources, the identification of relevant personnel, the planning and arrangement of distribution mechanisms and methods. In recent years, with the support of the state for cooperatives, Farmers' Professional Cooperatives have developed rapidly, and the ways of profit distribution have become increasingly diversified. After making up for losses and depositing public reserve funds, the current year's surplus is the distributable surplus for Farmers' Professional Cooperatives. In addition to the surplus from direct state subsidies and donations from others, it is also used as an asset in accordance with the agreed purpose and the wishes of the donor for social development. When dissolved or liquidated, property formed by direct financial subsidies from the state shall not be distributed to members as distributable surplus assets. The disposal method shall be implemented in accordance with relevant state regulations: if a donation is accepted from another person and there is another agreement with the donor, it shall be handled in accordance with the agreed method. If the association has a loss, it can be made up with public reserve funds after being discussed and passed by the general meeting of members. The insufficient part can also be used to make up for future annual profits (Wang Min,2022).

Cooperative Supervision and Incentive Mechanism

The supervision and incentive mechanism accompanies the operation and development of the entire cooperative, including the supervision of the decision-making of the governing body, the business process and the source of benefits. Supervision includes not only government supervision but also internal personnel and member supervision within the cooperative. The government and members play an important role in the supervision and incentive mechanism, and only by playing a good role in supervision and incentives can the cooperative develop better. (Liang Xinyuan, 2022) The government-led supervision mechanism carries out multi-department joint inspections. The government's inspection organization not only investigates this year's planted products of the cooperative, but also investigates

past data. Multiple investigations are to prevent fraud from damaging the interests of the state and farmers. Members also supervise each other. Friction between neighbors is inevitable, so they supervise each other to prevent damage to other members' fields, resulting in reduced production and income, and supervise whether the cooperative is broadcasting relevant correct products. In terms of incentives, cooperatives are incentivized by the government and have an incentive effect on members. At present, the government requires cooperatives to set up a fund first, plan and carry out planning, and then distribute funds to cooperatives after signing. By encouraging members to actively improve production efficiency and realize their self-worth, cooperatives give members sufficient respect and directly realize their self-worth. Cooperatives can not only bring good benefits to themselves but also have a good reputation and can better and faster achieve the development of rural revitalization strategy.

Comparison Between Farmers' Professional Cooperatives and Other Cooperative Organizations

Farmer Professional Cooperatives Versus Farmer Professional Associations

Farmers' Professional Cooperatives and Farmers' Professional Associations are two basic forms of Farmers' Professional Cooperative Organizations. Their organizational goals, principles and decision-making procedures are the same, but there are also significant differences. These differences are reflected in the following aspects:

First, the participants are different. The participants in a cooperative are usually individual farmers. The participants in an association are generally enterprises and workers, with a few individual farmers.

Second, the relationship between members and organizational interests is different. A Farmers' Professional Association is not necessarily an economic entity, and its members can only pay membership fees, so only honorary benefits are distributed. A Farmers' Professional Cooperative must be an economic entity, and members must contribute capital and generally pay a certain amount of share

capital. Each share is fixed, but each member can subscribe for different numbers of shares. Therefore, the distribution of income is different. The more shares subscribed for, the more dividends will be distributed (Liu Zengming,2013).

Third, the scope of member services is different. Farmers' Professional Associations mainly provide technical and information services and guidance to their members at a relatively primary level. In contrast, Farmers' Professional Cooperatives may involve deeper relationships such as pre-production, production and post-production services and purchase and sales. The requirements of cooperatives are higher than those of associations and are the requirements after the development of associations.

Farmer Cooperatives Versus Companies

Farmers' Professional Cooperatives and companies are both market legal entities, but there are significant differences in their registration and management by the industrial and commercial departments. These differences are reflected in the following aspects:

First, the organizational purpose and foundation are different. The purpose of a cooperative is to serve its members and seek common interests for all members, not to make a profit. In contrast, the purpose of a joint-stock company is to make a profit. A cooperative is a combination of "people" and is an economic organization based on people and mutual assistance among farmers. A company is a combination of "capital" and is based on capital as an investment behavior.

Second, the service and transaction objects are different. Members of a cooperative are the main customers of the cooperative. Cooperatives mainly trade with their members, while companies do not adjust service interest transactions internally.

Third, the management methods and surplus distribution are different. In a cooperative, everyone has an equal opportunity to speak, with one person one vote. In contrast, in a company, those who invest more money have more power. The surplus of a cooperative is distributed according to a combination of shares and

contribution levels, while that of a joint-stock company is distributed according to shares.

Fourth, the decision-making methods and organizational goals are different. Farmers' Professional Cooperatives implement democratic management, while enterprises implement capital decision-making and exercise voting rights according to their capital contribution ratio. Farmers' Professional Cooperatives are a new type of economic organization with the common interests of all members as their goal. In contrast, companies mainly aim to make profits and maximize shareholder interests.

Farmer Professional Cooperatives Versus Social Groups

The fundamental difference between Farmers' Professional Cooperatives and social organizations lies in whether they can engage in profitable activities. In practice, some social organizations charge a certain fee for their business activities, but this is not considered profit in civil law theory. In civil law theory, profit refers to the act of engaging in business activities and distributing profits to members. If a legal person makes a profit but does not make a profit for its spiritual growth, it is not considered a profitable activity.

Theories on Cooperatives

Theory of Cooperative Economy

Cooperative economy is an economic form that combines individual ownership and common ownership of cooperative members. When social economy develops to a certain stage, workers voluntarily join joint operations, obtain services and benefits through democratic management, and obtain services and benefits. In the economic systems of different social forms, cooperative economy has the commonality of voluntariness, democracy and mutual benefit. Cooperatives are a typical organizational form of this cooperative economic relationship.

The representatives of cooperative economic theory mainly include Western cooperative economic theory and Marx's cooperative economic theory. Western cooperative economic thought was proposed by utopianists Owen and Fourier. They

believed that in the grassroots organizations of ideal society, everyone participates in labor and enjoys equal distribution rights, and closely connects all links of social reproduction in the organization. The Rochdale Pioneers Society is a prototype of a cooperative. For the first time, it applied the theoretical role of cooperatives to practice and achieved success. It proposed the principle of “people-run, people-enjoyed and people-owned” for running a society (Rochdale, 1844). Another representative theory of cooperative economic theory is Marxist cooperative economic theory, which proposes that the operation of cooperative economic organizations can change land ownership and replace private land ownership with collective land ownership. Both believe that the principles of voluntariness, equality and democratic management should be adhered to, and mainly adopt the method of distribution according to labor. With the development of cooperative economy, views such as share dividends and emphasis on education have been put forward successively. At the same time, the concept and characteristics of cooperatives have been defined. On this basis, the internationally recognized basic principles of cooperatives have been used as the vision for the operation and development of cooperatives, providing a theoretical basis for the normative development of cooperatives.

Cooperative economy has two meanings: one is cooperative system economy, and the other is cooperative group economy. Both cooperative system economy and cooperative group economy in these two meanings are two types of cooperative economic organizations. Cooperative system economy is a social and economic organization system. Cooperative system economy has its specific organizational form, reflecting specific economic relations, it is a mass economic organization that achieves specific goals through cooperation. The content, nature, function and effect of cooperative economy vary according to its specific time, country and socio-economic development conditions. "Cooperative system economy refers to an economic organization formed by workers with the goal of cooperative production and economic mutual assistance. Cooperative system economy emerged relatively early in history, with Marxist scholars promoting cooperative economy in the early 19th century.". (Yang Xin, 2021). The basic values of cooperatives are self-

help, democracy, equality, and unity. Cooperative group economy is a representative form of cooperative economy, in which agriculture is a relatively active field. In 1945, Comrade Mao Zedong pointed out in the "United Government" that after the establishment of the new democratic country, various economic forms will coexist, including cooperative economy, public economy, and individual economy of working people (Hou Jia, 2022)

The Marxist cooperative economic theory emphasizes the principle of establishing voluntary and exemplary cooperatives. Taking the path of cooperatives cannot take coercive measures such as plundering, and cannot offend farmers. Farmers should truly feel the relevance of their own interests to cooperatives; On the basis of systematically elaborating Marx's theory of cooperative economy, Engels also formed a complete theoretical framework for moving from small-scale peasant economy to cooperative economy. According to Engels' cooperative economic theory, the original intention of small-scale peasant reform is to guide the decentralized small-scale peasant economy to the cooperative development mode by means of cooperatives and adopting the principles of peaceful transition, demonstration guidance, and voluntary participation, in order to improve production efficiency, Transforming privately owned property through scale management into cooperative ownership to protect the interests of farmers; (Yang Lijuan, 2015). Lenin's thought on cooperative economy believes that cooperative economy is based on farmers' independent management and voluntary participation. Cooperatives must protect the basic interests of farmers from infringement. Cooperatives must provide subsidies to farmers, and protect their interests by reducing agricultural taxes to reduce the scissors gap between workers and farmers. (He Wenhua, 2013).

From the perspective of the development history of Chinese cooperatives, the disaster relief mutual assistance cooperative organizations and production organizations that exist in China's history can be described as the original form of cooperative organizations. With the introduction of modern Western cooperative ideas, cooperatives have developed rapidly in China. By 1945, there were 170000 cooperatives in China, and by 2015, cooperatives had covered 41.7% of the country's farmers. From the centennial development history of cooperatives, it can be seen

that the nature of the cooperative economy is neutral, Cooperative economy can not only adapt to feudal society, but also adapt to capitalism and socialism. Some Western scholars also consider cooperatives as a part of the capitalist system. From the perspective of the development of cooperatives in the West and China, cooperatives have been entrusted with the political and social goals of a country and a society. Therefore, cooperative economy is seen as a carrier of the transition from capitalism to socialism. (Chen Chuankang, 2016)

Regarding modern cooperative economic theory, Western scholars believe that cooperatives are enterprises or organizations jointly owned and managed by many people, namely, cooperative. The founders of cooperatives are those who share all their benefits, and they have the right and obligation to own and operate certain economic activities. However, the difference between this type of organization and ordinary enterprises is that its purpose of existence is not to earn profits, but to achieve the interests of all members of the community. Western cooperative economic theory studies the cooperative system under the conditions of market economy, which refers to the cooperative production and operation between private owners of means of production. Therefore, in the West, cooperative economy is accompanied by market economy, and it is an economic form that coexists for a long time as a complementary form of shareholding system. (Liao Yunfeng, Xu Zhenyu, 2007)

Principal-agent Theory

The Principal-agent Theory was proposed by American economists Berle and Means. They found that there were defects when the owner of an enterprise was also the operator, so they believed that ownership and management rights should be separated, allowing the owner to retain ownership while entrusting the property of the enterprise to others for management. The “Principal-agent Theory” has become the logical framework of modern corporate governance.

Dmdinaoff believes that the Principal-agent Theory is also of considerable significance in cooperatives, which is conducive to improving member enthusiasm and solving problems such as low member participation interest. Emelianoff and

Phillips' research pointed out that the Principal-agent Theory clarified who benefits in cooperative governance. In domestic research, Ma Yanli (2008) developed the "Double Principal-agent" theory based on the "Principal-agent Theory". She believes that there is a "Double Principal-agent" relationship in China's cooperatives and pointed out that most of the conflicts of interest between core members and small members in cooperatives are caused by the "Double Principal-agent" relationship, which can be alleviated by improving the governance structure of cooperatives.

Yuan Jiuhe (2013) pointed out that the main reasons for the emergence of principal-agent relationships in China's Farmers' Professional Cooperatives are differences in resource endowments, behavioral motivations and capabilities of participants. The Principal-agent Theory believes that members jointly own decision-making power and ownership of asset surplus in cooperative governance (Liang Qiao, Huang Zuhui, 2011), because the right to claim surplus in cooperatives cannot be transferred or marketed, so there are many agency problems within cooperatives (Shao Xingquan, 2013).

In a principal-agent relationship, the principal hires an agent to work for him or her. This is actually a contractual relationship. The principal hires an agent to work for him or her and grants the agent certain management powers and decision-making powers. According to the quality of service provided by the agent, he or she provides a certain remuneration. This relationship is established under the condition of information asymmetry between the principal and the agent (Wen Kaixiang, 2022; Zhou Jiayu, 2021; Tan Zhixin, Kong Xiangzhi, 2011). The principal and agent are connected through a contractual relationship. What the principal pursues is to maximize his or her own economic interests, while what the agent pursues more is to satisfy his or her own demands. In cooperation, agents have more information than principals. When agents act inconsistently with principals' interest goals for their own maximum benefit, principals may harm agents. Principals can reduce risks by establishing incentive and restraint mechanisms for agents (Gao Lin, 2014; Wang Yan, Li Lutang, 2010; Luo Yuanhong, 2019; Luo Chaohui, 2010).

Shao Xingquan believes that from the perspective of the composition of the cooperative council members, when a small number of core members constitute the cooperative council, there is a principal-agent relationship between ordinary members and core members (Shao Xingquan 2013). Lan Yafei conducted research from the diversity of participating subjects in cooperatives and believed that since participating subjects are diverse, the agency relationship in farmer professional cooperatives is not unique and also has diversity. He believes that there are four types of principal-agent relationships in cooperatives. The first is between members and the representative assembly. The member assembly is the decision-making body of the farmer professional cooperative. The member representative assembly can exercise the powers of all members according to the charter when the corresponding number of people meets the standard. Therefore, the representative assembly is an agency organization for the powers of cooperative members. The second is between the member assembly and the manager. The council plays a very important role in protecting the interests of all members. A healthy council is conducive to improving the management efficiency within farmer professional cooperatives. However, once the manager of the cooperative controls the council, it is difficult for the council to play a good supervisory role, and the principal-agent relationship between the member assembly and the cooperative manager is transformed into a principal-agent relationship between members and cooperative managers. The third is between the council and managers. China's farmer professional cooperatives have a chairman and can set up a council. The chairman is democratically elected by members from among its members at a member assembly. The chairman is the legal representative of the cooperative and is responsible to the member assembly. The council entrusts the chairman to manage the cooperative, and the sense of responsibility and personal ability of the chairman are directly related to the management level and operating efficiency of the council. The fourth is between small and medium-sized members and core members. At present, most farmer professional cooperatives in China do not have professional managers, and it is generally a small number of core members who represent councils to manage cooperatives. There are different interests between core members and small and medium-sized members, especially

when core members contribute more capital, member heterogeneity is high, and small and medium-sized member loyalty is low. Core members have absolute say in cooperatives, they may not regard cooperatives and all member interests as their only pursuit, so there will be an agency-principal relationship between small and medium-sized members and core members (Lan Yafei 2020).

Transaction Cost Theory

Transaction cost is the core theory of modern property rights economics. Commons believes that the core concept of economic analysis is transaction. Transactions are divided into three types: buying and selling, management, and restrictive transactions, which appear in markets, enterprises, and government management behaviors respectively. Transaction cost theory believes that transactions are costless, but the operation of market mechanisms has certain costs. Williamson's research believes that the factors affecting costs are first human factors, including opportunistic behavior and human bounded rationality; secondly transaction factors, including market uncertainty, transaction frequency, and the number of potential trading counterparts.

The purpose of transaction cost theory is to define and clarify property rights rules, improve resource allocation efficiency, and reduce transaction costs. The research viewpoint is that enterprises and markets have different transaction mechanisms but can be substituted for each other. Enterprises can replace markets to complete transactions and save transaction costs; when the management costs brought by "internal" market transactions are equal to the saved market costs, enterprises will no longer expand. Transaction cost theory actually redefines the boundaries of economics and broadens the scope of research, making economics change from "zero transaction cost" to "transaction cost", and also reinterprets realistic economic problems. At the same time, we also see that once the market transaction costs rise, enterprises will turn it into internal management costs in order to achieve the purpose of saving costs. Therefore, under market economy conditions, there are various governance structures such as cooperatives, joint ventures and partnerships.

As an organization pursuing collective interests, farmer professional cooperatives improve their degree of organization through farmer unions. On the one hand, cooperatives can improve their bargaining power, share the high cost of individual information collection by farmers, concentrate on purchasing means of production and selling agricultural products. This reduces market development costs and channels, reduces sales risks of agricultural products, improves agricultural product prices, and thus achieves the effect of promoting farmers' income; on the other hand, when economic disputes occur, this economic organization can effectively use legal means to protect farmers and improve farmers' bargaining position in disputes. These benefits have an important impact on farmers' participation in cooperatives.

Motivation Theory

Incentive theory aims to stimulate employees' enthusiasm by studying people's various needs and constructing a reasonable management system, thereby improving the work efficiency of the enterprise. Under market conditions, conflicts will arise due to different interest needs between the principal and the agent. In order to resolve this conflict, it is necessary to increase the agent's incentives for the principal. Based on this, incentive mechanisms are widely used in organizational governance. The formulation of reasonable and scientific incentive mechanisms is of great significance for achieving organizational goals and improving efficiency.

There are many definitions of "incentive" at home and abroad. American management scholars Koontz and Weihrich regard "incentive" as a series of chain reactions triggered by human needs, that is, after people generate a certain need, they will strive to meet this need. Therefore, people's behavior is influenced by needs, and people will choose actions based on needs to achieve their goals. American management scholar Stephen P. Robbins also emphasized the connection between incentives and needs. He believes that individuals are willing to make efforts for the organization on the premise of meeting their own needs. If the organization's goals can be achieved, then they will not make too much effort, which leads to the definition of incentives (Harold Koontz, 1998). American economist

Edward Lazear believes that incentives need to start from the needs of employees and emphasize that incentives are material or spiritual encouragement for employees to meet their needs in order to achieve organizational goals (Stephen P. Robbins, 1998).

According to the definition of "incentive" by domestic and foreign scholars, it can be seen that incentive is not a single behavior of an individual, but is achieved as a process. Secondly, incentives are used to meet people's behavior. If incentives do not achieve results, it may be because they have not met people's needs. Furthermore, incentives need to rely on certain material and spiritual means, and combining spiritual means with material means according to the needs of the incentive object can achieve the best effect of incentives. Therefore, researchers define incentives as a psychological process in which human enthusiasm is reflected. And this process has certain regularity: when people have a certain need, the need will trigger motivation and then dominate people's behavior in order to achieve the ultimate goal (Lai Baoxia 2022).

Incentive theory mainly includes content incentive theory and process incentive theory. Content incentive theory mainly refers to material incentives and spiritual incentives for employees. Material needs are basic guarantees for employees' work and life. Rich material incentives can improve employees' work enthusiasm (Wang Xin 2022). Content incentive theory mainly includes Maslow's hierarchy of needs theory, Alderfer's existence-relationship-growth theory and McClelland's achievement need theory, Herzberg's two-factor theory (Yu Wenzhao Li Chengyan 2022). Process incentive theory includes reinforcement theory proposed by American behaviorist Skinner, expectancy theory by American psychologist Vroom, equity theory by American psychologist Adams, goal theory by American management professor Locke and Latham (Chen Xiuqiong 2021). Process incentives include equity incentives and goal incentives. Equity incentives believe that employee enthusiasm and subjective initiative in work are not only related to their content incentives but also their cognition of fairness in work. Equity incentives aim to emphasize equal treatment of employees in the process of employee incentives so that employees feel treated fairly. Goal incentives refer to enterprises guiding

employees to gradually strive towards development goals together and transforming enterprise goals into employee realization goals. Common goals and efforts can promote the formation of enterprise cohesion.

In cooperative governance, incentive mechanism is an important means. The operation of FPC involves multiple parties including managers, members and enterprises. These parties have different self-interest needs. To properly handle the relationship between stakeholders and fully mobilize their enthusiasm. Therefore, effective incentive mechanisms should be implemented for managers, members and enterprises respectively. For example: linking managers' remuneration with management performance; members can receive technical training from cooperatives at low prices and profit returns from cooperatives. It can be seen that the incentive mechanism mainly improves the enthusiasm of managers and members through satisfying material and spiritual needs so that cooperatives develop benignly.

The principle that incentives can produce effects emphasizes that in the early stage of cooperative development, capable people in cooperatives sacrifice cooperative interests for personal gain maximization at the expense of other members' rights in cooperatives. Improving the supervision mechanism of the council and giving full play to the supervisory function of the board of supervisors is key to solving capable people infringing on other members' rights. In designing cooperative incentive mechanisms, it should be possible to mobilize member enthusiasm as much as possible and stimulate capable people's resource endowment supply and output as well as ordinary member learning ability to absorb capable people's knowledge, so as to achieve consistency between the goals of members of cooperatives and the goals of cooperatives. (Shen Binghua, 2020)

The application of explicit motivation theory and implicit motivation theory in motivation theory in cooperatives emphasizes that, on the one hand, capable people in cooperative organizations can be encouraged to contribute their own abilities by establishing motivation mechanisms that target capable people, providing them with material rewards for public goods, and designing motivation compensation mechanisms for capable people, (Chen Shibo, Li Chongguang, 2008). There are no clear requirements for motivation and constraints for cooperatives in the Law on

Farmer Professional Cooperatives, but the accumulation of intellectual capital in cooperatives also requires incentives. Relevant departments should strengthen the innovation of incentive systems in cooperative management systems, and the design of motivation systems should be oriented towards humanization and fairness, so that capable people in cooperatives can play a greater role. On the other hand, through the construction of reputation mechanisms and the introduction of social capital to stimulate the enthusiasm of capable people, through self realization of the pursuit of reputation and continuous maintenance of the social capital of capable people in cooperatives to achieve incentives for capable people in cooperatives. (Luo Qi, Tang Chao, Luo Mingzhong, 2018)

Organizational Competency

Competency refers to the individual conditions, basic situations and behavioral characteristics that directly affect job performance. In 1973, Dr. McClelland published an article in the American Psychologist magazine, emphasizing starting from first-hand information resources, facing reality, and conducting in-depth research on individual conditions, basic situations and behavioral characteristics that may truly affect job performance. Through personal business success, both personal abilities are exerted and significant contributions are made to the company, thereby improving the efficiency of the organization. He called these individual conditions and behavioral characteristics that directly affect job performance as competencies. The process of determining competency requires two basic principles: (1) Whether it can clearly distinguish job performance is the only criterion for judgment; (2) Whether the ability to distinguish job performance must be based on objective data (Mcclelland, 1973).

What is organizational competence? In the study of organizational competence, there are two views. One is that organizational competence is replaced by core competence, and the other is that organizational competence is replaced by the competence of the core team. This article adopts the first view. Organizational competence can be understood as an organic combination of knowledge, skills,

resources and endowments possessed by organizational members. Studies have shown that the distribution of knowledge, skills, resources and endowments among organizational members is uneven. This heterogeneity is often not realized. It is only internalized as human capital. The functions possessed by organizational members have different types and value differences in specific market environments. Therefore, the heterogeneity of knowledge, skills, resources and endowments is related to competitive advantage.

Economist Marshall was the first person to explain organizational competence from an organizational perspective. When Marshall studied the classical economics paradigm, he found that the same elements apply to different organizations and their output capabilities vary greatly. Classical economics did not explain this part of increased or decreased output. Marshall also found that there can be some substitution between labor, capital and resources. Whether this substitution can be implemented in an enterprise does not depend on these factors but on the organization that determines these factors. Studies have found that an enterprise's output capacity depends not only on labor, capital and resource inputs but also on their substitution rate and the organizational power to achieve this substitution rate. "If there is no coordination, productivity cannot be improved by simply accumulating resources." In the output process, various factors are reduced due to neglect of the role of organization. At the same time, for the classification of organizational competence, different scholars have many inconsistent views (Zhang Lei 2006).

The composition of organizational competence and its relationship with performance. Organizational competence includes six aspects: action leadership, team orientation, online interaction, knowledge sharing, learning participation and adventurous spirit. Studies have shown that in six aspects of organizational competence there are significant differences in organizational variables (such as organization size and leadership); The relationship between entrepreneurial organizational competence and corporate performance is affected by variables in the development stage of the organization. Different contents of entrepreneurial organizational competence have different impacts on efficiency at different stages of development for enterprises. In the initial stage of investment network technology

use has a negative impact on enterprise survival performance; In the early stage of entrepreneurship core member behavior has a positive impact on enterprise development but little impact on enterprise performance; In the growth period of enterprises team leadership has a greater impact on company performance (Zhang Juan 2010).

For cooperatives under specific conditions there are interests and abilities from their inception. On one hand under certain market economic conditions cooperative development requires organizational capabilities to adapt to changes in environment and demand. This organizational capability manifests itself as core member behavior and cooperation; On the other hand adaptability to market demand ability distribution is uneven. Therefore differences in core member abilities and values determine differences in member rights under cooperative institutional arrangements.

From a literature perspective competency is a capability as well as a research perspective. It targets specific target organizations and target groups. In the past it provided certain standards for describing organizational capabilities. It is valuable unique has conducted relevant research in practice and innovation.

Organizational Competency Theory

Prahalad and Hamel (1990) published an article “The Core Competence of the Corporation” in the Harvard Business Review, proposing the concept of “core competence”, referring to unique intellectual, process and product capabilities related to market competition. In the past, the field of psychology viewed the concept of competence from the perspective of individual adaptation to work and society. If an organization is viewed as an organism, then the organization also has the ability to adapt to its environment (Prahalad & Hamel, 2010).

Organizational competence is often used to explain a company’s overall collective learning ability and performance. Recent research shows that the study of competence has gradually developed from an individual perspective to an organizational perspective. This change means that competence is no longer limited

to psychology. The field is a clear management concept, especially a category of strategic management. Prahalad and Hamel believe that there are at least three aspects that can be used to determine a company's core competencies. 1. Core competencies provide potential access to a wide and diverse market; 2. Core competencies will have a significant impact on customer benefits for end products; 3. Core competencies should be difficult for competitors to imitate.

Allee (1997) described a company's core competencies, including core operational capabilities and core technical or knowledge competitiveness. Core operational capabilities are processes and functions that enable companies to produce high-quality products and services at high speed and efficiency. Core operational capabilities are routine capabilities for many successful companies (Allee, 1997).

The Spencer (1982) proposed the iceberg model, in which competence was refined into six elements. The first is knowledge, which refers to the information that individuals should possess in order to successfully complete tasks, including information obtained through learning and practice. The second is skill, which refers to an individual's ability to master and apply knowledge and professional skills to complete specific tasks; The third is value standards, which refer to an individual's understanding of social norms and their own social status, as well as the behavioral patterns formed on this basis. Fourth is morality, which refers to an individual's ability to self-regulate and control their behavior and thoughts through self-evaluation and cognition; The fifth is traits, which refer to an individual's physiological characteristics, personality characteristics and typical behaviors; The sixth is motivation, which refers to promoting individuals with certain stable and persistent internal motivation as their goal (Tan Haiyang, n.d.) .

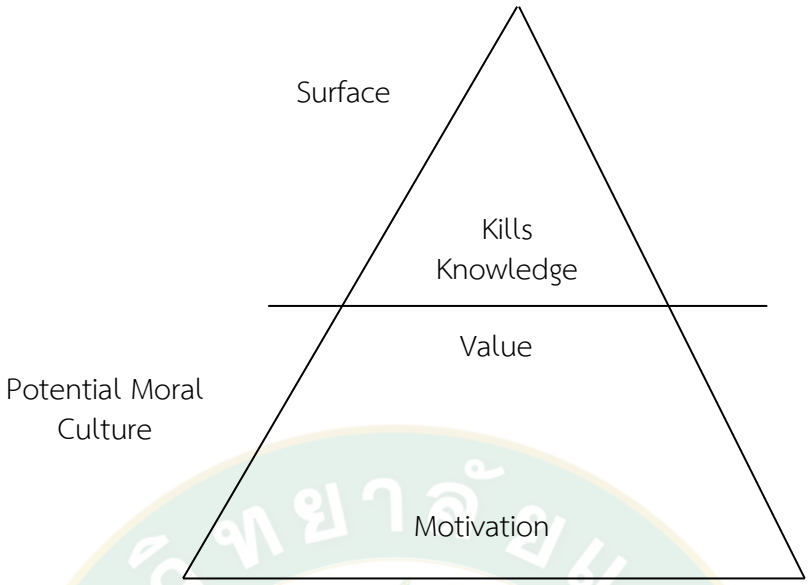


Figure 3 Iceberg model

The research project designed indicators of farmer professional cooperative competence in terms of four dimensions: information, performance, skills and culture.

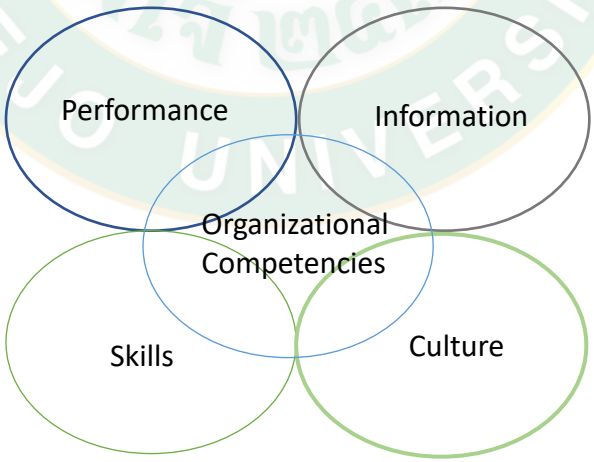


Figure 4 Organization Competency

Training Needs

In 1961, McGehee and Thayer proposed training needs in “Training in Business and Industry”; in the 1980s, IL.Goldstein, EP Braveman and H.Goldstein proposed the Goldstein model, that is, training needs analysis consists of three parts: organizational analysis, task analysis and personnel analysis. In order to coordinate the training needs of employees and enterprises, Goldstein (1991) proposed a three-element training needs analysis method. He believes that training needs analysis should be carried out from the perspectives of organization, tasks and personnel (Zhu Xinyue, Pu Xiaohong, 2007). Raymond A. Noy, John Hollenberg (2000) and others summarized Goldstein’s three-element theory, analyzed the influencing factors of training needs, and proposed training suggestions and evaluation requirements on this basis. Studies have shown that technological progress, intensified industry competition and poor product performance are the reasons for the emergence of training needs. Goldstein (2002) integrated knowledge, skills and abilities (KSAs) into task analysis and proposed a three-element method to expand the model, which made job analysis more complete and accurate.

After the three-element model, many scholars have proposed training needs analysis models from different perspectives. Humphrey proposed the theory of “collective training” from the perspective of the entire organization. He believes that an organization includes goals, institutions, personnel, equipment, procedures and resources, and proposes practical methods for continuously motivating teams and guiding team success, including team formation, initiation, training and maintenance (Humphrey, 2008). Weihrich and Koontz proposed a management training needs analysis model for management personnel training (Putti, Koontz & Weihrich 1998). Brown proposed the basic principles of training needs assessment, analyzed the organization, tasks and individuals of training needs, and compared the advantages and disadvantages of assessment methods such as surveys, interviews, performance evaluations, focus groups and document reviews (Brown 2002).

Ma Jianjun pointed out that corporate employee training is an important part of corporate human resource management and development and a key function. Therefore, the analysis of employee training needs is the basis for improving employee training quality (Ma Jianjun & Chen Jianhua 2001). Wang Peng introduced and commented on the recently developed theories and methods of training needs assessment. He emphasized the special role of demand assessment in overall training design and goal determination. This article focuses on introducing evaluation methods based on training intentions. Research trends in knowledge skills evaluation of personal characteristics etc. The special significance of new research trends in capability analysis methods (Wang Peng & Shi Kan 1998). Zhao Decheng proposed that training needs analysis is an activity to determine whether training is needed before training planning who needs training what kind of training is needed. He conducted a demand training analysis for teachers using performance analysis models and organizational-task-personnel analysis models to analyze teacher training needs. In order to promote attention to and analysis of training needs by practitioners in practice it is recommended: (1) Specialized training for trainers on demand analysis; (2) Analyze teacher training needs from a strategic perspective; (3) Scientifically pay attention to the normativity of demand analysis; (4) Give full play to various functions of demand analysis (Zhao Decheng & Liang Yongzheng 2010). Yu Miao believes that whether or not the need for training can be accurately identified directly determines the effect of the training. The choice and evolution of its corporate strategy will affect employees' need for training. Therefore we should try to theoretically explain the macroscopic and universal connection between corporate strategy and employee need for training (Yu Miao & Kong Yan 2001).

Domestic and foreign researchers have constructed different models for analyzing demand based on many studies and practices. Many scholars have also analyzed them but no matter which model there are some defects. First there is a lack of strategic analysis in theory or method as well as a connection between demand or organizational strategy although there are other strategic analysis frameworks in theory they cannot be effectively analyzed by enterprises or

organizations; secondly traditional demand models have improved demand from different levels but still lack a unified conceptual framework or analytical framework.

Adult Learning Theory

Since the beginning of the 20th century, the knowledge system of adult learning has continued to develop and change. Many learning theories have been developed, including adult learning, self-directed learning, informal and leisure learning, women's learning, situational learning and postmodernism learning.

Workplace Learning Theory

According to Billett's research, workplace learning is a method of acquiring knowledge and skills through direct or indirect training in the process of skilled workers participating in work practices. He divided knowledge into three categories, including declarative knowledge, procedural knowledge and dispositional knowledge (Billett, 2001). Individual learning in the workplace is mainly informal learning. Learning is a continuous and inevitable process in the workplace. The degree of learning depends on the type of activities they participate in and the guidance they receive, including the type of personal participation, direct and indirect guidance received, the continuity of participation and the relevance of existing knowledge systems (including interests and personal preferences). Studies have shown that employees' learning in the workplace will have an impact on the development of the organization (Nalebuff and Brandenburger, 1997).

Humanistic Learning Theory

Humanistic learning theory began in the 1960s. G.R.Rogers believed that personal potential can be realized through certain means and learning can promote the development of personal potential. Studies have shown that the structure and process of the self-system constrain autonomous learning. The structure of the self-system includes components such as self-concept, self-worth, and self-image; the process of self-learning includes self-monitoring and self-evaluation of learning

outcomes, such as learning plans, setting learning goals, selecting learning strategies and methods. Self-concept is the most important factor affecting self-learning. These processes directly affect the quality of individual self-study (Bi & Yang 2012). Markus and Wurv found in 1987 that autonomous learning is usually divided into three steps: setting goals, formulating plans and selecting learning strategies, behavior execution and evaluation (Liu Xuanwen 2002).

Conceptual Framework

In summary, this paper analyzes the concept of cooperative economy, the development of Chinese cooperatives, and the different meanings of cooperatives. At the cooperative level, more attention should be paid to internal governance, management, operational mechanisms, the relationship between cooperatives and the government, and the relationship between cooperatives and other cooperative organizations. At the theoretical level, attention is paid to cooperative theory, including cooperative economic theory, principal-agent theory, transaction cost theory, and incentive theory. Additionally, focus is placed on organizational competence and organizational competence theory. In terms of training needs, the main emphasis is on adult learning theories, including workplace learning theories and humanistic learning theories.

In the process of rural revitalization in China, the researcher draw on advanced international and domestic experiences and concepts through research, and combine them with the actual situation in Yunnan. Taking the Bajie Town Cooperative in Anning City as an example, we hope to provide some inspiration for the development of farmers' professional cooperatives.

Firstly, by studying the competence of the Anning Bajie Town cooperative, we provide theoretical guidance for the development of farmer specialized cooperatives. Based on the definition of cooperatives and cooperative economic organizations, we discuss the development course and ways of farmer specialized cooperatives in China. The study of cooperative economic organizations involves not only industrial organization and agricultural management system reform in the field of agriculture

but also theories of agricultural industrialization and farmers' collective action. The study of these issues can provide a theoretical basis for the development of cooperative economic organizations.

Secondly, by studying the factors that influence the competence of farmers' professional cooperatives, we strengthen the role of the government in promoting their development. China's experience shows that government support, especially financial support, can effectively promote the development of cooperatives, increase farmers' income in the long run and ultimately promote agricultural modernization.

Finally, by studying cooperative competence and influencing factors, we explore effective ways for farmer specialized cooperative development. After the promulgation and implementation of China's Law on Specialized Farmers Cooperatives, specialized farmers cooperatives have their own legal system which means that their development will be accelerated. Farmers' specialized cooperatives can carry out economic activities in a more standardized manner within the legal scope.

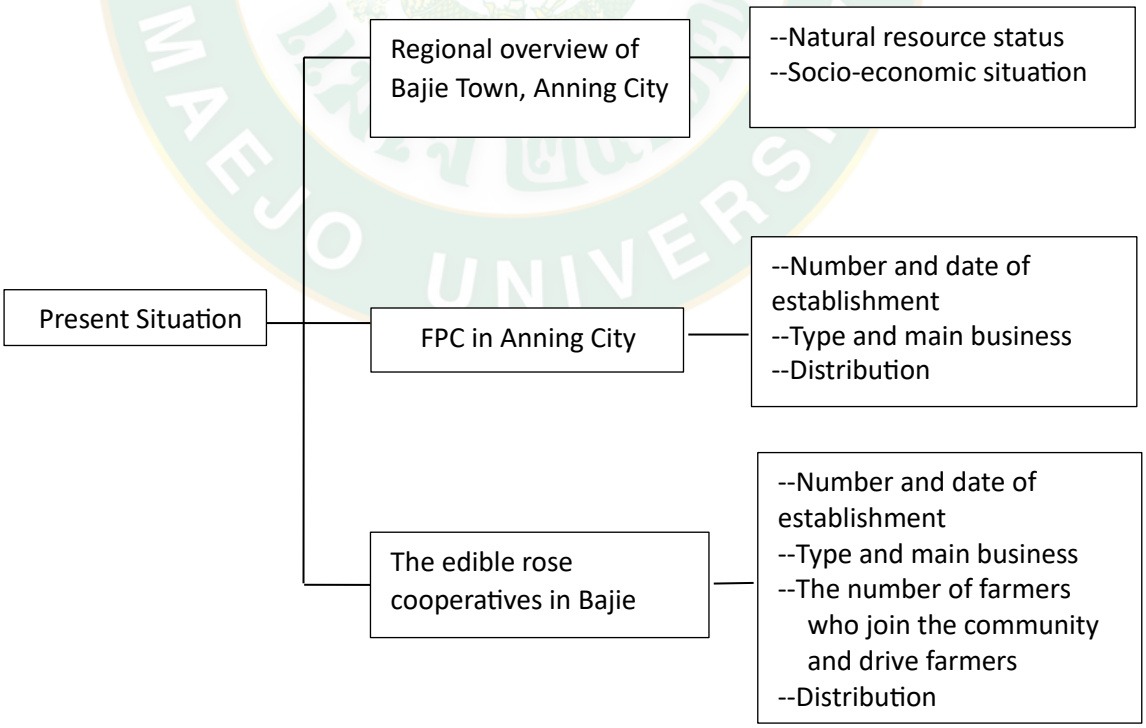
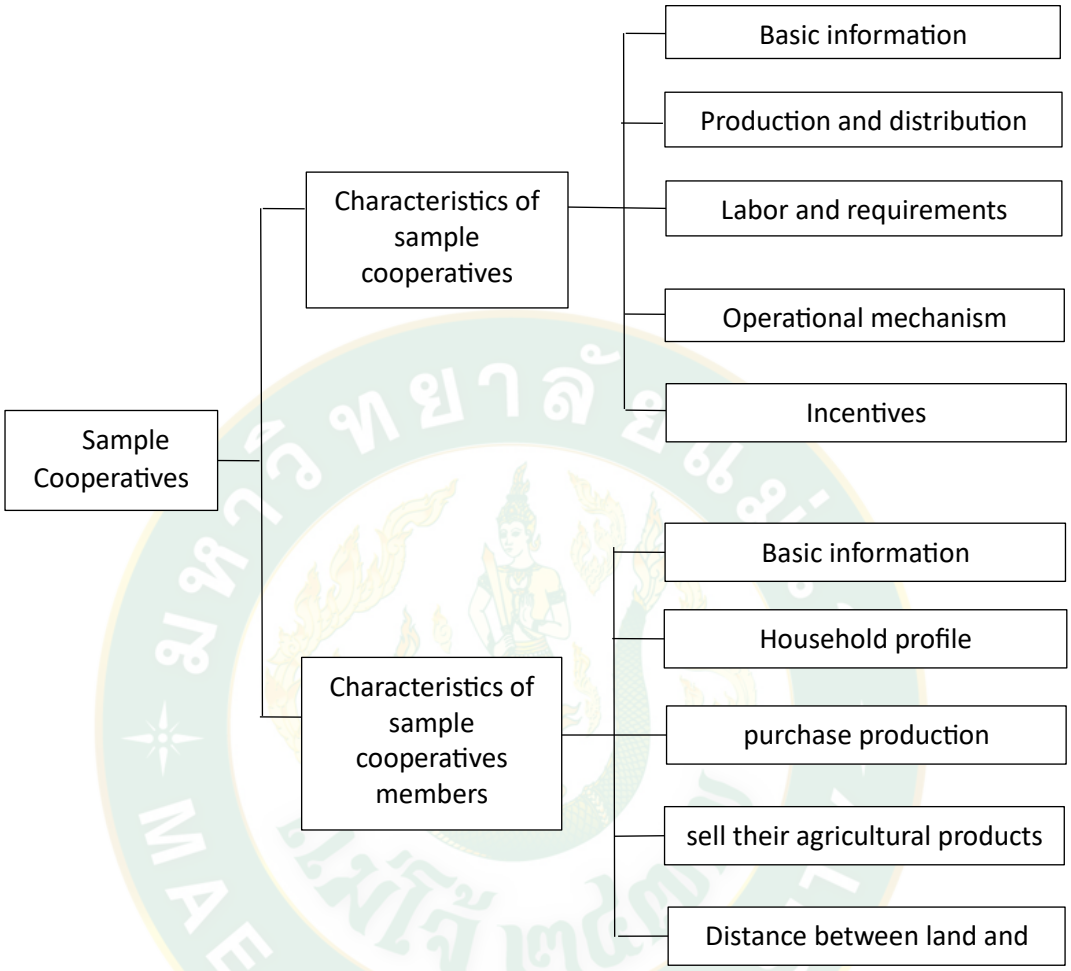


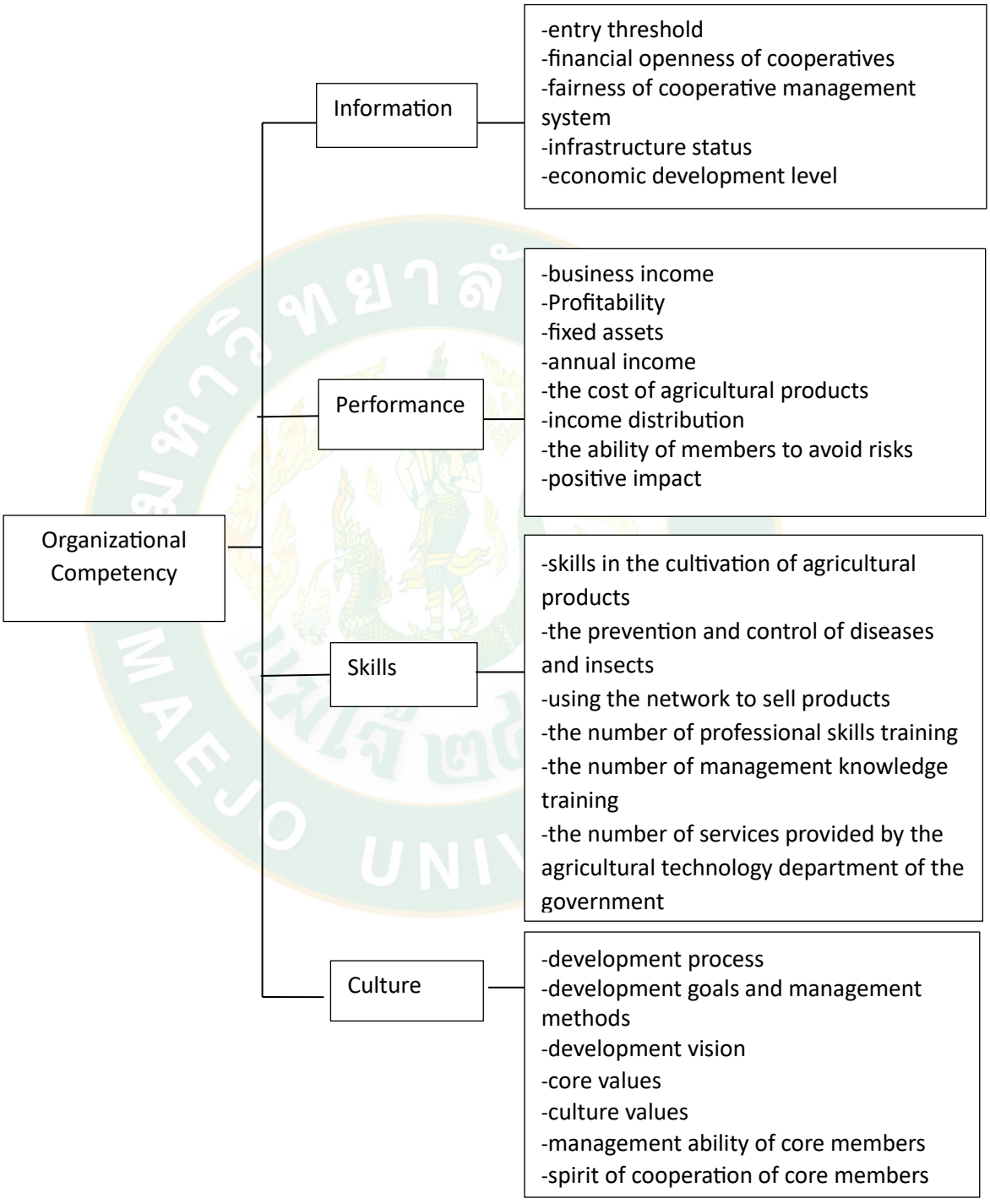
Figure 5 Present Situation

Objective 1: To investigate the present situation of farmer professional cooperatives in Bajie Town in Anning city.



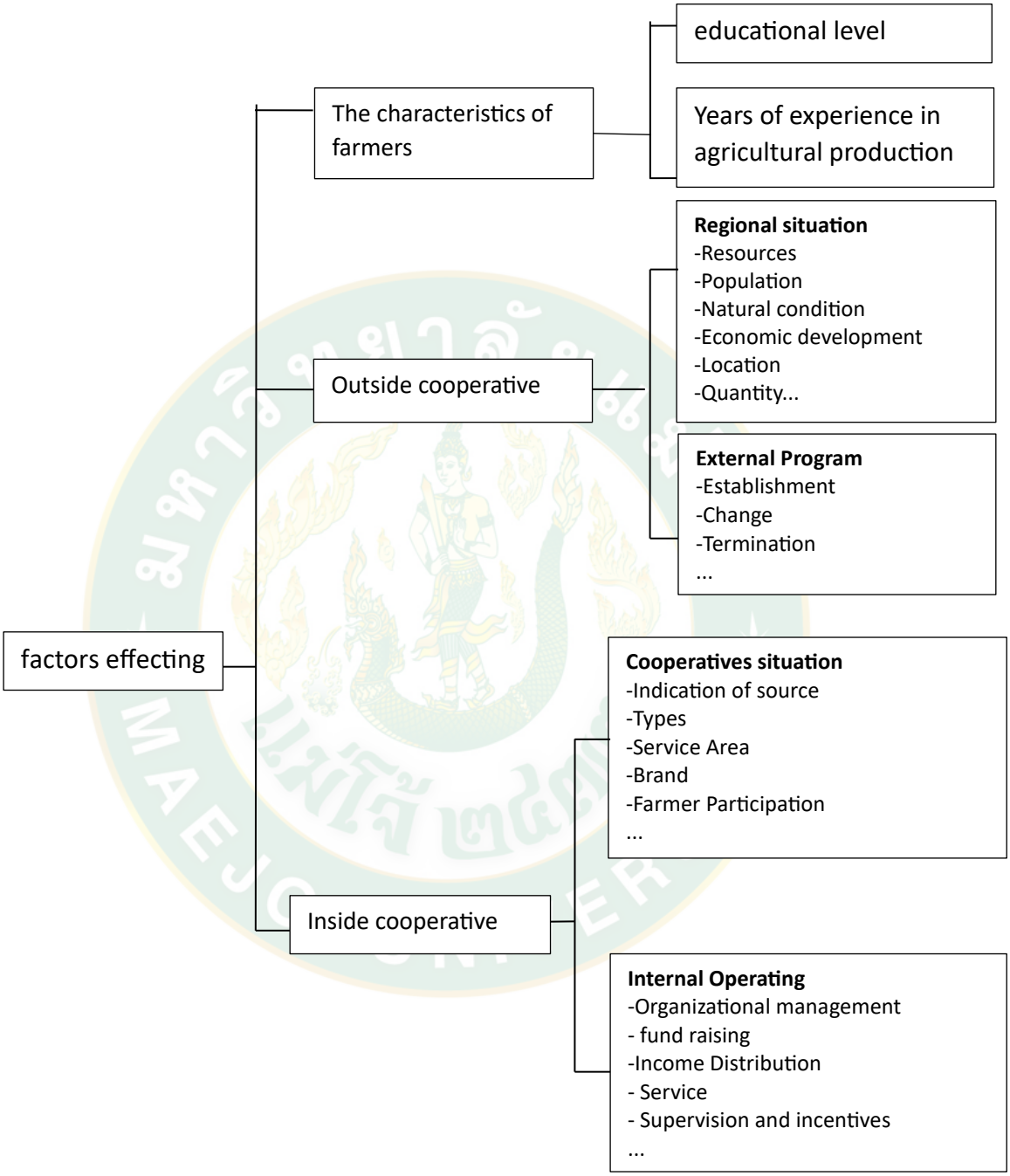
Objective 1 Figure of cooperation structure

Objective 2: To study the level of farmer professional cooperatives competency competency.



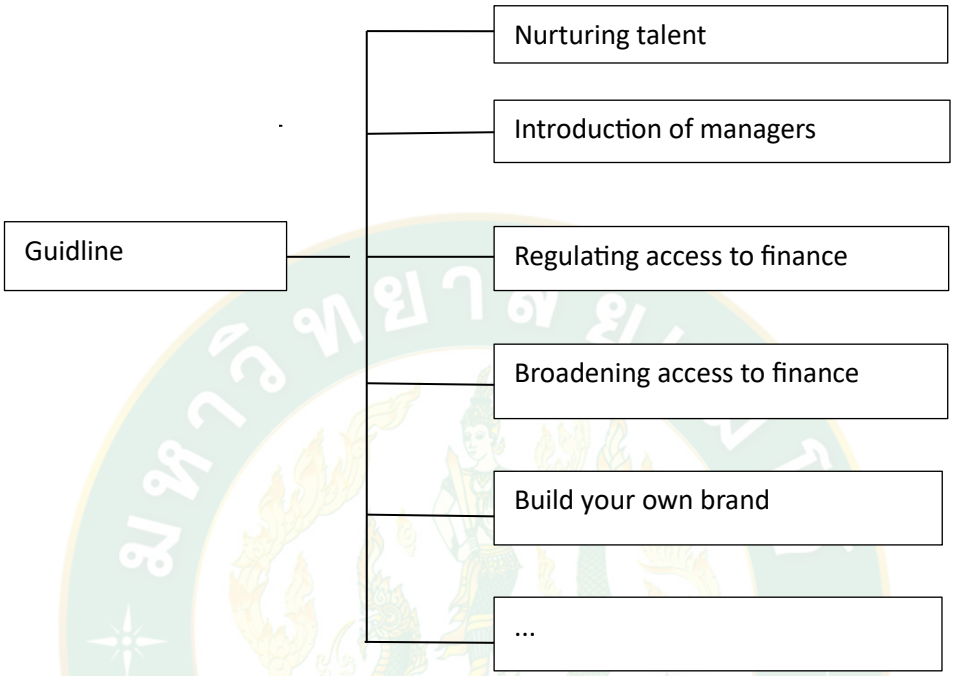
Objective 2 Figure of organizational cooperation structure

Objective 3 To study the factors effecting farmer professional cooperatives competency.



Objective 3 Figure of factors

Objective 4: To formulate the guideline to improve farmer professional cooperatives competency



Objective 4 Figure of guidline

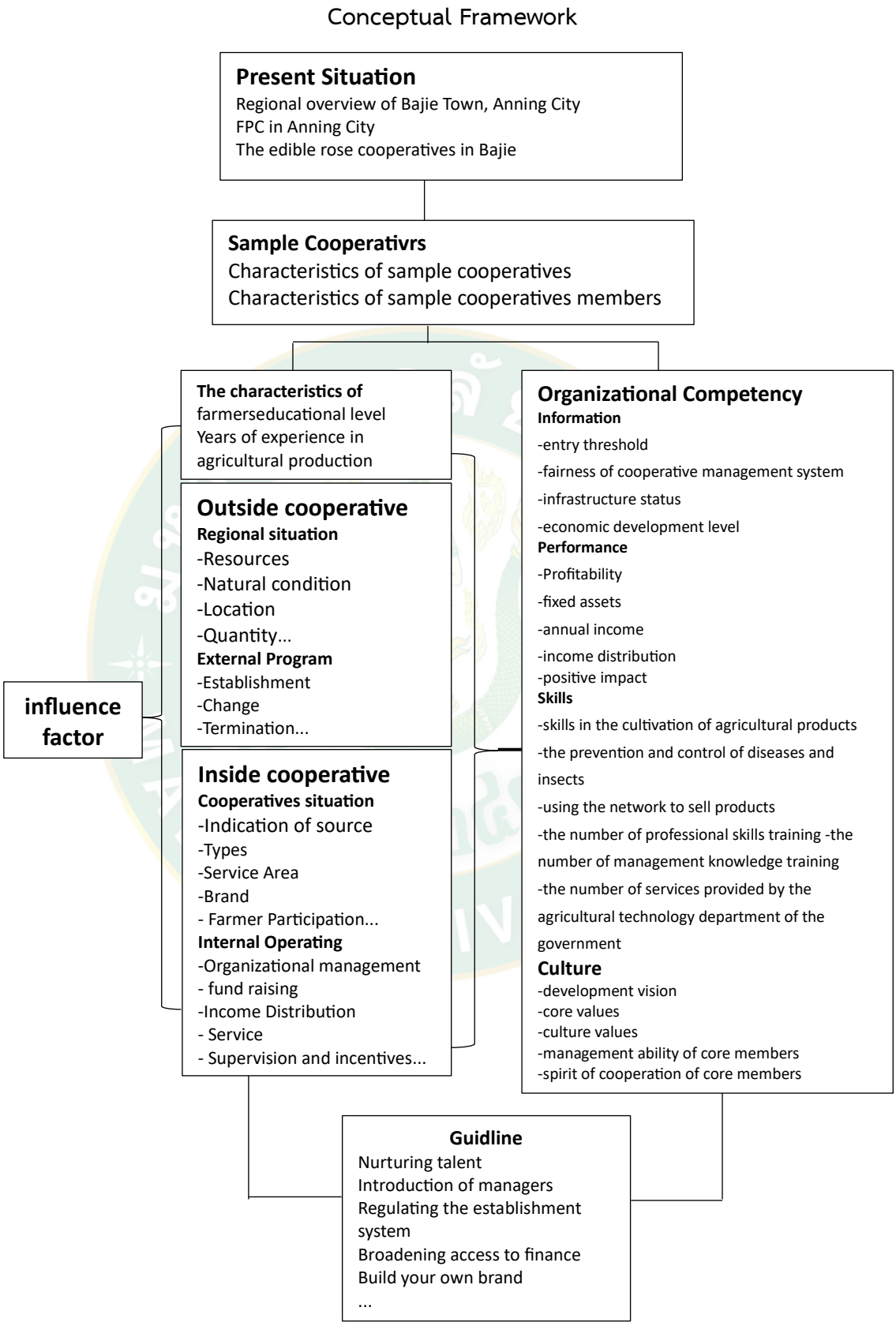


Figure 6 Conceptual Framework

CHAPTER 3

RESEARCH METHODOLOGY

Research Method

This study adopts a combination of qualitative analysis and quantitative analysis.

Qualitative analysis usually refers to the research of describing or judging the attributes and characteristics of things. The qualitative analysis methods adopted in this study mainly include literature research.

Literature Research Method

It collected government policy documents and website announcements on the development of farmer professional cooperatives. It collects and collates secondary materials such as research reports and theses on farmer professional cooperatives and other research topics. The analysis was based on the research results.

Quantitative analysis usually refers to the quantitative research on the attributes and characteristics of things by means of numerical calculation. The quantitative analysis methods adopted in this research mainly include interview investigation, case investigation and empirical analysis.

Interview Survey Method

Through the design of the interview outline, on the basis of reviewing the basic information of the cooperatives in Bajie town in advance and having a certain understanding of the basic situation of the cooperatives in Bajie town, we conducted face-to-face communication interview with each of the three categories of people, namely members of the cooperatives, the main person in charge and the ordinary villagers who are not members of the cooperatives. Through the interviews, we collected information on the interviewees' personal views, attitudes, ideas, feelings,

experience and knowledge about the operation of the work within the co-operatives, which helped us to further understand the basic situation of the co-operatives and their own operation, and was more conducive to the smooth implementation of the research work.

Case Study Method

The case study method is usually based on an in-depth study of an individual specific case, where data is systematically collected and analysed from one or more cases to explore the characteristics, causes and results of that case, so that key points and patterns in the case can be extracted and used to extrapolate and prove more general theories, laws or typical empirical methods.

The survey and analysis of farmer professional cooperatives in Bajie Township, Anning, was used to obtain first-hand research information about the development of the cooperatives concerned and to provide typical cases for this study. The Gaoqiao Planting Cooperative and the Hongrun Edible Rose Cooperative, which have different strengths and characteristics, were selected.

Empirical Analysis Method

This paper uses factor analysis to quantitatively analyse and evaluate the competency of farmer professional cooperatives by analysing the sample data obtained, reviewing relevant literature, reducing the bias arising from subjectivity in the research process, simplifying the research process, clarifying the research hierarchy, making the research findings persuasive, and finally arriving at the factors affecting the competency of farmer professional cooperatives and proposing corresponding countermeasures for these factors.

Questionnaires

In this study, LuBiao street was chosen as the sampling site for the pretest sampling. LuBiao street is connected to Bajie street and its geographical location, demographic and industrial structure are very similar, therefore, it is reasonable to choose Lu Arm Town as the pretest site. The results of the pretest proved that the

designed variables had high reliability and validity. Therefore, a random sample of 152 members from 26 co-operative societies was conducted in Bajie Town.

Data were collected using an interview form consisting of a structured questionnaire and an unstructured questionnaire as the primary research material to determine the current basic profile and organizational competency levels of the farmer specialised cooperatives in Bajie Town. Descriptive statistics were used to describe the data obtained and regression analysis was carried out using social science statistical methods in order to identify the predictor variables affecting the level of organizational competency of the farmer specialised cooperatives interviewed.

To ensure the validity of the content, the research questionnaire was made available to experts in the relevant fields for study. The experts were asked to provide comments and suggestions on the relevance, accuracy and appropriateness of the questionnaire. The researchers provided their own views and suggestions for changes, on the basis of which the questionnaire used for the study was modified and improved, and pre-tested, but not as part of the sample research.

The researchers applied the revised questionnaire to 19 members of four cooperatives in the Lu Arm Town with the test. These farmers were not part of the sampling group and the reliability and validity of the returned questionnaires met the requirements, which means that in each case all questions and items were worth retaining, indicating that the internal consistency of the questions and items in the scale was good and that the multiple choice scales were and measured, therefore, the researchers considered and retained all items of the Likert scale.

The final data was collected within the 26 cooperatives selected in Bajie Town. To obtain the data for the study, the researcher hired seven enumerators from Yunnan Agricultural University, who were trained in how to conduct practical interviews and administer questionnaires to the members of the farmer cooperatives and were assigned to the different farmer cooperatives.

The data obtained was analysed by using descriptive statistics to describe the variables in the study according to the objectives of the study. Multiple regression analysis was used to identify the predictor variables (independent variables) associated with organizational competencies.

The study also conducted group discussions to identify the current state of organizational competency, problems and factors affecting the level of organizational competency in the Bajie town Farmer Cooperative.

To measure the competency level of cooperatives, firstly, the entropy method is used to calculate the basic information, cooperative performance, cooperative skills and cooperative culture of 152 members and the weight of each index. Then, the standardized value and weight of each index are used to calculate the competency level of each member. Since the respondents in the early stage were mainly concentrated in 26 specialized farmer cooperatives, and considering that it is difficult to directly measure the competency of each cooperative, the mean value of each member's competency level calculated above is adopted to measure the competency level of each cooperative, and the competency level of these 26 specialized farmer cooperatives is ranked. However, due to the limitations of sample size and other factors, it is difficult to ensure that the number of samples surveyed by each farmer specialized cooperative is completely consistent. However, in order to ensure the reliability and scientificity of the research to the maximum extent, about 10 people are interviewed by the government. At the level of cooperatives, each cooperative should interview at least one president, one to two core members and one to two ordinary members.

Based on interviews, this study used a questionnaire to investigate the factors affecting the competence of farmer professional cooperatives, which consisted of three parts. The first part is a survey of the basic information of the respondents. The second part is the attitude of cooperative members towards the external environment, internal environment and competency of the cooperative. The internal and external environment mainly includes geographical location, operation mechanism, general situation and internal management; the competency mainly includes information, performance, skills and culture. The third part is the interviews

with members of the co-operative, mainly to understand their attitudes towards the current situation and future development opportunities of the co-operative.

This study was conducted on the example of a farmer cooperative of edible roses in Bajie Town, Anning City. The purpose of the study will be explained as follows.

Objective 1: To investigate the basic information of the members of the Edible Rose Farmer Cooperative in Bajie Street, Anning City.

This section includes the data required to answer Aim 1 and it was collected through structured interviews with respondents.

Table 1 Questionnaire and indicators of basic information of community members

Variables	Indicators
Educational and cultural level	Your level of education
Years of agricultural production	How long have you been involved in farming

Objective 2: To analyse the competency level of the edible rose farmer cooperative in Bajie Street, Anning City.

This section measureed and analysed the level of competence of a co-operative by evaluating the four dimensions of basic information, performance, skills and culture of the co-operative.

Table 2 Cooperative Competence Questionnaire and Indicators

Variables	Indicators
Co-operative information	I think there is a low barrier to joining a co-op
	I believe that cooperatives regularly disclose their finances
	I think the co-op has a fair management system
	I think the local infrastructure is good
	The government encourages and supports the development of
	I think the level of local economic development is good
Cooperative Performance	The cooperative's operating income is increasing
	I think the profitability of the cooperative is more than
	The number of machines and equipment used by the
	My membership of the cooperative has led to an increase in
	The cost of production of agricultural products has dropped
	I am satisfied with the current way in which the income of the
	I think the cooperative provides income security and increases
	I believe that cooperatives have a positive impact on local
Co-operative skills	I have mastered the art of growing produce
	I have mastered the techniques of pest and disease control
	I will use the internet for product sales
	The number of times the cooperative called its members for
	Number of times the cooperative called on its members for
	I am satisfied with the services provided by the government's
Cooperative culture	I understand the development process of cooperatives
	I understand the cooperative's goals and approach to business
	I understand the vision of the Co-op
	I understand the core values of the Co-op
	I think the cultural values of the co-op are important
	I believe that the most important explicit competency of the
	I believe that the most important implicit competency of the

Objective 3: To analyses the factors affecting the competence of farmer cooperatives.

In this study, the level of co-operative competence is taken as the explanatory variable Y, the education level of individual members, the length of time that members have been engaged in agricultural production, the reasonable distribution of income to members by the co-operative, the standard internal management of the co-operative, the integrity of the co-operative's organizational structure, the fact that all co-operatives can raise funds in various ways, the fact that all co-operatives have their own trademarks, the rapid economic development of your town, the rich natural resources of your town, the proximity of your town to Kunming, and the number of co-operatives in your town as the explanatory variable X. , the proximity of your town to Kunming city, and the number of cooperatives in your town as explanatory variables X.

According to existing relevant studies and theories, the competencies of farmer professional cooperatives are demonstrated as follows.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_{n-1} X_{n-1} + \varepsilon$$

Y represents the competencies of the cooperative, X represents the influencing factors thatβ_0 ,β_1 , .β_{n-1} are the regression parameters to be estimated, and$\boldsymbol{\varepsilon}$ is the random error term. The factors that influence the competence of a cooperative include: individual member factors, internal factors of the cooperative and external factors of the cooperative.

Objective 4: To analyses guidelines for improving the competence of farmer cooperatives.

This section adopts a qualitative research approach. Based on a questionnaire survey and in-depth interviews conducted with cooperative members and leaders to identify the problems of cooperatives and propose corresponding countermeasures.

Outline of in-depth interviews with co-operative members:

Mainly interviewed 12 people at the government level. At the cooperative level, there are 26 presidents, 30 managers and 35 members.

1. Do you think the co-operative is doing well? And make suggestions based on the actual situation of the co-operative.

2. How has the development of the cooperative in recent years changed you personally or your family?

3. What do you think you are more satisfied with about the Co-op?

4. What policies would you like the government to introduce for the development of cooperatives?

5. What do you feel most strongly about the cultural value of cooperatives?

Outline of an in-depth interview with the head of a co-operative:

1. What is the registered capital of the cooperative? What is the membership fee for a cooperative? What are the rules for joining and withdrawing from a cooperative?

2. What is the total number of core staff currently employed by the cooperative? What is the total number of ordinary members in the cooperative? What is the number of farming households driven by the cooperative?

3. Does the cooperative have complete and detailed records of member product transactions? Are the financial and operational conditions regularly disclosed to all members? Are complete records of farmer production and product (service) transactions established?

4. What is the area planted by the cooperative? What is the average annual production of the cooperative's products? What is the average income per acre of the cooperative's land?

5. What is the turnover of the cooperative in a year? How much profit does the cooperative make in a year? How is the cooperative's income distributed?

6. What are the regulations, risk prevention and control mechanisms, supervision mechanisms and incentives for cooperatives?

7. What are the constraints that affect the development of cooperatives?

Data Analysis

According to the Bajie in An Ning City, which includes 21 administrative villages, including Bajie, Fengyi, Yaopo, Chaoyang, Erjie, Moshoying, Caesugi, Shanchuoying, Mingfeng, Lianying, Daying, Zhongsho, Seventh Street, Wenshui, Tiechang, Wuliaba, Yilujie, Wuyue, Longdong, Zhaoba and Maonand. This paper selects samples based on the basic situation of farmer professional cooperatives and the number of farmer households, and conducts household interviews or questionnaires on farmer professional cooperatives and members, with a planned distribution of 80 copies. The main target of the survey on the overall situation of the cooperative is the management of the cooperative, while the main target of the survey on the basic situation of the members is a head of the household or the dominant family member who knows the basic situation of the household and is able to make decisions on behalf of the whole household on agricultural production and management.

Table 3 Announcement Plan for the Eight Street Town of Anning City

Name	Sample size (copies)	Percentage (%)	Total
Professional farmer cooperatives	26	50.9	51

Tools and Techniques for Research

In constructing an evaluation model for model societies, most scholars have used the following three analytical methods: entropy, factor analysis and regression analysis, in addition to hierarchical analysis and data envelopment methods. The hierarchical analysis method has to be scored by experts and is somewhat subjective. The data envelopment method is relatively more complex, and the requirements for data and indicators are more stringent. Therefore, this paper

chooses the entropy method and regression analysis method to quantitatively evaluate competency of the FPCs and analyse the influencing factors respectively, avoiding the problem of bias in the research results due to the subjectivity of the research process, making the research index level clearer, the research process more simplified, and the research conclusions more persuasive and objective.

This study used SPSS.26 analysis software to firstly conduct a reliability analysis and validity analysis on the survey data from the questionnaire; then, the correlation analysis between the selected dependent variables and the independent variables was conducted to check the correlation between the variables and to determine whether the variables were suitable for regression analysis; finally, based on the results of the correlation analysis, Stata.17 measurement software was used to introduce the combined scores of the four dimensions as dependent variables into the multiple linear regression analysis to analyse their influencing factors.

Entropy Method

The commonly used methods for weight calculation include hierarchical analysis (AHP), Delphi, etc. However, such analysis methods are prone to subjective bias due to experts' personal judgment, so this paper chooses the more objective entropy weighting method to assign weights, which can ensure the accuracy and scientificity of the assignment to a certain extent. The entropy method is based on the information entropy characteristics of the observed data set, to measure the dispersion of the selected indicators, and then based on the dispersion to assign an objective value to the indicators, its calculation steps are as follows.

(1) The selected data were standardised for positive and negative indicators by means of equations (1) and (2) respectively, the standardisation process being:

For positive indicators

$$Z_{ij} = \frac{X_{ij} - \min(X_{1j},\cdots,X_{nj})}{\max(X_{1j},\cdots,X_{nj}) - \min(X_{1j},\cdots,X_{nj})} \quad (1)$$

For negative indicators

$$Z_{ij} = \frac{\max(X_{1j},\cdots,X_{nj}) - X_{ij}}{\max(X_{1j},\cdots,X_{nj}) - \min(X_{1j},\cdots,X_{nj})} \quad (2)$$

where Z_{ij} is the value of the jth indicator referring to the ith sample after standardization, the$i = 1,2,3,\cdots,n; j = 1,2,3,\cdots m$.

(2) For the standardisedZ_{ij} weighting in the indicator wasP_{ij} To measure.

$$P_{ij} = \frac{Z_{ij}}{\sum_{j=1}^{n} Z_{ij}} (i = 1,2,3,\cdots,n; j = 1,2,3,\cdots m) \quad (3)$$

(3) Calculate the information entropy of each indicator.

$$e_j = -\frac{1}{Ln(n)} * \sum_{i=1}^{n} p_{ij} * Ln(p_{ij}) \quad (4)$$

(4) Calculate the coefficient of variation for each indicator.

$$H_j = 1 - e_j \quad (5)$$

(5) Calculate the weights of each indicator.

$$U_j = H_j / \sum_{i=1}^{m} H_j \quad (6)$$

(6) Calculate the composite score.

$$Score_i = \sum_{j=1}^{n} U_j * Z_{ij} \quad (7)$$

Multiple Linear Regression

In measurement data processing, those variables that have a deterministic relationship with each other are called functionally correlated; while the other kind is that there is no deterministic functional relationship between the variables, but rather a so-called correlation, which is called statistical correlation, and the functional model established by the correlation between the variables is called a regression model [1] To study the factors influencing the organizational competence of cooperatives, a multiple linear regression model is established in this paper. Let X1, X2, ..., Xn be n independent variables and they are correlated with a dependent variable Y, then a linear regression model can be established as

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_{n-1} X_{n-1} + \varepsilon \quad (7)$$

of whichβ_0 ,β_1 , .β_{n-1} are the regression parameters to be estimated, and $\boldsymbol{\varepsilon}$ is the random error term.

Design Principles

Research on the evaluation of the performance of model societies is based on a scientific and reasonable system of evaluation indicators, and therefore three basic principles should generally be followed when establishing the performance evaluation system of model societies.

The principle of Scientific. The establishment of the indicator system should fully reflect the connotation of the performance evaluation of the model society, and understand and grasp the main content of its performance evaluation from a scientific perspective. The requirements of this principle are: the data sources should be accurate, the analysis methods should be scientific, and the specific indicators should reflect the overall situation of the model society's performance.

Systematic principle. The system of evaluation indicators must be able to reflect the essence of the model society's performance in a comprehensive and systematic way, taking into account the systematicity and linkage between indicators. Therefore, it is not enough to use only one or two indicators to evaluate and analyse them. It is necessary to analyse and consider them from multiple perspectives and design different evaluation indicators from different angles, so as to evaluate and analyse the competitiveness in a comprehensive and systematic way.

The principle of feasibility. The selection of evaluation indicators should not only consider comprehensiveness and systematicity, but also the feasibility of specific operations, i.e. the design of the indicator system should be combined with the characteristics of specific evaluation objects. Combining the characteristics of the provincial-level demonstration societies of farmer professional cooperatives in Yunnan Province, the data obtained were used to obtain the various indicators available from multiple perspectives to ensure the authenticity of the results.

Reliability and validity analysis of survey data

In the questionnaire, Likert scale questions were used to investigate the evaluation of FPC members on basic information, FPC performance, FPC skills and FPC culture. Therefore, reliability test of survey data was needed to determine whether further analysis could be carried out.

It can be seen from Table 4 that the Cronbachαcoefficient of the cooperative basic information scale, performance scale, skill scale and culture scale were 0.839, 0.897, 0.781 and 0.922, respectively, and the Cronbachαcoefficient value of the four scales is higher than 0.9, which indicated that the reliabilities were high and further analysis could be continued.

Table 4 Scale Cronbach reliability analysis

Name	Cronbach α
Co-operative information	0.839
Co-operative performance	0.897
Co-operative skills	0.781
Co-operative culture	0.922
Total	**0.949**

In the questionnaire, Likert-type scale was used to investigate the FPC members' evaluation of FPC basic information, FPC performance, FPC skills and FPC culture (1 score for strongly disapproving, 2 score for moderately disapproving, 3 score for general, 4 score for moderately approving and 5 score for strongly approving). Therefore, validity analysis of survey data was needed to determine if the next step proceed.

It could be seen from Table 32 that the KMO values of the four scales (FPC basic information, FPC performance, FPC skills and FPC culture) were 0.820, 0.879, 0.704 and 0.884 respectively, which were all greater than 0.7. The result indicated that the scales had good validity. According to Bartlett spherical test, the P values of the four scales of FPC basic information, FPC performance, FPC skills and FPC culture were all 0, which were all less than 0.05, so variables were correlated.

Table 5 Scale validity analysis

Name	KMO	Bartlett's Test of Sphericity		
		Approx.Chi-Square	df	Sig.
FPC information	0.820	342.313	15	0.000
FPC performance	0.879	646.636	28	0.000
FPC skills	0.704	455.635	15	0.000
FPC culture	0.884	780.283	21	0.000

Table 6 The level that divided by the means score

Mean Scores	Criteria
Score 1.00-1.80	Very low level (VL)
Score 1.81-2.60	Low level (L)
Score 2.61-3.40	Moderate level (M)
Score 3.41-4.20	High level (H)
Score 4.21-5.00	Very high level (VH)

CHAPTER 4
RESULTS AND DISCUSSION

The results of this study, especially the level evaluation of organizational competence (OC) for Farmer Professional Cooperatives (FPC) at Bajie Town and factors affecting OC, were reported in this chapter. The results were presented methodologically in accordance with the objectives of this study. The characteristics and current situation of these FPCs and their members were preliminarily investigated. Then the level of OC for these FPCs was determined. Multiple regression analysis was used to identify factors related to OC. Based on the interviews and discussions with the interviewees, an appropriate development strategy was formulated for the improvement of the level of OC for FPCs at Bajie Town, with a view to enhancing the level of OC.

Through the improvement of cooperative competency, we can realize the benign development of the FPCs, which will ultimately bring about an increase in income.

Regional Overview of the Bajie Town area in Anning

Status of Natural Resources

Bajie Town is located in the south of Anning City, adjacent to Erjie Town in Jinning County in the east, adjacent to Shuanghe Township and Xiyang Township in Jinning County in the south, adjacent to Longquan Town in Yimen County in the west, and adjacent to Xianjie Town in Anning City the north, 35 kilometers away from the downtown of Anning City and 67 kilometers away from the downtown of Kunming City. Bajie Town has a total area of 340.29 km². It is located in the central subtropical low latitude and high altitude. The weather at this town is like spring all year round, warm in winter and cool in summer, with an average annual temperature of 14.9° C. Its annual average precipitation is about 1000 mm, rainfall is mainly concentrated in May ~ September, and the annual evaporation is about 1856 mm.

The largest river in Bajie Town is the Bajie River, which flows through eight administrative villages, with a basin area of 176.9 km2 and an average annual flow of 30.2 m3/ second.It is rich in iron, tin and phosphate ore. Its forests are dominated by conifers, such as Yunnan pine, Yunnan cypress, oil pine, Huashan pine, etc. It has a variety of flowers, among which roses form the famous tourist attraction Rose Valley. It has 117.81 hectares of arable land and 280.29 hectares of forest land (Work Report at Bajie Town, Anning City, 2022).

Socio-economic Status

Bajie Town has the largest agricultural population in Anning City, with 21 villagers' committees and 1 community residents' committee, with a total population of 42,000, of which 37,200 are agricultural, accounting for about 89%. It has a total of 26 ethnic groups, including Han, Yi, Miao, Lisu and Bai, all of which live in a staggered and mixed manner, and the culture of ethnic minorities is rich and colorful. (Work Report at Bajie Town, Anning City, 2022).

The primary industry is mainly aquaculture and planting. The aquaculture industry is mainly rural free-range farming, with 80% of free-range households, while the number of large-scale aquaculture households is small. Some farmers have adopted the "company + farmer" breeding model. In terms of plantation, there are many types of crops involved, such as edible roses, vegetables and fruits on a larger scale. Edible roses are planted by each village committee, mainly in the southern area of Bajie Town. There are two main ways to grow edible roses, one is to plant them in a concentrated and continuous area, and the other is to set them with crops such as corn and vegetables. As far as secondary production, because Bajie Town is an important water source for Anning City, the development of industry at Bajie Town is strictly controlled for ensuring the safety of water sources. As a result, Bajie Town only has factories for rough processing of vegetables, fruits and flowers. Many vegetables planted at Bajie Town are exported to domestic and foreign markets, including Beijing, Shanghai and other regions with high economic development levels in China, and East Asia, Southeast Asia, Australia and Europe abroad. The tertiary industry is mainly catering and accommodation, especially food management and

rural tourism, relying on the location advantage of near Kunming City. Because of the vast area of rose and pear cultivation, in recent years, activities such as the Rose Culture Festival and the 'Hongli' Pear Cultural Festival were held. (Work Report at Bajie Town, Anning City, 2022).

Farmer Professional Cooperatives in Anning City

Number of FPCs and Time of Establishment of FPCs

In March 2022, there were 217 FPCs in Anning City, in which 180 FPCs in normal operation, 52 FPCs established in 2007-2012, 122 FPCs established in 2013-2018, and 43 FPCs established in 2019-2022 (shown in figure 7).

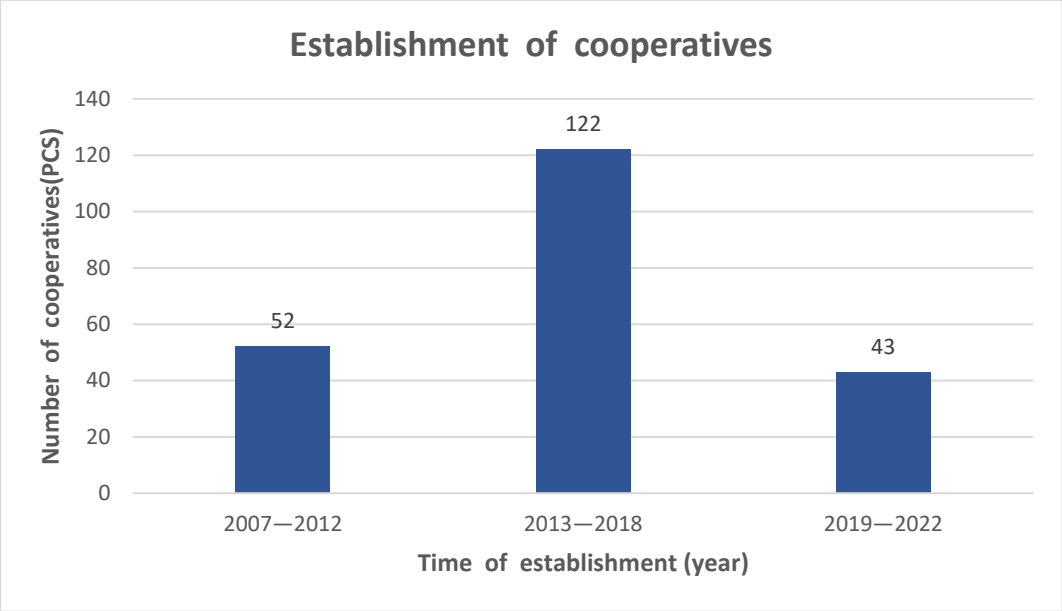


Figure 7 Establishment of farmer professional cooperatives in AnNing City

Type and Main Business

There were 133 FPCs for planting, processing and marketing of fruits, flowers and medicinal plants. There were 35 FPCs for breeding, the main business of which were breeding and marketing of livestock, poultry, and aquaculture and sales. There were 17 FPCs for planting and breeding, the main business of which were the planting, processing and sales of fruits and flowers.

There were 15 fruit and vegetable FPCs whose main business involves the cultivation and processing of fruit and vegetables, the breeding of poultry and livestock, the processing and sale of agricultural and sideline products, domestic trade, material supply and marketing, etc. There were 11 tourism FPCs whose main businesses were investment and development of rural tourism projects, tourism, accommodation, wilderness quality development services, as well as planting and breeding. There were five agricultural machinery FPCs whose main business was the operation and sale of agricultural machinery. There was one agricultural water FPC whose main business was water conservancy project construction operation, water use service, water fee collection service and field road maintenance in the project area with the exception of the agricultural machinery FPC, the tourism FPC s and the agricultural water FPC, most of FPCs had common business. (shown in figure 8).

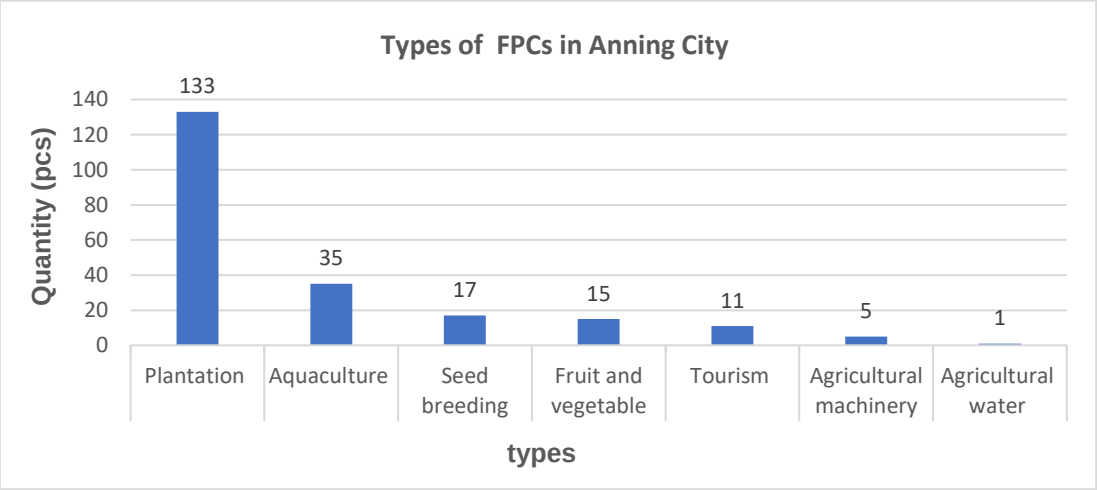


Figure 8 Types of professional farmer cooperatives in Anning City

Distribution of FPCs

The distribution of FPCs in Anning City was uneven, and the number in Bajie Town was the largest, accounting for 60% of the total FPCs in Anning City, as shown in figure 9.

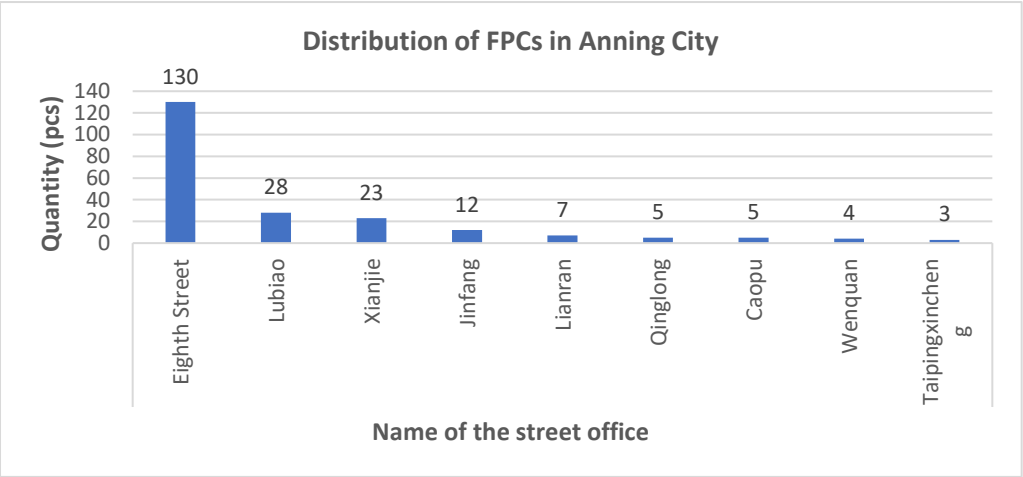


Figure 9 Distribution of FPC in Anning

Basic Situation of Edible Rose FPCs at Bajie Town

Number of Edible Rose FPCs and Time of Establishment of These FPCs

In March 2022, there were 130 FPCs at Bajie Town, accounting for about 60% of the number in Anning City, in which 119 in normal operation. Twenty-five FPCs were founded in 2007- 2012, 75 FPCs were founded in 2013-2018, and 30 FPCs were founded after 2019. Obviously, the number of FPCs established in the six years from 2013 to 2018 was relatively large, which was directly related to the leading role played by Supply and Marketing Cooperative at Bajie Town, which laid the foundation for the establishment of various FPCs at Bajie Town. In 2018, HR Edible Rose Farmer Professional Cooperative won the title of "Farmer Professional Cooperative Model Society", which stimulated the production enthusiasm of members, enhanced the willingness of joining FPC of villagers, and promoted the expansion of the scale of FPCs.

Fifty-one rose FPCs were established at Bajie Town, accounting for about 39% of FPCs at this town, 15 of which were established before 2016, and 36 of which were established after 2016. CY Edible Rose Professional Cooperative Union, established in September 2013, had 10 members, and its registered capital was 600,000 yuan. JSTH Rose Planting Professional Cooperative Union, established in June 2020, had 6 member clubs with a registered capital of 1,000,000 yuan. ZY Agricultural

Planting Development Professional Cooperative was established in August 2014 with 9 members. Forty-six rose FPCs were in operation in March 2022, and each of 17 FPCs had a registered capital of 1,000,000 yuan or more.

Type and Main Business of These FPCs

There were 92 FPCs, and their main business were the planting, processing and sales of flowers, fruits and vegetables and medicinal plants. Among these FPCs, there were 8 FPCs for breeding, which mainly involved in breeding and sales of livestock, poultry and aquaculture. There were 9 FPCs for planting and breeding, whose main business was the planting, processing and sales of fruits, vegetables and flowers. Fifteen FPCs for fruit and vegetable mainly did business on the cultivation and sales of fruits and vegetables, and the retail of fertilizers. Five FPCs whose main business was agricultural machinery operation and sales were registered as FPC for agricultural machinery. There was one FPC for agricultural water, and its main business was water conservancy project construction and operation, providing water services, collecting water fee services, and maintaining field roads in the field. Out of the 21 village committees at Bajie Town, there were 10 village committees had FPCs involving the extension of agricultural technology and information exchange. These FPCs promoted the promotion of agricultural production technology and the exchange of agricultural production factors and market information in the area near these FPCs, which was conducive to promoting the regional economic development of Bajie Town. Information of FPCs in Anning City was shown in table 7.

Table 7 Information of FPCs in Anning City

Type	Plantation	Aquaculture	Seed breeding	Fruit and vegetable	Tourism	Agricultural machinery
Quantity (Pcs)	92	8	9	15	5	1
Main business	cultivation, processing and sales of fruits, flowers, vegetables and Chinese herbal medicines	Livestock, poultry, aquaculture and sales	Cultivation, processing and sale of fruits and flowers, as well as livestock, poultry, aquaculture and sales	Cultivation and sale of fruits, vegetables, seedlings, flowers and crops	Agricultural machinery operations, agricultural machinery sales	Construction and operation of water conservancy projects for water conservancy projects

The main business of all rose FPCs was about edible roses, mainly including the planting, acquisition, processing, storage and sales of edible roses. Twenty FPCs operated exclusively in edible roses, and their main business was the cultivation of edible roses and the processing and sale of related products. Besides edible roses, the main business of the 31 FPCs also involved the planting, processing and sales of flowers, fruits and vegetables, wild mushrooms, fertilizer retail, planting technology training, technical exchanges and information services. Some FPCs were also involved in the breeding and sales of poultry and livestock, and the packaging and sales of agricultural and sideline products.

Nine FPCs did business on the experimentation, demonstration and extension of new cultivars of edible roses, which innovated cultivars of edible roses. The main products produced by these FPCs were fresh roses, rose butter, rose brew, rose filling, rose tea, essential oils, and so on. The added value of these products was low because they were simply processed before entering the market.

The Number of Families and Farmers joining FPCs

FPCs had over 5000 members, drove 8,324 farmers, and had a registered capital of 104898000 yuan at Bajie Town. The number of farmer families driven by a FPC was from 5 to 1,000, and the number of members in a FPC varied from 5 to 271. The largest FPC had a registered capital of 8500000 yuan, while the smallest one had a registered capital of less than 10,000 yuan.

Rose FPCs had more than 2,490 farmer families, one FPC named as HR Edible Rose Cooperative had 208 farmer families, and each of 6 FPCs had only 5 farmer families. More than 4,591 farmers were driven by rose FPCs, accounting for 55% of farmers driven by FPCs at Bajie Town.

Distribution

All of the 21 village committees at Bajie Town had their own FPCs, and Bajie Village committee had most FPCs, as shown in Figure 10.

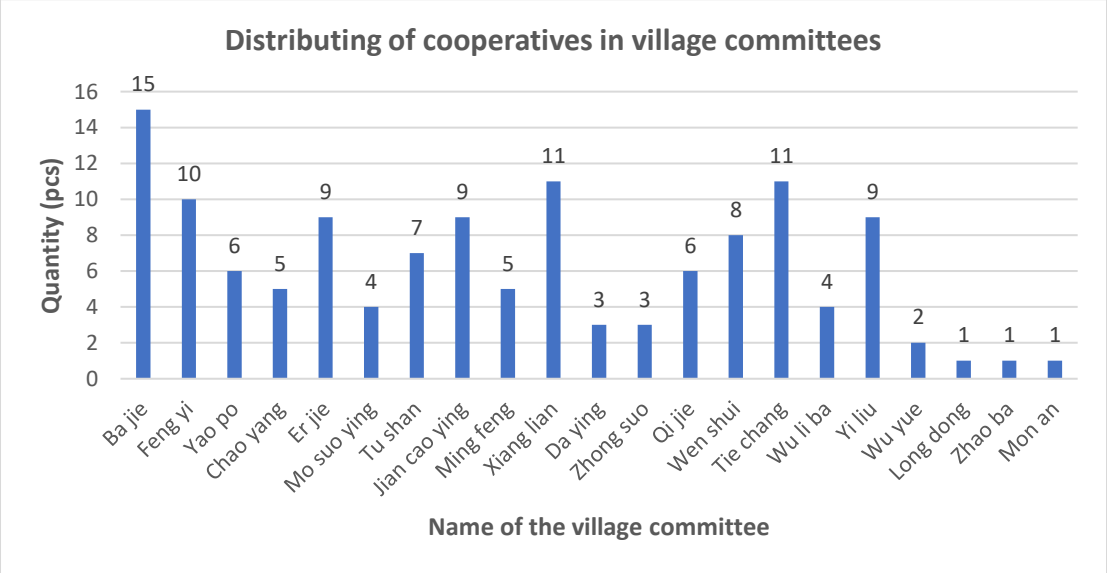


Figure 10 Distribution of cooperatives in village committees

The distribution of rose FPCs in each village committee was as follows: there were 4 in Bajie village committee, of which one was a joint society with 10 member societies; there was one FPC in each village council of Fengyi, Yaopo, Longdong and Zhongshao; there were two FPCs in each village council of Chaoyang and Wuyue; there were three FPCs in each village council of Baisu and Wuliaba; and there were four FPCs, five FPCs, seven FPCs, eight FPCs and nine FPCs in the village council of Wenshui, Qijie, Yilu, Lianyuan and Tiechang, respectively.

In 2020 and 2021, a questionnaire survey on 26 FPCs planting rose in 21 village committees in the town and members in those FPCs was conducted with the random sampling method. Based on the research, the following analysis is conducted on the data of 26 sample cooperatives and 152 sample cooperative members.

Objective 1: To Investigate the Present Situation of Farmer Professional Cooperatives in Bajie Town in Anning City

This part of the survey sample and data came from 26 rose FPCs and 152 members in rose FPCs at Bajie Town, Anning City. In-depth interviews were conducted with the heads of the sample FPCs, and In-depth interviews and questionnaires were both conducted with members in these FPCs using a random sampling method. The research included current situation of sample FPCs and their members. The samples were described in detail separately below.

Characteristics of Sample Cooperatives

It was found that the 26 sample FPCs produced and operated characteristically, which meant that these FPCs had their own characteristics in terms of basic conditions, production, distribution, training and members' meeting, labor, requirements, operating mechanisms and incentive mechanisms.

Basic information of the sample cooperatives

Among the 26 FPCs studied, 96.2% of them were registered with the Industrial and Commercial Bureau, and the registered capital of each of most FPCs varied from 500,000 to 2 million yuan (shown in Table 8). Among these 26 FPCs, 25 FPCs did not require their members paying initiation fees, and membership and withdrawal followed the free and voluntary principle, but they operated according to certain charter bylaws and regulations, such as according to age regulation and relevant contracts. The proportion of FPCs with 101-200 members was 42.3%, but the proportion of FPCs with less than 50 members was 34.6%, which showed that there was a clear size gap between FPCs. The majority of members were neighbouring farmers, but the proportion of FPCs with non-farmer members was 50%, indicating that FPCs with non-farmer members became popular, so it is important to focus on improving the institutional mechanism for FPCs with non-farmer members. The number of core members in most FPCs was 5-15, while the number of ordinary members in most FPCs was 50-200, and the number of farmer families driven was 100-500, which indicated that the scale of these FPCs was generally small and the development level of these FPCs was not high. So there might be constraints to the development of FPCs.

Table 8 Basic information about the cooperative samples

Category	Variables	Number of samples	Percentage
Is it registered with the business sector	Yes	25	96.2%
	No	1	3.8%
Registered capital of the cooperative	Under $500,000	3	11.5%
	500,000 - 1 million	13	50.0%
	1.01 - 2 million	7	26.9%
	2.01 - 3 million	2	7.7%
	Over $3 million	1	3.8%
Is there an entry fee?	Yes	1	3.8%
	No	25	96.2%
Number of current members	Less than 50 households	9	34.6%
	50-100 households	2	7.7%
	101-200 homes	11	42.3%
	201-300 households	2	7.7%
	Over 300 households	2	7.7%
Source of membership	Surrounding Farmers	25	96.2%
	Farmers supply and marketing societies (households)	1	3.8%
Number of core community members	Less than 5 people	7	26.9%
	5-15 people	17	65.4%
	16-60 people	1	3.8%
	Over 60 people	1	3.8%
Number of ordinary members	Up to 50 people	11	42.3%
	50-100 people	6	23.1%
	101-200 people	7	26.9%
	Over 200 people	3	11.5%
Number of farmers brought in	Less than 100 households	10	38.5%
	100-300 households	9	34.6%
	301-500 households	3	11.5%
	Over 500 households	4	15.4%
Proportion of members of the community who are not farmers	All farmers	13	50.0%
	There are non-farmers	13	50.0%

Production and distribution of sample FPCs

The main mode of operation of FPCs was integrative operation of produce, process and sale of edible roses (shown in Table 9). About 34.6% of FPCs were mainly engaged in the rough processing of agricultural products, while only 7.1% of FPCs were mainly engaged in technical services. This showed that most FPCs were still focused on the production, processing and sale of edible roses, and that their industrial chain was not sufficiently extended. That status quo should be changed, and FPCs should expand intensive processing business. These FPCs can also seek "shelter" from brand companies (such as Jiahua and Pan Xiangji) and become their rear markets, so as to achieve smooth marketing. The example was GQ Farmer Professional Cooperative at Bajie Town.

Table 9 The operating conditions of the sample cooperative

Category	Variables	Number of samples	Percentage
Business Method	Integrated production, processing and sales	15	57.7%
	Processing type	8	30.8%
	Transport, sales type	2	7.7%
	Service-oriented	1	3.8%
	Warehousing service type	3	11.5%
	Information technology-based	1	3.8%
Main Lines of Business	Rough processing of agricultural products	15	57.7%
	Technical Services	2	7.7%
	Agricultural products sales	9	34.6%

Main products of these FPCs were flowers, dried flowers, frozen flowers and rose food products. About 80.8% of FPCs had a unified indication of origin; some FPCs had even made their own brand; reaching a certain trading consensus, some FPCs also cooperated directly with famous companies such as Jiahua and Pan Xiangji as suppliers, so that they had a certain guarantee of sales. The cost of land lease was

high, and 69.2% of the FPCs invested less than 1 million or less to major projects. This result showed that FPCs had high investment costs in the early stages, while capital investment in major projects was low. Vehicles, plants and equipment were the most common fixed assets in all FPCs, and plants and equipment were essential for almost all FPCs. The planting area of each FPC was 200-1000 mu. The average annual production of products was 200-1000 tons. Most FPCs earned an average annual income of RMB 1,000-10,000 per mu. Annual turnover of most FPCs was RMB 1-5 million. Annual profit of 96.2% of FPCs was 2 million or less. These results showed that small and medium-sized FPCs for cultivation and operation helped farmers increasing production and income, and strengthened the rural collective economy of Bajie Town. About 69.2% of FPCs distributed income according to trading volume and shares, while a small number of FPCs did a membership distribution system. This result indicated that distribution by volume and distribution by shares were the most popular distribution methods then. Production, income and distribution of FPCs were listed in Table 10.

Table 10 The production situation of the sample cooperative

Category	Variables	Number of samples	Percentage
acreage for planting	Under 50 acres	3	11.5%
	50-100 acres	1	3.8%
	101-200 acres	1	3.8%
	201-500 acres	10	38.5%
	501-1000 acres	6	23.1%
	Over 1000 acres	5	19.2%
Average annual production	Up to 50 tonnes	6	23.1%
	50-100 tonnes	0	0%
	101-200 tonnes	2	7.7%
	201-500 tonnes	8	30.8%
	501-1000 tonnes	6	23.1%
	Over 1000 tonnes	4	15.4%
Average income per acre	Less than $1000	3	11.5%
	1000 - 5000	6	23.1%
	5001-10,000	10	38.5%
	10,000 or more	7	26.9%
Annual turnover	Under $100,000	6	23.1%
	100-1 million	2	7.7%
	101-500	12	46.2%
	5.01 - 10 million	3	11.5%
	10 million yuan or more	1	3.8%
Annual profit	Under $500,000	14	53.8%
	500,000 - 1 million	5	19.2%
	1.01 - 2 million	6	23.1%
	Over $2 million	1	3.8%
Income distribution methods	By Transaction Volume	11	42.3%
	By Unit	7	26.9%
	Allocation by member	1	3.8%
	Other	7	26.9%

Training and general meetings of sample FPCs

About 92.3% of members said they got trained by FPCs, and 76.9% of members were trained 2-5 times a year. The percentage of training sessions in which more than half of members took part was 88.5%. In addition, 80.8% of FPCs held their members' meetings 2-3 times a year, and the percentage of these meeting which more than half of members attended was 57.7%. These results showed that FPCs paid great attention to the training of their members, and the members also actively cooperate with their FPCs, both FPCs and members had great enthusiasm for the development of FPCs, which was very beneficial to the development of FPCs. Data were shown in Tables 11.

Table 11 Training status of sample cooperatives

Category	Variables	Number of samples	Percentage
Provide training to its members	Yes	24	92.3%
	No	2	7.7%
How many times a year do cooperatives train their members	Less than 2 times	5	19.2%
	2-5 times	20	76.9%
	More than 5 times	1	3.8%
Attendance of members at training for the cooperative	Less than 50 per cent	3	11.5%
	More than 50 per cent	23	88.5%
Number of general meetings held in the year	Less than 2 times	2	7.7%
	2-3 times	21	80.8%
	More than 3 times	3	11.5%
Number of attendees	Half of the attendees or less	11	42.3%
	More than half of the meeting was attended	15	57.7%

Labor and requirements of sample cooperatives

The main way through which FPCs got labor force was labor shareholding, FPC employees, and FPC members, so most of FPCs' labor force was from local farmers nearby. This not only solved the FPCs' difficulty in recruiting labor, but also increased the household income of farmers, which was a win-win result. The percentage of FPCs with 1-5 salespeople was 80.8%, which was in line with normal staffing levels for small and medium-sized FPCs in which too many salespeople and too few salespeople resulted in a mismatch between inputs and outputs. The percentage of members who were required to master uniform production techniques and quality standards was 92.3%, which indicated that most FPSs paid close attention to the technical and quality standards of their production operations. Data were shown in Tables 12.

Table 12 Labor and requirements of sample cooperatives

Category	Variables	Number of samples	Percentage
Number of full-time sales staff	Up to 2 persons	8	30.8%
	2-5 people	13	50.0%
	More than 5 people	5	19.2%
whether members are required to master uniform production techniques and quality standards	Yes	24	92.3%
	No	2	7.7%

Operational mechanism of the sample FPCs

Most of FPCs had complete and detailed records of their members' production and product (service) transactions, and regularly disclosed the financial and operational status of their own FPC to all members. This showed that most of FPCs conducted their daily management in an open and transparent manner, which was very helpful in motivating farmers to participate in the production and operation of FPCs. Data were shown in Table 13.

Table 13 Operational mechanism of the sample cooperative

Category	Variables	Number of samples	Percentage
Whether there is a complete and detailed record of transactions of the society's products	Yes	24	92.3%
	No	2	7.7%
The financial and operational status is regularly disclosed to all members of the society	Yes	22	84.6%
	No	4	15.4%
Complete records of farmer production and product (service) transactions are established	Yes	25	96.2%
	No	1	3.8%

84.6% of FPCs had related rules and regulations, such as sales system, management system and accounting system, which regulated the internal production and management of FPCs, standardized the daily production and operation of FPCs, improved production efficiency, promoted the development of FPCs and enhanced their competitiveness in the market. 65.4% of FPCs had appropriate risk prevention and control mechanisms, such as price protection, the chairman of the board of directors assuming the risk, common sharing rules, etc. Some FPCs also adopted the management mode of “farmer + co-operative household + company supporting rough processing workshop” or the management mode of “order farming” to achieve shared responsibility. However, 34.6% of FPCs said that they did not have a risk prevention and control mechanism which made some FPCs unprotected in terms of risk prevention and control, and also had their members without risk protection. Therefore, it is necessary to improve the risk prevention and control mechanism of FPCs to minimize the losses of FPCs and members. 73.1% of FPCs had a complete monitoring mechanism, such as financial monitoring, third-party monitoring and full-time staff monitoring. But the other 26.9% of FPCs did not have a complete

monitoring mechanism, and they should make great efforts to improve their monitoring mechanism to ensure that the risks in the production and operation of FPCs are effectively reduced, and that the integrity and safety of FPCs assets can be better safeguarded. Data were shown in Table 14.

Table 14 The mechanism of the sample cooperative

Category	Variables	Number of samples	Percentage
Availability of regulations	Yes	22	84.6%
	No	4	15.4%
Availability of risk prevention and control mechanisms	Yes	17	65.4%
	No	9	34.6%
Availability of monitoring mechanisms	Yes	19	73.1%
	No	7	26.9%

Incentives for sample cooperatives

There were various forms of existing incentives, such as dividends, rebates, innovation incentives, quality incentives and other incentives from famous companies Jiahua and Panxiangji. However, nine FPCs said that they did not have any incentives, then they should introduce or innovate appropriate incentives to motivate their members to produce. This was shown in Figure 11.

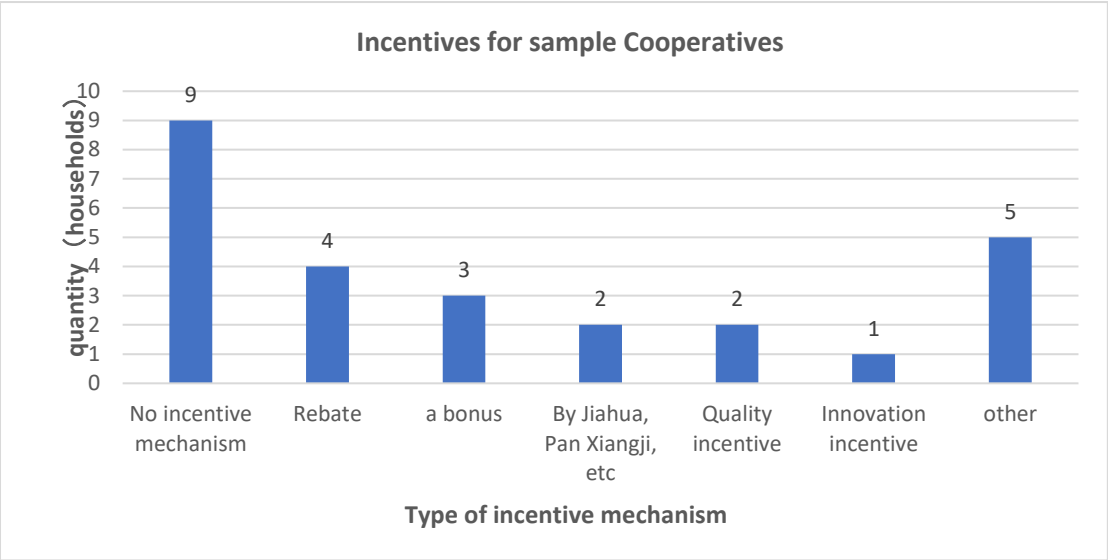


Figure 11 Incentives for cooperatives

Characteristics of Sample Cooperative Members

Through in-depth interviews and questionnaires with 152 FPC members, data on the basic information of the members, their family, the way they bought production materials, the way they sold their agricultural products, and the distance between their land and the market were obtained.

Basic information of sample cooperative members

The percentage of FPC members aged under 50 accounted for 57.9%, indicating that the membership of FPCs was still dominated by young adults. But the percentage of FPC member over 50 also amounted to 42.1%, that was that the number of senior members was also relatively large. Therefore, it is necessary to improve a variety of incentive mechanisms to encourage more young talents to return to their hometowns to participate in the construction of FPCs, and the construction of rural FPCs also depends on the strength of the youth team. As far as the gender ratio, 51% of members was male, and 49% for female, which indicated the rigour of the sample. As far as marital status, 140 members were married, accounting for 92.1%, indicating that most members were local farmers with a relatively stable production life and more say in the countryside. The percentage of members who were core members was 40.1% and the percentage of non-core members was 59.9%, which indicated that the opinions of non-core members were

as important as those of core members. The percentage of members with an education level of secondary school or below was 86.2%. And 78.9% of members were general farmers before becoming members of FPCs, while large producers and self-employed people only accounted for a small proportion, indicating that it is necessary for FPCs to encourage large producers and the highly educated to participate in FPCs. But it is not the main purpose of FPCS to encourage large producers and the highly educated, the most important thing for FPCs is to encourage ordinary farmers to enter the FPCs business, and FPCs should be good for ordinary farmers, and have farmers to share benefit from FPCs, so that farmers achieve common prosperity one by one. More than 90% of members had been engaged in agricultural production for more than five years, indicating that most farmers were willing to join the production and operation of FPCs and are more willing to accept new production methods. As shown in Table 15.

Table 15 Basic personal information of cooperative members

Category	Variables	Number of samples	Percentage
Age	Under 30 years old	9	5.9%
	30-50 years	79	52%
	51-70 years	61	40.1%
	70+ years	3	2%
Gender	Male	78	51%
	Female	74	49%
Marital status	Married	140	92.1%
	Single	10	6.6%
	Bereaved spouse	1	0.7%
	Divorce	1	0.7%
Core member	Yes	61	40.1%
	No	91	59.9%

Table 15 (Cont.)

Category	Variables	Number of samples	Percentage
Education level	Primary school and below	37	24.3%
	Secondary Schools	94	61.8%
	Vocational Schools	18	11.8%
	Undergraduate	3	2.0%
	Postgraduate and above	0	0
Occupation before becoming a member of the cooperative	General farmers	120	78.9%
	Large producers	11	7.2%
	Returning migrant workers	8	5.3%
	Corporate personnel	5	3.3%
	Self-employed	10	6.6%
	Township department staff	1	0.7%
	Other	2	1.3%
Length of time engaged in agricultural production (years)	1-5 years	14	9.2%
	6-10 years	24	15.8%
	11-15 years	21	13.8%
	16-20 years	29	19.1%
	More than 20 years	64	42.1%

Household profile of the members of the sample FPC

The percentage of member families with 3-5 people was 67.1%, and the percentage of member families with the highest level of education of secondary school, vocational school and bachelor was 95.4%. The percentage of member families three or fewer persons as the main worker was 77.6%. The percentage of member families with an average annual income of RMB 20,000-70,000 was 52.6%. The percentage of member families whose main source of household income from agricultural production was 91.4%. The percentage of member families with existing

arable land of 3 mu or more was 84.9%. These results showed that most of the farmers who participate in FPCs are ordinary farmers, and participating in FPCs was their expected way to increase family income. Data were shown in Table 16. Participating in cooperatives is.

Table 16 Basic household information of cooperative members

Category	Variables	Number of samples	Percentage
Number of family members	Up to 3 persons	16	10.5%
	3-5 people	102	67.1%
	More than 5 people	34	22.4%
Highest level of education of family members	Primary school and below	5	3.3%
	Secondary Schools	51	33.6%
	Vocational Schools	48	31.6%
	Undergraduate	46	30.3%
	Postgraduate and above	2	1.3%
Main household workforce	Up to 3 persons	66	43.4%
	3 people	52	34.2%
	4 persons	26	17.1%
	5 people	6	3.9%
	More than 5 people	2	1.3%
Average annual household income	Up to $20,000	31	20.4%
	20-70,000	80	52.6%
	Over $70,000	41	27.0%
Main source of household income	Agricultural production	139	91.4%
	Local workers	39	25.7%
	Outworking	9	5.9%
	Other	11	7.2%

Table 16 (Cont.)

Category	Variables	Number of samples	Percentage
Area of arable land	Less than 1 acre	8	5.3%
available to the family	2 acres	15	9.9%
	3 acres	30	19.7%
	4 acres	25	16.4%
	5 acres and above	74	48.7%

Channels of production materials

The percentage of member who bought production materials at the market was 82.9%, the percentage of members bought production materials at FPCs was 25%, 7.2% of members bought production materials with the help of the government, and only 6.6% of members bought production materials. These results showed that members mainly bought production materials from the market and FPCs nearby, and were less dependent on online purchases and government-assisted purchases. This was shown in Figure 12.

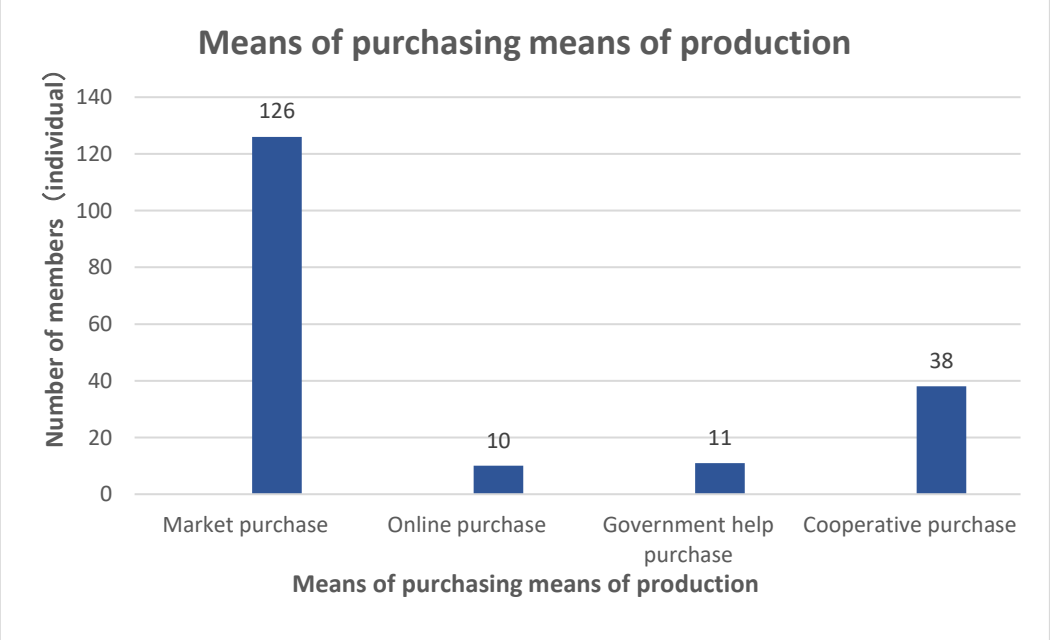


Figure 12 Ways in which community members purchase production materials

The way the sample FPC members sold their agricultural products

About 71.1% of members sold their farm products to FPCs, 38.8% of members sold their farm products at the markets, 13.8% of members did by order, 8.6% of members did on the internet, and only 0.7% of members sold their farm products to the government. This indicated that FPC members mainly sold farm produce to FPCs or at the market, and partially practiced order sales and internet sales, which indicated that the sales channels were diversified. This was shown in Figure 13.

Figure 13 Ways in which community members can sell their produce

Distance between farmland of the sample FPC members and markets

The percentage of members whose farmland were 10 km or less from the nearest agricultural products markets was 80.3%, and the percentages of members whose farmland were 10-20 km and more than 20 km from the nearest markets were 12.5% and 7.2%, respectively (shown in Figure 14). It showed that agricultural products markets were located near members' farmlands, that was the distance between place of production and place of sale were relatively close, and members enjoyed convenient trading conditions.

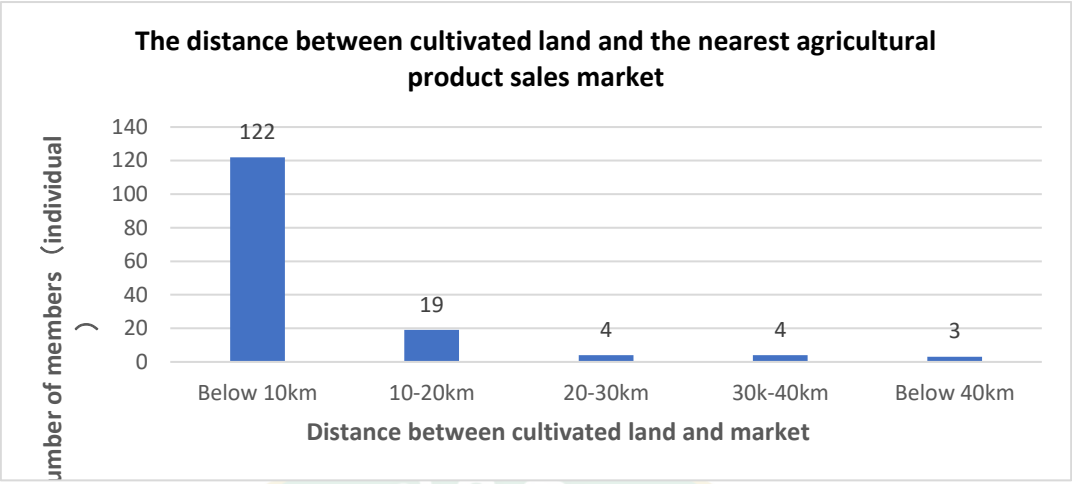


Figure 14 Distance of community members' farmland from the nearest agricultural marketing market

Objective 2: To Study the Level of Farmer Professional Cooperatives Competency

This part of the survey sample and data was obtained from 152 members of edible rose FPCs at Bajie Street, Anning City. The survey covered four categories: FPC information, FPC performance, FPC skills and FPC culture. A random sample survey was used to analyze OC of FPCs. The samples were described in detail separately below.

FPC Information

FPC information was described according to six aspects: requirements of joining FPCs, financial disclosure, fairness of management system, infrastructure of location, level of economic development and roles of the government to FPC development.

The connection between core members and ordinary members

About 50% of members wanted to increase the number of members in FPCs (shown in Table 14). 95.4% of the members agreed that the shares held by members varied widely. Most of the members wanted FPCs to be run by a large grower. It was indicated that the members wanted to have more say in the

production and operation of the FPCs. The majority of members were more satisfied with the core members of the FPCs, for the performance of the core members was deeply rooted the hearts of members and convinced most members.

Table 17 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
An increase in membership	2 1.3%	5 3.3%	27 17.8%	42 27.6%	76 50%	4.2 2	0.941	VH
The share holding ratio of members varies greatly	19 12.5%	8 5.3%	51 33.6%	42 27.6%	32 21.1%	3.3 9	1.235	M
The leader is a big farmer	6 3.9%	6 3.9%	41 27.0%	40 26.3%	59 38.8%	3.9 2	1.083	H
Members are satisfied with core members	0 0%	2 1.3%	28 18.4%	33 21.7%	89 58.6%	4.3 8	0.828	VH

Legal procedures and bylaws of FPCs

The majority of members thought that the establishment of FPCs was in accordance with the legal procedures, that joining or leaving FPC of members was in accordance with the legal procedures and that the general meetings of FPC members were held in accordance with the legal procedures, while members that disagreed or strongly disagreed accounted for only 0.7%. The majority of members agreed that the meetings of FPCs' board of directors and supervisory boards were held in accordance with the legal procedures and bylaws, which indicated that members were satisfied with the legal procedures and bylaws of FPCs.

Cooperative financial and operational management system

The majority of members believed that the FPCs' financial records were detailed, that the financial situation was regularly disclosed, and that there was a fair management system in place (shown in Table 18). 50% of the members believed that the records of the cooperative's general meetings are detailed, and 50.7% believe that the records of board meetings and supervisory board meetings of FPCs were detailed, which indicated that the FPCs took good notes at their regular meetings.

Table 18 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Regular disclosure of financial position	2 1.3%	2 1.3%	34 22.4%	47 30.9%	67 44.1%	4.15	0.904	H
Fair management system	1 0.7%	4 2.6%	25 16.4%	37 24.3%	85 55.9%	4.32	0.888	VH

The role of government for FPCs

About 72.5% of members that agreed the government encouraged and supported farmers to join FPCs, and most of them and most of them said they were satisfied with the government's encouragement and support for the development of FPCs and satisfied with the role of the government in the development of FPCs (shown in Table 19). The results indicated the government's role in guiding, promoting and facilitating FPCs at Bajie Town was important.

Table 19 Descriptive statistics for the sample of **FPC** members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
The government encouraged farmers to participate	0 0%	5 3.3%	30 19.7%	42 27.6%	75 49.3%	4.23	0.880	VH
The government encourages the development of cooperatives	1 0.7%	3 2.0%	30 19.7%	40 26.3%	78 51.3%	4.26	0.888	VH
Members are satisfied with the role of government	1 0.7%	6 3.9%	34 22.4%	47 30.9%	64 42.1%	4.1	0.926	H

Local economy and satisfaction with FPCs

The majority of members believed that requirements of joining FPCs was low (shown in Table 20), and that many people in their villages joined FPCs. Effective ways for most members to learn about FPCs were introductions from family members and friends, government publicity and joining FPCs on their own initiative. There are various ways for members to learn about FPCs. The percentage of members satisfied with the development of the FPCs was 99.3%. The satisfied members believed that their village had convenient transportation and good infrastructure, as well as were confident in the economic development of the local areas. The majority of members wished to continue to being members of FPCs, which indicted that the FPCs' production and operation brought many benefits to members and that members had a high level of trust in the FPCs. Most members wished increasing the total amount of fixed assets and the base areas of FPCs with a view to achieving further expansion of FPCs' production and operation.

Table 20 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Entry requirements	6 3.9%	1 0.7%	29 19.1%	41 27%	75 49%	4.17	1.021	H
Membership satisfaction cooperative	1 0.7%	0 0%	24 15.8%	40 26.3%	87 57.2%	4.39	0.799	VH
Infrastructure condition	2 1.3%	3 2%	39 25.7%	40 26.3%	68 44.7%	4.11	0.946	H
Level of economic development	4 2.6%	9 5.9%	46 30.3%	39 25.7%	54 35.5%	3.86	1.057	H
Increase total fixed assets	1 0.7%	2 1.3%	27 17.8%	39 25.7%	83 54.6%	4.32	0.858	VH
Expand the base area	1 0.7%	3 2.0%	34 22.4%	36 23.7%	78 51.3%	4.23	0.91	VH

FPC Performance

FPC performance was measured on eight aspects which were increase in FPC income, consistency of FPC profitability with expectation, increase in fixed assets of FPCs, increase in member's income due to FPCs, reduction in the cost of raw agricultural products, reasonable distribution of income, increase in the ability of members avoiding risk due to FPCs and positive impact of FPCs on local economy and society.

Equipment and scale of FPCs

About 57.9% of members believed that the number of machines used by the FPCs for processing increased, and 60.5% of members wanted FPCs to grow in size (shown in Table 21). The result indicated that the growing size of FPCs made the FPC members feel more secure, and therefore the members wanted to increase the number of machines and expand the scale of FPCs' production and operation.

Table 21 Descriptive statistics for the sample of FPC members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Increase of machinery and equipment	0 0%	1 0.7%	25 16.4%	38 25%	88 57.9%	4.40	0.783	VH
Scale expansion	1 0.7%	0 0%	22 14.5%	37 24.3%	92 60.5%	4.44	0.787	VH

Agricultural products and their prices

The majority of members were satisfied with the sales price of agricultural products, but believed that the price was greatly influenced by the market and fluctuates greatly. Most members believed that the FPCs sold agricultural products uniformly, while the percentage of members agreed that they were in favor of online sales was 70.4% or more (shown in Table 22). The result indicated that members believed the sales price of agricultural products in the FPCs was higher and more stable than that of independent sales, believed that online sales widened the channels of agricultural product sales, and believed that the combination of online and offline sales was achieved. The majority of the members believed that the demand for agricultural production loans was high, believed that agricultural production materials (agricultural machinery, fertilizers, pesticides, etc.) was expensive, which indicated that the initial cost of agricultural production inputs was high. Most FPCs purchased agricultural production materials (seeds, fertilizers, pesticides, etc.) and sold agricultural products uniformly for members, which indicated that FPCs that FPC unified sales and unified purchasing reduced the production costs for farmers to a certain extent.

Table 22 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Satisfactory selling price	0 0%	6 3.9%	53 34.9%	37 24.3%	56 36.8%	3.94	0.937	H
The price is heavily influenced by the market	5 3.3%	1 0.7%	32 21.1%	36 26.7%	78 51.3%	4.19	1.008	H
Large price fluctuation	0 0%	5 3.3	30 19.7%	46 30.3%	71 46.7%	4.20	0.871	H
High demand for loans	6 3.9%	5 3.3%	42 27.6%	42 27.6%	57 37.5%	3.91	1.067	H
High prices for means of production	2 1.3%	0 0%	41 27.0%	29 19.1%	80 52.6%	4.22	0.934	VH
Unified purchase of means of production has a large proportion	14 9.2%	17 11.2%	46 30.3%	26 17.1%	49 32.2%	3.52	1.297	H
The proportion of unified sales is large	9 5.9%	3 2.0%	27 17.8%	38 25%	75 49.3%	4.10	1.132	H
The proportion of online sales is large	17 11.2%	28 18.4%	64 42.1%	20 13.2%	23 15.1%	3.03	1.173	M

Production, operation and income distribution

About 92.8% (shown in Table 23) of the members believed that they did not pay a large amount of the membership fee for joining the FPCs, which indicated that the principle of freedom of joining FPCs was implemented, and that more farmers were encouraged to FPCs by means of a low threshold. The majority of members believed that after they joined FPCs, the problem of production capital was solved, and production costs was reduced. This result indicated that the production and operation mode of FPCs had lower production costs and higher profits than

independent operation, and members were very willing to continue to be members and to develop and expand the FPC economy. More than 60% of members were satisfied with the current income distribution method of FPCs, and hoped that the distribution method which is mainly based on the share capital and on the trading volume was the best way to distribute the FPC surplus. Most members were in favour of this distribution, while only a few disagreed.

Table 23 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Pay higher entrance fees	141 92.8%	1 0.7%	5 3.3%	4 2.6%	1 0.7%	1.18	0.672	VL
Members have easy access to funds	5 3.3%	6 3.9%	43 28.3%	52 34.2%	46 30.3%	3.84	1.011	H
The cost of production by members has decreased	0 0	9 5.9%	52 34.2%	47 30.9%	44 28.9%	3.83	0.919	H
Satisfactory income distribution	1 0.7%	2 1.3%	32 21.1%	47 30.9%	70 46.1%	4.20	0.864	H

Changes in income since joining FPCs

As far as “increase in revenue”, the proportion of members in favour and above was 96.7%. Most members considered the FPCs’ profitability was better than what was expected at the time of FPCs were established. The result indicated that FPCs produced and operated well. After joined FPCs, most members' annual household income increased, and they were satisfied with the amount of increase. The difference between the income of FPC members and that of farmers producing similar agricultural products as FPC members but out of FPCs in the local area was large, which was a boon to FPC members whose income mainly from agricultural products. Results were shown in Table 24.

Table 24 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Increase in revenue	2 1.3%	3 2.0%	36 23.7%	43 28.3%	68 44.7%	4.13	0.933	H
Increase in profitability	0 0%	4 2.6%	32 21.1%	40 26.3%	76 50%	4.24	0.874	VH
Increase in household income	0 0	3 2.0%	30 19.74%	36 23.68%	83 54.61%	4.31	0.855	VH
Satisfied household income	2 1.3%	2 1.3%	39 25.7%	36 23.7%	73 48.0%	4.16	0.943	H
High income from agricultural products	0 0%	1 0.7%	39 25.7%	39 25.7%	73 48.0%	4.21	0.851	VH
Members earn more than non-members	0 0%	0 0%	48 31.6%	49 32.2%	55 36.2%	4.05	0.825	H

Members' satisfaction with FPCs

The majority of members believed that FPCs provided income security and improved their ability to resist risks. The majority of members believed that the FPCs had a positive impact on local economic and social development, and 98% of members agreed that. This showed that members were more satisfied with the FPCs. Members believed that FPCs helped farmers avoiding some of the risks, and were willing to transfer their own land to FPCs, and believed that FPCs contribute more to local economic development. Members were optimistic about the future development of FPCs. This was shown in Table 25.

Table 25 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Improve the ability to resist risks	2 1.3%	1 0.7%	32 21.1%	53 34.9%	64 42.1%	4.16	0.87	H
Have a positive impact on the economy	0 0%	3 2%	21 13.8%	49 32.2%	79 52%	4.34	0.79	VH

FPC Skills

The skills of a FPCs were represented by three skills (the skill of cultivation of crops, the skill of prevention and control of diseases and insects, the skill of selling products on lines) of members in FPCs. Secondly, the ability of the FPCs to organize members to learn skills was reflected by the number of professional skills training and management knowledge training held for members by FPCs. Finally, the strength of the government's support to the improvement of professional skills of FPCs was reflected by the number of services provided by the agricultural technology department of the government.

The skills of the members

Most of the members said that they mastered the techniques of planting and pest control, and mastered the knowledge of fertilizers and pesticides. This showed that most of the members were trained in the FPCs, and the skills they have learnt and mastered can be used skillfully in the production and operation of the FPCs. They gained not only more money but also more skills after they joined FPCs. Data was shown in Table 26.

Table 26 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Master planting techniques	1 0.7%	1 0.7%	46 30.3%	35 23.0%	69 45.4%	4.12	0.913	H
Master the technology of prevention and control	1 0.7%	2 1.3%	42 27.6%	38 25.0%	69 45.4%	4.13	0.911	H
Master the use of chemical fertilizers and pesticides	1 0.7%	2 1.3%	37 24.3%	40 26.3%	72 47.4%	4.18	0.895	H

Means of marketing agricultural products

The majority of the members were generally in favour of using the internet to sell their products, and the majority of them were in favour of adjusting the price of their products to the market.. This showed that farmers were very passive about the price of agricultural products, and may even suffered losses in the pricing of agricultural products due to lagging information. Members were generally in favor of using promotional means and online sales, which indicated that FPCs' products were sold by a single means, so training sessions on combining online sales skills and offline sales skills should be organized to broaden sales channels and increase

members' income. Data on means of marketing agricultural products was shown in Table 27.

Table 27 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	$\bar{X}$	SD	Level
Use the Internet to sell	24 15.8%	23 15.1%	53 34.9%	23 15.1%	29 19.1%	3.07	1.305	M
Can adjust the selling price	3 2.0%	7 4.6%	58 38.2%	37 24.3%	47 30.9%	3.78	1.005	H
Use promotions	4 2.6%	8 5.3%	66 43.4%	26 17.1%	48 31.6%	3.70	1.055	H

Brand and competitive advantage

55.3% of the members were satisfied that their FPCs had their own brands, and 57.9% of members strongly agreed that it was more important for FPCs to provide members with uniform product standards and technical guidance. With regard to the production and operation of cooperatives, they believed that the competitive advantage of FPCs was product advantage, were very satisfied that FPCs had their own brands, and were also deeply aware of the importance of brands in the production and operation of agricultural products. This indicated that members had a positive attitude towards the development of FPCs, and were very satisfied with the current level of development of FPCs. 51.3% of the members strongly agreed that the competitive advantage of FPCs was the product advantage, which indicated that members believed Bajie Town had a unique geographical and climatic advantage of the production and development of edible roses. Data on brand and competitive advantage was shown in Table 28.

Table 28 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Satisfactory brand building	1 0.7%	7 4.6%	24 15.8%	36 23.7%	84 55%	4.28	0.938	VH
Product standards and technical guidance are important	0 0%	2 1.3%	23 15.1%	39 25.7%	88 57.9%	4.40	0.791	VH
Competitive advantage is the product	0 0%	0 0%	24 15.8%	50 32.9%	78 51.3%	4.36	0.741	VH

Multiple training sessions in FPCs

The majority of members believed that the FPCs called members for training in professional skills, management and business knowledge more than once. However, 57.2% of the members wished their FPCs to organize training sessions on production techniques, and most of members wanted their FPCs to organize training sessions on online marketing skills. This result indicated that FPCs had training sessions several times, but the degree to which members mastered the training content varied, so some members hoped that the number of training sessions should be increased for members learning more skills. The result also indicated that members understood that more techniques and skills make them to increase their level of producing and marketing. Data on training sessions was shown in Table 29.

Table 29 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	X	SD	Level
Professional skills training	3 2%	5 3.3%	37 24.3%	41 27%	66 43.4%	4.07	0.994	H
Management and operation training	4 2.6%	7 4.6%	39 25.7%	40 26.3%	62 40.8%	3.98	1.045	H
Increase training in production techniques	0 0%	1 0.7%	21 13.8%	43 28.3%	87 57.2%	4.42	0.751	VH
Increase training in Internet marketing	0 0%	7 4.6%	32 21.1%	40 26.3%	73 48%	4.18	0.921	H

Satisfaction with multiple agents

In terms of satisfaction with the services provided by the government's agricultural technology department, stakeholder enterprises and rural financial organizations, only a small proportion of members were relatively and very disapproving, and the proportion of members generally in favour was high. The result indicated that multiple actors brought appropriate services to FPCs, but members did not agree with the services they provided. The reason why some members did not appreciate those services was that the number of those services was low, or was that those members believed the main force for FPC development was internal force while external force played secondary role. Data on satisfaction was shown in Table 30.

Table 30 Descriptive statistics of cooperative member samples

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	$\bar{X}$	SD	Level
Satisfactory technical service	12 7.9%	8 5.3%	37 24.3%	42 27.6%	53 34.9%	3.76	1.211	H

FPC Culture

The cultural strength of a FPC was measured by the extent of its members' understanding of the FPC's development process, development goals, management methods, development vision and core values. The identification of members with its FPC culture was measured by their recognition of the importance of the FPC culture and by their recognition of the most important explicit and implicit abilities of core members.

The extent to which members knew their FPCs

The majority of members knew the development process of their FPCs, experienced difficult times in the development of their FPCs, and understood the development goals and business methods, vision, development goals and business methods of their FPCs, while only a small number of members disagreed or strongly disagreed that they knew. This showed that as the members grew together with their FPCs, the understanding of FPCs has penetrated deep into the internal level. Data was shown in Table 31.

Table 31 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	$\bar{X}$	SD	Level
Understanding of the development process	2 1.3%	5 3.3%	33 21.7%	41 27%	71 46.7%	4.14	0.959	H
Understanding of objectives and business methods	3 2%	4 2.6%	31 20.4%	47 30.9%	67 44.1%	4.13	0.958	H
Understanding of the vision	4 2.6%	3 2%	44 28.9%	39 25.7%	62 40.8%	4.00	1.01	H
Understanding of core values	4 2.6%	2 1.3%	38 25%	46 30.3%	62 40.8%	4.05	0.975	H
Cultural values are important	3 2%	1 0.7%	31 20.4%	51 33.6%	66 43.4%	4.16	0.907	H

The key to FPC development

The main difficulty encountered by FPCs in their current development was the lack of good management personnel. And 61.2% of members believed that the key factor in the development of FPCs was an excellent chairman (leader), which indicated that the construction of the leadership team was the key factor In the development of FPCs and indicated that members highly expected key persons in FPCs to lead the development and growth of FPCs. Relative data was shown in Table 32.

Table 32 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	Gener al	More in favour	Very much in favour	$\bar{X}$	SD	Level
Lack of managerial talent	2 1.3%	4 2.6%	29 19.1%	49 32.2%	68 44.7%	4.16	0.917	H
The key factor is a good chairman	1 0.7%	0 0%	23 15.1%	35 23%	93 61.2%	4.44	0.795	VH

The core member's most important competence

50% of the members believed that the most important explicit ability of the core members of FPCs was management ability, while 53.9% of members believed that the most important implicit ability of the core members of FPCs was the ability to cooperate. This result showed that management ability and the spirit of cooperation were the most important abilities of the core members of FPCs. Data was shown in Table 33.

Table 33 Descriptive statistics for the sample of cooperative members

Category	Strongly Disagree	More Disagree	General	More in favour	Very much in favour	$\bar{X}$	SD	Level
The management ability of core members is important	2 1.3%	2 1.3%	24 15.8%	48 31.6%	76 50%	4.28	0.87	VH
The cooperative spirit of core members is important	1 0.7%	0 0%	27 17.8%	42 27.6%	82 53.9%	4.34	0.815	VH

Overall satisfaction with FPCs

As far as overall satisfaction, 65.1% (shown in Figure 15) of members were very much in favor of their satisfaction with FPCs. This showed that the majority of members were satisfied with the production and management model of their FPCs and agreed with the core values of FPCs, and showed that FPCs were important to their members.

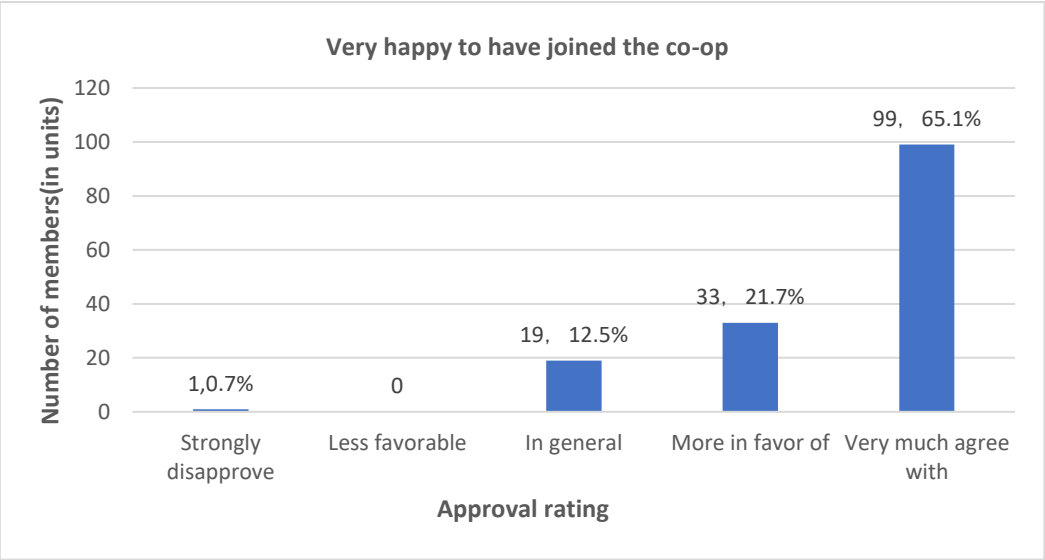


Figure 15 Satisfaction of the members joined the cooperatives

Competency level evaluation of cooperative organization

As for the expression of organization competency (OC), the academic circle holds that it is a superior concept closely related to individual competency, and it is a combination of various resource and capabilities including a series of tactics, knowledge, technology, skills, culture and other components complementing each other and inherent in an organization.

Weight analysis of FPC competency

The weight scores and descriptive statistics of 152 FPC members' evaluation on the four dimensions of FPC basic information, FPC performance, FPC skills and FPC culture by entropy value method were shown in Table 34. The higher weight scores, the higher the importance of the indicators.

As can be seen from Table 34, among the four dimensions of FPC competency, the weight of FPC skills and FPC performance was 0.3219 and 0.3076, respectively, ranking the first and the second. So it was obviously that FPC competency was largely reflected in FPC skills and FPC performance. From the perspective of secondary index, the skill of using network to sell agricultural products had the highest weight in the FPC skills, which indicated that in the current information society, the network marketing of agricultural products became an indispensable skill. Secondly, the ability to decrease cost of agricultural products had

the highest weight in the FPC performance, which indicated that it was important to control the cost of agricultural products in improving the FPC performance. The weight of FPC culture and basic information was relatively small, ranking the third and fourth respectively, with weight scores of 0.1942 and 0.1762. This indicated that FPC culture was also an important factor affecting the FPC competence. From the perspective of secondary indexes, the weight scores of FPC development aspirations and core value were high, which indicated that it was necessary to work from improving FPC development aspirations and core value in order to improve the FPC culture soft power.

Table 34 Weight scores of each dimension of FPC competency and descriptive statistics

Function dimension	variable name	Mean	Standard error	weight	level
FPC information (0.1762)	I think the barrier to joining a FPC is low	4.1711	1.0215	0.0368	H
	I think the FPC regularly discloses its finances	4.1513	0.9044	0.0252	H
	I think the FPC has a fair management system	4.3224	0.8885	0.0217	VH
	I think the local infrastructure is good	4.1118	0.9459	0.0279	H
	The government encourages and supports the development of FPCs	4.2566	0.8877	0.0220	VH
	I think the local economic development level is very good	3.8553	1.0573	0.0426	H

Table 34 (Cont.)

Function dimension	variable name	Mean	Standard error	Weight	level
FPC performance (0.3076)	The FPC's revenue is increasing	4.1316	0.9327	0.0270	H
	I think the profitability of the FPC is quite satisfactory compared to its initial expectations	4.2368	0.8745	0.0481	VH
	FPC processing machinery and equipment is constantly increasing	4.4013	0.7828	0.0319	VH
	Since I joined the FPC, the annual income of my family has increased continuously	4.3092	0.8553	0.0429	VH
	After I joined the FPC, the cost of producing the produce went down	3.8289	0.9191	0.0772	H
	I am satisfied with the current way the income is distributed in the FPC	4.2039	0.8638	0.0212	H
	I think FPCs provide income security and increase members' ability to resist risks	4.1579	0.8697	0.0232	H
	I think FPCs have a positive impact on local economic and social development	4.3421	0.7899	0.0361	VH
Co-operative skills (0.3219)	I have mastered the technique of growing agricultural products	4.1184	0.9130	0.0242	H
	I've mastered the art of pest control	4.1316	0.9112	0.0242	H
	I will use the Internet to sell products	3.0658	1.3055	0.1328	M
	FPCs gather members for professional skills training more times	4.0658	0.9945	0.0330	H
	FPCs gather members for management and operation knowledge training more times	3.9803	1.0451	0.0392	H
	I am satisfied with the services provided by the government's agricultural technology department	3.7632	1.2111	0.0685	H

Table 34 (Cont.)

Function dimension	variable name	Mean	Standard error	Weight	level
FPC culture (0.1942)	I understand the development of the FPC	4.1447	0.9588	0.0286	H
	I understand the development goals and operation methods of FPC	4.1250	0.9581	0.0301	H
	I understand the vision of the FPC	4.0000	1.0099	0.0360	H
	I understand the core values of the FPC	4.0526	0.9751	0.0331	H
	I think the cultural value of FPC is very important	4.1579	0.9070	0.0265	H
	I think the most important explicit ability of the core members of FPC is the ability of management	4.2763	0.8704	0.0223	VH
	I think the most important hidden ability of the core members of FPC is the spirit of cooperation	4.3421	0.8146	0.0176	VH

Ranking of the level of FPC competency

To further study the level of FPC competency, the level of competency of 26 FPC was measured and ranked. The higher their composite scores, the stronger the FPC competency, and the smaller the composite scores, the weaker the FPC competency. Scores were shown in Table 35.

To measure the competency level of cooperatives, firstly, the entropy method is used to calculate the basic information, cooperative performance, cooperative skills and cooperative culture of 152 members and the weight of each index. Then, the standardized value and weight of each index are used to calculate the competency level of each member. Since the respondents in the early stage were mainly concentrated in 26 specialized farmer cooperatives, and considering that it is difficult to directly measure the competency of each cooperative, the mean value of each member's competency level calculated above is adopted to measure the competency level of each cooperative, and the competency level of these 26 specialized farmer cooperatives is ranked. However, due to the limitations of sample

size and other factors, it is difficult to ensure that the number of samples surveyed by each farmer specialized cooperative is completely consistent. However, in order to ensure the reliability and scientificity of the research to the maximum extent, about 10 people are interviewed by the government. At the level of cooperatives, each cooperative should interview at least one president, one to two core members and one to two ordinary members.

Table 35 Results of competency measurement for 26 farmer FPCs

Cooperatives	Score	Ranking
An Ning Bajie Gaoqiao Edible Rose Cooperative	0.6040	23
Anning Maiyuan Edible Rose Cooperative	0.8731	10
Anning Xiang Hua Rose Farmer Cooperative	0.6770	21
Anning Green Valley Field Growers' Cooperative	0.8163	14
Anning Luyu Edible Rose Cooperative	0.8880	9
Anning Maipin Cuiyuan Professional Cooperative Society	0.8283	12
Yunnan Ning Shengyuan Planting Cooperative	0.6060	22
Anning Yuanjin Agricultural Development Professional Cooperative Association	0.9999	1
Rong Turnip Rose Growers' Cooperative	0.8233	13
Anning Ruijin Fruit and Vegetable Cooperative	0.9244	7
An Ning Jing Hui Rose Farmer Cooperative	0.9917	4
Anning Avis Edible Rose Farmer Cooperative	0.7831	16
An Ning Shi Yun Lai Planting Cooperative	0.8392	11
Anning Junqi Rose Professional Cooperative	0.7386	20
Anning Zhiyi Rose Farmer Cooperative	0.5852	25
Anning Hongsheng Agricultural Technology Co.	0.9862	5
An Ning Zongyu Agricultural Planting and Development Cooperative	0.5857	24
Anning Hongrun Edible Rose Cooperative	0.9352	6
Anning Jinshangtianhua Rose Growers' Cooperative	0.9999	1
Anning Yaohui Edible Rose Professional Cooperative	0.8003	15
Anning Fenxiang Shunfeng Rose Cooperative	0.7704	19
Anning Xinrun Flower Cooperative	0.7735	18
Anning Hongxin Edible Rose Professional Cooperative	0.8982	8
Anning Qinling Rose Growers' Cooperative	0.5437	26
Anning Flowers & Fragrant Edible Roses Co-operative	0.9999	1
Anning Yunxin Farmer Cooperative	0.7739	17

Objective 3: To Study the Factors Effecting competency of the FPC

The factors influencing the FPC competence are diverse and complex. Therefore, these influencing factors were broadly classified into categories: individual member factors, FPC internal factors and FPC external factors in this research. The individual member factors were referred to the individual member's education level and the length of time the members have been involved in agricultural production. The FPC external factors included two factors, regional situation and external program of FPCs, which were mainly reflected by the mean values of indicators such as good natural conditions, distances to Kunming City, strong policy support by the government and strong financial support by the government. The FPC internal factors included two factors: the FPC overall situation and internal management, which were mainly reflected by the average values of indicators such as the number of the FPC's trademarks, the degree of participation of FPC members, standardized internal management of FPCs, and reasonable income distribution in FPCs. The results of descriptive statistics for the variables were showed in Table 36.

Table 36 Results from descriptive statistics

Variable type	Variable name	Symbols	Mean	Std. dev.	Min	Max
Explained variables	FPC Competence Level	Y	0.7236	0.1670	0.3022	1.0000
Explanatory variables	Education level of individual members	X1	1.9145	0.6606	1.0000	4.0000
	Length of time that members have been engaged in agricultural production	X2	3.6908	1.3917	1.0000	5.0000
	Regional situation	X3	4.0192	0.5429	2.6923	5.0000
	External program	X4	3.6296	0.8651	1.0000	5.0000
	FPC situation	X5	4.0921	0.7986	1.0000	5.0000
	Internal operating	X6	3.9597	0.7665	2.0000	5.0000

Table 37 Correlation test

Variables	(Y)	(X1)	(X2)	(X3)	(X4)	(X5)	(X6)
Y	1.000						
X1	-0.028	1.000					
X2	-0.019	-0.454***	1.000				
X3	0.641***	-0.281***	0.082	1.000			
X4	0.735***	0.025	-0.157*	0.639***	1.000		
X5	0.687***	-0.246***	0.122	0.621***	0.564***	1.000	
X6	0.751***	-0.206**	0.138*	0.607***	0.622***	0.722***	1.000

*** p<0.01, ** p<0.05, * p<0.1

According to the correlation test, X1 (education level) and X2 (time spent in agricultural production) were not significantly correlated with the dependent variable, so they were not studied in the next empirical study.

Table 38 Multicollinearity analysis

Variable	VIF	1/VIF
X5 (FPC situation)	1.73	0.577407
X6 (Internal operating)	1.63	0.611926
X4 (External program)	1.27	0.788853
X3 (Regional situation)	1.24	0.804839
Mean VIF	1.47	

Before the regression test, the multicollinearities among the variables were tested with Stata 17. The test results were shown in Table 38. The VIF value and the mean value of VIF of each variable were less than 10, and the multicollinearity test succeeded. There was no multicollinearity among the variables, then the regression test analysis was performed.

The internal factors and external factors were regressed separately (Song yan, et al., 2016; Liu jiong, 2022), and then they were regressed together.

The first part of results was the regression result of external factors. In this result, both aspects of external factors were significantly positive at 1% level, among which the regression coefficient of X3 was 0.557 and the regression coefficient of X4 was 0.505. This result indicated that the external factor X3 has more influence on the level of FPC competence. The reason for this result was that FPCs located in rural areas, and the natural environment and market environment and other resources in the areas provided the conditions for the establishment of FPCs. The equipment, agricultural machinery, infrastructure construction and skills training activities needed in the process of FPC operation required a huge amount of money. With financial support and policy support from the government and with guidance from the Law on Professional Farmers' Cooperatives, difficulties such as financial

pressure encountered by FPCs when they were established were reduced, and FPCs were promoted to develop well. In the operation of FPCs, the favorable natural environment and market environment enhanced the access to resource and information in the development process of FPCs, promoted cooperation and competition among FPCs, and then promoted the development of FPCs. Therefore, compared with the operation mechanism of FPCs, the regional conditions among the external factors had more influence on the level of FPC competency.

The second part of results was the regression result of internal factors. As for this result, both of internal factors were significantly positive at 1% level, the regression coefficient of X5 was 0.330 and that of X6 was 0.632. The result indicated that X6 had more influence on the level of FPC competence among the internal factors. The reason for this result was that the operation scale of FPC, origin mark, and trademark affected the recognition of FPCs in the market. As a kind of organization, FPCs had their own internal management mechanism. the standardized and orderly management mechanism, the complete organizational structure and sufficient operating capital promoted FPC to be in an orderly operation and management activity. The reasonable income distribution method improved the work enthusiasm of all FPC members and improved the operation efficiency of the FPC. While the good service conditions provided by the FPC were conducive to enhancing the absorption of FPC members, to optimizing the allocation of human resources of the FPC, to making the cooperative bigger and stronger, and to improving the visibility, share and competitiveness of the FPC in the market. Therefore, it was very important for FPCs to have standardized and orderly internal management to improve FPC competence. Compared with the FPC overall situation, the FPC internal management had a greater impact on improving the level of FPC competence among internal factors.

The third part of results was the combined regression results. It was obvious that all variables passed the significance test. Among variables, X3 and X5 were significantly positive at the 5% significance level, and X4 and X6 were significantly positive at the 1% significance level. In terms of regression coefficients, regression coefficient of X6 was the largest at 0.413 among internal factors, which indicated that internal factors were the main factors affecting the level of FPC competency

compared to external factors. Therefore, in the process of development, eyes should be kept on both external and internal factors, but since the key point should be grasped firstly, internal factors should be focused on. On the basis of the current development, FPCs should focus on improving the internal management of FPCs, improve the driving force of internal development, and then continuously improve the FPC competence.

Table 39 Results of Multiple Regression Analysis

Explained variables	**Y**		
VARIABLES	**(1)**	**(2)**	**(3)**
	(external factors)	**(internal factors)**	**(combined factors)**
lnX3 (Regional situation)	0.557***		0.216**
	(0.115)		(0.109)
lnX4 (External program)	0.505***		0.331***
	(0.0593)		(0.0558)
lnX5 (FPC situation)		0.330***	0.168**
		(0.0767)	(0.0712)
lnX6 (Internal operating)		0.632***	0.413***
		(0.0836)	(0.0788)
Constant	-1.757***	-1.666***	-1.859***
	(0.129)	(0.0857)	(0.111)
Observations	152	152	152
R-squared	0.608	0.618	0.717
F	115.58	120.32	93.22
	0.0000	0.0000	0.0000

Standard errors in parentheses *** p<0.01, ** p<0.05

As far as comprehensive regression, both external and internal factors were related to FPC competence as following:

Internal Factors

Income Distribution

The variable of increasing farmers' income is the most important goal of FPCs (Huyajie et al., 2022). Reasonable income distribution can directly improve the enthusiasm of members and encourage them to work harder in agricultural production (Xv xvchu, 2018). FPC members at Bajie Town hoped to increase their income by joining FPC, share a sense of honor and belonging, and get more opportunities to receive education and often travel.

Organization

The sound development of FPC depends on standardization of registration, organization and financial management (Li yuying, et al., 2022). Most rose FPC at Bajie Town had complete bylaws, standardized establishment procedures and regular member meetings. Villagers were willing to participate these FPC, and the government gave a lot of policy support to them, so they had a fast growth in operating income.

Fundraising

There are some problems, such as difficulty in raising funds, in the development of FPC, and broadening the channels of raising funds accelerates the development of FPC (Wang wan, 2014). Some rose FPCs at Bajie Town were underfunded in planting and selling. They needed financial support from the government. On the other hand, they should think of more ways to raise funds through multiple channels for themselves.

Own Trademark

The FPCs' own trademarks have an impact on the level of development of FPC (Liu guoxing, et al., 2017). Trademarks were the main signs that distinguished agricultural products between FPCs. Trademarks with high recognition brought benefits to FPC and enhanced the influence of FPC. According to this investigation, it was found that the president of a rose FPC in Bajie Town registered his name and his daughter's name as the trademark of his FPC.

Participation Intensity

The level of participation of FPC members in FPC matters affects the development of FPCs (Chen, Shuai, 2020). With high participation of members, their satisfaction with the FPCs was improved, their enthusiasm and initiative in work were enhanced, and the operational efficiency of the FPCs was improved. Low participation of members resulted in weak vitality of FPC development and was not conducive to the development and growth of FPCs.

External Factors

Location of FPC

In the continuous development of FPCs, FPCs should give full play to their own advantages (Su jun, 2022). Bajie Town is located in the south of Anning City, 35 kilometers away from the downtown of Anning and 67 kilometers away from the downtown of Kunming (the capital city of Yunnan Province). Its transportation infrastructure and facilities are good. FPCs near the highway should make full use of the location advantage to reduce the cost of rose products; while FPCs far away from the highway use logistics, cold chain and other facilities to improve the market competitiveness of cooperatives.

Number of Cooperatives

Most of FPCs in Anning City were established from 2013 to 2018. By 2022, FPCs engaging in the cultivation, processing and sale of roses at Bajie Town made up 60% of the city's FPCs (Government Work Report, 2022). On the one hand, the government vigorously supported the development of cooperatives because of the large number of rose FPC. On the other hand, the market was well-informed, which was conducive to sales and large-scale production of rose FPC. It should also be noted that there is fierce competition among FPC (Tian hejun, 2022; Huang zhijun, 2022).

Legal Support

Since the implementation of China's Farmer's Professional Cooperative Law, FPCs have been developed in counties, cities, and townships (Hao-Dong Luo,Si-Hao Chen,Chao Chen,Xiang Li, 2023). The establishment and development of FPC under the guidance of this law has given legitimacy to the operation of FPCs, which can optimize FPC management of financial and personnel contents in the operation process and enhance the orderliness and standardization of FPC operation and management.

Government Support

Compared with other organizations, FPCs in rural areas have faced with a lot of difficulties, such as difficulties in purchasing agricultural machinery, building infrastructure, and providing agricultural skill training for members, in their development. In addition to FPCs themselves finding ways to solve these problems, the government should also provide corresponding policy support and financial support to promote the development of FPCs.

Objective 4: To Formulate the Guideline to Improve Farmer Professional FPC Competency

In the development of cooperatives, based on the analysis of research data, the following countermeasures are proposed on the basis of the analysis combined with the actual situation.

Nurturing Talents

Talents was the key factor affecting the development of FPCs, so it is important to do a good job of training personnel in the future. In order to improve the capacity of FPC members, training for FPC members should be given according to the actual development of each FPC. It is recommended to use small class training for members, and ensure that the training time is sufficient. As most members being trained are not highly educated, it is important to choose a suitable training way that is as acceptable to the members as possible, and to use words or terms that the

members can understand when trainers expressing themselves. Training in production and management skills should be stepped up to help members develop a sense of cooperation and quality of agricultural products and to create a good collective atmosphere. Members should be trained according to FPCs' production. In the daily production activities, attention should be paid to building the members' sense of responsibility. More activities should be conducted to increase communication between members, the members' sense of cooperation should be developed, and FPC culture should be built by members together. More than half of the members mentioned in the interview that they would like to have regular membership meetings where they can summarize the work of the previous period and exchange their ideas on how the cooperative should develop. Hold cultural and entertainment activities in festivals, carry out some fun activities, let members have a sense of belonging, and give reasonable rewards to members.

Introduction of Managers

Targeted training for the leaders and relevant managers of FPCs should be provided by experts, in order to improve the professionalism of the leaders and managers of FPCs. It is an effective way to gradually train a group of professional management personnel of FPCs through having the leaders of FPCs to professional colleges and universities to be trained in management, operation and technology of modern agricultural production. As far as the introduction of financial management personnel, the special characteristics of FPCs should be taken into account, and beside professional management knowledge, the introduced personnel should also have a certain understanding of farming, rural areas and farmers. Large and financially strong FPCs have sufficient funds to bring in talent, but smaller and less well-funded FPCs cannot afford to do so. Therefore, FPCs should choose ways to improve the capabilities of managers according to their actual conditions. Some members of the management of cooperatives say that since farmers' specialized cooperatives are mostly established on the basis of voluntary association of farmers and their internal managers are not professional enough, they actively absorb and introduce agricultural technicians with strong professional skills or researchers from scientific

research institutes to participate in them as production consultants to provide technical guidance and forward-looking suggestions for the development of cooperatives.

Regulat the Establishment System

From the level of members, about 40% of the members said that the current standard of the establishment of cooperatives is not good, there is still room for improvement in the future; From the perspective of managers, most of them hope to improve the establishment system within cooperatives as far as possible to avoid serious deviation in the follow-up management process.The system for the establishment of FPCs should be standardized and improved, the requirements for the establishment of FPCs should be strictly examined, so as to avoid the building of FPCs not worthy of their name, and reduce the waste of resources. The democratic decision-making system of FPCs should be improved, and the rights and obligations of members should be clarified, the enthusiasm of members for participating in production and business activities was increased, so that members can play their main role in the operation and management of FPCs. A certain FPC should formulate positive rules and regulations according to its actual situation after it learned from the good experience of other FPCs. The relevant rules and regulations must be formulated according to the development goals of the FPC. Also, the relevant rules and regulations must be formulated with the broad participation and brainstorming of members. Through democratic methods, rules and regulations that are approved by members are formulated, and implemented into daily production and management.

Broaden Access to Finance

70.78% of the respondents said that farmers' specialized cooperatives need financial support most, which shows the importance of expanding financing channels to promote the development of farmers' specialized cooperatives. It is suggested that FPCs broaden their financing channels and diversify their fundraising. The use of

traditional financing methods alone is no longer suitable for the development of FPCs in this era, so it is important to make good use of online information platforms to combine online financing and offline financing, and actively seek financial support from the government or banks. The distribution system should be properly adjusted and improved, so that the interests of the members are emphasized really, so that the risks and benefits are shared, and so that the members receive the benefits they deserve.

Broaden Marketing Channels

The vast majority of members said that after joining the cooperative, the problem of difficult product sales has been solved to a large extent, but in the future, they still hope to further expand the product marketing channels, so as to promote the production and sales of products, and better achieve income increase. Broaden the marketing channels for agricultural products, and further explore other marketing channels in addition to traditional sales methods. Extend the industrial chain and develop the offline sales channels and online sales channels together. Establish a professional marketing team, select suitable members to participate in marketing training and improve their marketing skills. In today's rapid development of network information technology, network marketing is inevitably the most convenient and effective means of marketing, so marketing of agricultural products should be combined the "Internet +" background, and network marketing business model should be innovated. The marketing staff of a FPC should strengthen communication and contact with members of other FPCs to learn from the good experiences of other FPCs. The marketing staff should also actively collect market information. Then the marketing staff should create a marketing model that suits their own development according to the characteristics of their own FPC.

Build a FPC's Own Brand

41.56% of the members said that their cooperatives have their own brands, and 55.84% of the members showed great recognition of their own brands. Nowadays, products are not only competing on price or quality, but also on brand. With a well-known brand, the products will be selected by consumers firstly. The brand generally represents the quality of the product in consumers' minds. Since agricultural products are a necessity of life, the brand building of agricultural products has many challenges and opportunities. It is very necessary to build brands of agricultural products. Only by taking the initiative can FPCs make their products stand out among many agricultural product brands and win the favor of consumers. FPCs should actively seek a variety of development paths, strive to establish their own brands as soon as possible, and grasp the initiative of the market. After the FPC has established the brand of agricultural products, it should take brand promotion as one of its goals. The FPC should actively seek publicity channels, make full use of modern media technology and combine its local characteristics for brand promotion.

Improving The Logistics System

More than 60 percent of the members said they would use the Internet to sell agricultural products. Therefore, it is important to establish a sound logistics system to ensure the operation and circulation of products. Through cooperation with express logistics companies and broadening circulation channels, the agricultural logistics system in the city should be improved and unnecessary links in the circulation process will be reduced. A fully functional logistics industry chain that integrates elements such as transportation, storage, preservation, processing, packaging, loading and unloading, distribution and information processing should be built, so as to provide specialized and systematic logistics services for agricultural products. A certain FPC should actively unite other FPCs with rural logistics outlets and urban logistics outlets to continuously expand and optimize the logistics system.

Rough processing methods not only reduce farmer incomes, but may also affect the quality of agricultural products, so it is difficult that the FPCs build their own brands, which in turn affects sales prices and discourages members from

producing. Therefore, firstly, it is necessary that FPCs provide skills training for members and increase investment in equipment in order to process products at a deeper level, so that agricultural products can add value before products being sold. Secondly, an industry information platform should be set up so that all participants can publish and obtain information on supply and demand directly through this type of information service platform. At the same time, it is necessary to supervise and manage the information platform to provide a safe environment for participants to exchange information.

Sound Financial Systems

More than half of the members thought their financial records were detailed, but about 30 percent were not satisfied with the level of detail in their current financial records. At the same time, more than 90 percent of the members said the cooperative should disclose its financial situation on a regular basis, so it is necessary to establish a sound financial system. FPCs should attach importance to financial management, standardize financial accounting accounts, and organize and preserve accounting files, so they need talents who understand financial management. In addition to the introduction of professional financial management staff, it is essential to improve the financial management skills of the staff in FPCs. The systems work to define staff rights, obligations and restrain staff behavior. Therefore, in order to do a good job in the financial management of FPCs, the financial system, the management system and the reward and punishment system should be clearly defined, and the rights and obligations of the management staff and members must be clearly defined, that means a system chain with a complete system and clear rights and responsibilities should be formed.

Improving Incentives

The restraint incentive mechanisms should be improved to increase the enthusiasm of member participation. FPCs should adopt selective incentives to provide reasonable incentives and penalties for the behavior of their members. In addition to rewarding or punishing members from the economic level, it is also necessary to reward or punish members from the non-material level. With regard to incentives, sometimes non-material incentives are more effective than direct economic rewards. Every farmer who joined the FPC is allowed hold shares to motivate him or her in production and business activities. It is proposed to establish a land shareholding system by which farmers are allowed to use land to buy shares, therefore even if farmers don't have the capital to invest, they can join the FPC. By this system, fragmented land is integrated, and large-scale land will help FPCs to promote productivity gains. It is proposed that financial incentives or/and moral encouragement are given to those who are actively involved in production and business activities and those who contribute to FPCs.

CHAPTER 5
SUMMARIES, CONCLUSIONS, IMPLICATIONA AND RECOMMENDATIONS

This chapter comprises summary, conclusion and the implications of the study. It summarizes research methodology including the findings of the study. The final section provides implications of the study and recommendations for local government, policymakers and Bai farmers with suggestions for The final section provides implications of the study and recommendations for local government, policymakers and Bai farmers with suggestions for future research.

Summary

The purpose of this study is to evaluate and analyse the situation of farmer professional co-operatives and the factors influencing their organizational competence in Bajie, Anning, and to propose strategies for improving the organizational competence of farmer professional co-operatives on this basis. This study investigated the basic situation of farmer professional co-operatives by means of surveys and interviews. On this basis, the factors influencing the organizational competency of cooperatives were analysed using the regression method. Then Problems were identified and countermeasures for improvement were proposed.

Specifically, the study was designed to answer the following objectives:

1. To investigate the present situation of farmer professional cooperatives in Bajie Town in Anning city.
2. To study the level of farmer professional cooperatives competency.
3. To study the factors effecting farmer professional cooperatives competency.
4. To formulate the guideline to improve farmer professional cooperatives competency.

The study's survey methodology was used to answer Objectives 1 and 2, which focused on the description of the current situation and organizational competency levels of farmer specialised cooperatives, including the characteristics of the sample cooperatives and their members and the competency levels of cooperatives in terms of information, performance, skills and culture. Regression analysis was used to analyse the factors influencing the competency of farmer professional cooperatives, including internal factors such as income distribution and organizational structure and external factors such as the location of the cooperative and the number of cooperatives.

In this study, LuBiao street was chosen as the sampling site for the pretest sampling. LuBiao street is connected to Bajie street and its geographical location, demographic and industrial structure are very similar, therefore, it is reasonable to choose Lu Arm Town as the pretest site. The results of the pretest proved that the designed variables had high reliability and validity. Therefore, a random sample of 152 members from 26 co-operative societies was conducted in Bajie Town.

Data were collected using an interview form consisting of a structured questionnaire and an unstructured questionnaire as the primary research material to determine the current basic profile and organizational competency levels of the farmer specialised cooperatives in Bajie Town. Descriptive statistics were used to describe the data obtained and regression analysis was carried out using social science statistical methods in order to identify the predictor variables affecting the level of organizational competency of the farmer specialised cooperatives interviewed.

To ensure the validity of the content, the research questionnaire was made available to experts in the relevant fields for study. The experts were asked to provide comments and suggestions on the relevance, accuracy and appropriateness of the questionnaire. They had provided their own views and suggestions for changes, on the basis of which the questionnaire used for the study was modified and improved, and pre-tested, but not as part of the sample research.

The researchers applied the revised questionnaire to 19 members of four cooperatives in the Lu Arm Town with the test. These farmers were not part of the sampling group and the reliability and validity of the returned questionnaires met the requirements, which means that in each case all questions and items were worth retaining, indicating that the internal consistency of the questions and items in the scale was good and that the multiple choice scales were and measured, therefore, the researchers considered and retained all items of the Likert scale.

The final data was collected within the 26 cooperatives selected in Bajie Town. To obtain the data for the study, the researcher hired seven enumerators from Yunnan Agricultural University, who were trained in how to conduct practical interviews and administer questionnaires to the members of the farmer cooperatives and were assigned to the different farmer cooperatives.

The data obtained was analysed by using descriptive statistics to describe the variables in the study according to the objectives of the study. Multiple regression analysis was used to identify the predictor variables (independent variables) associated with organizational competencies.

The study also conducted group discussions to identify the current state of organizational competency, problems and factors affecting the level of organizational competency in the Bajie town Farmer Cooperative.

Major Findings of the Study

The majority of respondents were in the under 50 age bracket, with 57.9% of respondents under 50, indicating that they are currently at an age where they are engaged in agricultural production. At the same time, male producers are slightly over-represented among them, with over half of the respondents being male.

The results of a survey on the characteristics of members of professional farmer cooperatives showed that

1. The largest number of people with an education level of secondary school or below, accounting for 86.2 per cent, and 78.9 per cent of people who were general farmers before becoming members of co-operatives, while large producers and individual households only accounted for a small number, indicating that it is

necessary for co-operatives to encourage large producers and the highly knowledgeable class to participate in co-operatives, but it is not the main purpose, and the most important thing is still to encourage ordinary farmers to enter the production and operation of co-operatives, while co-operatives The existence of co-operatives should also benefit the people and the farmers, driving them to share the fruits of the co-operative's development and to achieve common prosperity one by one. More than 90% of the members of the cooperatives have been engaged in agricultural production for more than five years, indicating that most farmers are willing to join the cooperative production and operation and are more willing to accept new production methods.

2. 67.1% of households have 3-5 members, and the highest number of household members have a secondary school, vocational school and bachelor's degree, which together account for 95.4%. The proportion of households with three or fewer persons as the main worker was 77.6%.

3. The percentage of households with an average annual income of RMB 20,000-70,000 was 52.6%. The proportion of those whose main source of household income is agricultural production is 91.4%. The proportion of households with existing farmland of 3 mu or more was 84.9%. It shows that most of the farmers who participate in cooperatives are ordinary families who mainly operate as small farmers and participate in cooperatives as a way to increase their family income.

The results of the survey on the characteristics of professional farmer cooperatives show that

1. In terms of registration with the industrial and commercial sector. The registration rate of farmer cooperatives was 96.2%, and the remaining one that was not registered also had a business licence. The 26 edible rose co-operatives were mainly registered in the range of 500,000 to 2,000,000 yuan, accounting for 98% of all co-operatives. 96.2% of the co-operatives did not require a membership fee to join.

2. Co-operatives with 101-200 members are the largest, accounting for 42.3% of all co-operatives, and there is a significant size gap between co-operatives. Although the proportion of cooperatives with non-farmers is higher than that of

those with non-farmers, cooperatives with non-farmers still do not account for a minority, and even in the future, this is likely to become a trend for professional farmer cooperatives in An Ning, but the scale of edible rose farmer cooperatives in the Bajie Town of An Ning is generally small and the level of development is not high, making it difficult to form a scale advantage.

3. In terms of the cooperative's mode of operation and scope of business. Another way to expand the scale and strength of cooperatives is to extend the industrial chain to the back, but due to the limitations of agricultural technology, the extension of the industrial chain is still a point that should be taken seriously. The Co-operative may have to seek new ideas to change the old path of only processing and selling primary agricultural products, and move towards deep processing and quality development, or, as some edible rose co-operatives have done, seek the "shelter" of branded companies, such as Jiahua and Pan Xiangji bakeries, to become their back markets and achieve smooth marketing.

4. Co-operatives that grow and operate on a small to medium scale are a direct and effective way of promoting increased production and income for farmers, and this is one of the most effective ways of growing the collective rural economy in the Bajie town. Co-operatives are predominantly allocated by volume and by shares, with a combined share of 69.2%, while a small number of co-operatives have member allocations. This shows that volume based and share based distribution is the most popular method of distribution at the moment.

5. The training rate of the cooperative for members reached 92.3%, the percentage of training for members less than 2 times a year was 19.2%, 2-5 times was 76.9% and more than 5 times was 3.8%; the attendance rate of members attending the cooperative's training was 11.5% for less than 50% and 88.5% for more than 50%; the percentage of annual general meetings held for members less than 2 times was 7.7%, 2-3 times was The percentage of members who attended half of the meetings or less was 42.3%, while the percentage of those who attended more than half was 57.7%.

6. The number of full-time sales staff was 30.8% for less than 2 people, 50.0% for 2-5 people and 19.2% for more than 5 people; the rate of requiring members to master uniform production techniques and quality standards was 92.3%, which shows that the cooperatives pay great attention to the technical and quality standards of production and operation.

7. 92.3% of the co-operatives have complete and detailed records of members' product transactions, 84.6% regularly disclose their financial and operational status to all members, and 96.2 establish complete records of farmer production and product (service) transactions, which shows that the management of co-operatives is open and transparent.

8. The majority of members believe that the sales price of agricultural products in the cooperative is higher and more stable than independent sales, and that members' recognition of online sales methods is low.

9. Regarding the high demand of members for agricultural production loans, the high price of supplying agricultural production materials (farm machinery, fertilizers, pesticides, etc.) and the unified purchase of agricultural production materials (seeds, fertilizers, pesticides, etc.) by the cooperative for farmers, most of the members are very much in favour, while only a small number are more or very much in disagreement, indicating that the initial agricultural production input costs are high, while the cooperative will get lower costs and increased This indicates that the cost of agricultural inputs is high in the early stages of production, and that the co-operative will get a lower cost and an increased share of the revenue.

Discussion

Based on the construction of a comprehensive evaluation system for the organizational competency of cooperatives, this study measured the organizational competency level of cooperatives using the entropy weighting method, and on this basis empirically analysed the factors influencing the organizational competency level of cooperatives using a multiple regression model. Research Findings:

First, the theory of organizational competence proposes that organizational competence is organizational competence, which can be understood as the organic set of knowledge, skills, resources and endowments owned by members of an organization, and the distribution of knowledge, skills, resources and endowments among members of an organization is unbalanced. According to the transaction cost theory and cooperative economic theory, the farmer specialized cooperative is an organization pursuing collective interests, which improves the degree of organization through farmer union. Cooperatives can improve their bargaining power, spread the high costs of collecting personal information about farmers, and concentrate their purchases of means of production and sales of agricultural products. In this way, the market development cost and channel can be reduced, the marketing risk of agricultural products can be reduced, the price of agricultural products can be increased, and the income of farmers can be increased.

In an in-depth interview with members of cooperatives, more than half of them mentioned that most of their household income comes from the sale of agricultural products, but in actual production, the purchase price of agricultural production means is too high, which brings great pressure to agricultural production. However, after joining the farmers' specialized cooperatives, the cooperatives provide production assistance to the members, which greatly alleviates the pressure of agricultural production. Meanwhile, through cooperatives, the purchasing of means of production is not only more convenient, but also more favorable prices. (In-depth interview, Anning Bajie, October 2022)

In addition to solving the problems existing in the production of agricultural products, farmers' specialized cooperatives have also solved the problem of the sale of agricultural products through the unified sale of products organized by cooperatives. Ms. Luo of Anning Xianghua Rose Farmers' Professional Cooperative said, "The cooperative can guarantee the purchase and sale of roses without having to go out to find a market by itself. It is more convenient to sell, and it can guarantee the sale of roses in the event of the epidemic." (In-depth interview, Anning Bajie, November 2022)

Ms. Yuan of Gaoqiao Edible Rose Cooperative of Anning Bajie, Mr. Sun of Anning Junqi Professional Edible Rose Cooperative and other members mentioned that the cooperative has improved the production and sales skills of its members through various trainings, which has better promoted the increase of income, and expressed their willingness to participate in various skills training in the future. (In-depth interview, Anning Bajie, October 2022)

It can be seen from the comprehensive in-depth interview that the organizational competence performance of cooperatives is mainly affected by the skills and performance of cooperatives, and most of the members pay more attention to the production cost of agricultural products, the sale of agricultural products and the development of relevant skills training. Therefore, the promotion of marketing skills of agricultural products, the control of production costs of agricultural products and the active development of relevant skills training are important ways to improve the competency level of cooperative organizations.

Second, The Spencer puts forward the iceberg model, in which ability is divided into six elements, namely knowledge, skill, value standard, morality, trait and motivation. By combining the iceberg theory elements with the competency level of cooperatives, in-depth interviews are conducted with the members of cooperatives on the influencing factors of the competency level of cooperatives. Most members mentioned in the interviews that natural conditions, government policy support for cooperatives, government financial support for cooperatives, the ability of cooperative managers, cooperative management conditions, cooperative system setup and other factors have an impact on the performance of cooperative competence level. After the collection of keywords, members were interviewed about the mechanism and magnitude of the keywords, and the influencing factors were further divided into internal factors and external factors. The members generally believed that the internal factors were the main factors affecting the competency of cooperatives, and showed the desire to regulate the operation of cooperatives and develop cooperatives. (October -- November 2022, Anning Bajie, in-depth interview)

Third, workplace learning theory states that workplace learning is a method of acquiring knowledge and skills through direct or indirect training as skilled workers participate in work practices. Billet divides knowledge into three categories, including declarative knowledge, procedural knowledge and tendentious knowledge. Personal learning in the workplace is mainly informal learning. Learning is an ongoing and inevitable process in the workplace. The degree of learning depends on the type of activity they participate in and the instruction they receive, including the type of individual involvement, the direct and indirect instruction they receive, the continuity of their involvement, and the relevance of their existing body of knowledge (including interests, personal preferences). Research shows that employees' learning in the workplace has an impact on the development of the organization. At the same time, humanistic learning theory, training demand theory and motivation theory hold that individual potential can be self-realized through some way such as training, and the structure and process of self-system restricts autonomous learning.

Farmers' professional cooperatives provide members with a workplace where they can acquire knowledge and skills, directly or indirectly, and achieve value through a variety of channels. "The cooperative is doing well now, and it gives us a chance to expand," said Lu. Mr. Li of AnningJinghui Rose Professional Cooperative said, "The development situation of the cooperative is relatively good. I hope the cooperative can further develop and grow, improve the ability to resist risks, and drive more members to become rich." Ms. Liu of Anning Hongsheng Agricultural Technology Co., LTD. : "I hope the cooperative can standardize its internal management, expand its production scale and grow stronger". (In-depth interview, Anning Bajie, November 2022)

It can be seen from the in-depth interview conclusions that among the internal factors, the internal management of cooperatives and the overall situation of cooperatives have significant positive effects on the competency level of cooperatives, among which the internal management has a greater impact, indicating that the key to improve the competency level of cooperatives is to pay attention to the internal management of cooperatives and improve the overall development level of cooperatives.

Fourthly, incentive mechanism is an important means in the governance of cooperatives. The operation of cooperatives will involve many subjects, including managers, members and enterprises, who have different needs for their own interests. Therefore, it is necessary to properly handle the relationship between stakeholders and fully mobilize their enthusiasm.

From the perspective of government incentives, Mr. Song of Anning Green Valley Garden Planting Professional Cooperative said, "I hope that the cooperative can continue to expand the scale, the government will increase the support to the cooperative, and the preferential policies will be implemented." "If the government can increase its support for cooperatives, improve transportation conditions, and lower the prices of production materials such as pesticides and fertilizers, it will be a great help to promote the development of cooperatives," said Ms. Yu of Anning Evers Rose Farmers' professional cooperative. Mr. Yu of Anning Shengyuan Planting Professional Cooperative: "We hope the government can adjust the price and form a community of interests"; From the perspective of enterprise motivation, most members and cooperative presidents mentioned that they hoped to establish long-term and stable cooperative relations with enterprises and obtain financial support from enterprises to a certain extent, so as to promote the development and business expansion of cooperatives. From the perspective of managers' incentives, many cooperatives, such as Anning Bajie Gaoqiao Edible Rose Cooperative, Anning Xianghua Rose Farmers' Professional Cooperative and Anning Bajie Flower Fragrance Edible Rose Professional Cooperative, all mentioned in the interview process that cooperative managers should conduct more skills and technical training to continuously improve the management level of cooperative managers and the production and sales level of their members. From the perspective of membership motivation, Mr. Yu of Anning Junqi Food Professional Cooperative said, "I hope the cooperative can set protection prices for agricultural products, so that members can have confidence in planting and managing roses well." (October -- November 2022, Anning Bajie, in-depth interview)

Among the external factors, regional conditions and cooperative operation mechanism are both important influencing factors to improve the competency level

of cooperative organizations, and the regional conditions are more influential, indicating that while paying attention to the internal factors, we should also pay attention to the development of external environment, improve the operation mechanism of cooperatives and other external factors.

Implications

The impact of farmer level of education on organizational competencies

The education level of the members of the farmer cooperatives in Bajie Town is generally low, and there is a phenomenon of low acceptance of new technology and new ideas by the members, who are unable to use the production materials provided by the cooperatives correctly and efficiently. The members have a strong reliance on traditional experience and are influenced by long-standing traditional business concepts, making it difficult for them to adapt to the needs of modern agricultural production. In addition, farmers in the family business system are accustomed to single-family labour production and lack the awareness to cooperate with other members of the community. Due to the influence of smallholder ideology, farmers mostly consider short-term benefits. If the co-operative does not see benefits in the short term, it will discourage farmers from participating in co-operative production and business activities and restrict the development of the co-operative. Although they have many years of experience in farming, new technologies and ideas are introduced with the establishment of co-operatives, and failure to accept new knowledge and production skills can lead to a waste of co-operative resources and can also dampen the enthusiasm of members. It is therefore essential to raise the level of education of farmers in order to improve organizational competencies.

The impact of management talent on organizational competency

Although the leaders of the farmer cooperatives in the Bajie Town have certain production knowledge and practical experience, they are generally poorly educated and lack professional skills such as management, and in this era of rapid

information change it is not possible to manage a cooperative based on experience alone. Although some managers of professional cooperatives are responsible and actively organise the participation of members in their daily production and business activities, they lack the ability to promote and apply new technologies, build brands and broaden sales channels, and ultimately fail to improve the economic efficiency of the cooperative[4]. Therefore, it is important to train enough management personnel to improve organizational competence.

The impact of brand awareness on organizational competencies

The marketing of agricultural products is mostly based on the farmer own production experience and lacks modern marketing concepts, which need to be acquired through in-depth study. Many farmer co-operatives are one-way and mechanical, with limited ability to obtain the latest market information and a lack of understanding of consumer needs. There is a lack of awareness of brand building and management in the sales process of agricultural products, and a lack of awareness of the importance of brand building. Most farmer co-operatives are small in scale, and their production is mainly planting and primary processing, with little professionalism. They do not pay attention to brand building, and it is difficult to enhance the added value of their products and create their own brands by selling in the traditional way. Therefore, it is important to develop brand awareness and focus on the development of cooperative brands in order to improve organizational competencies.

The impact of financial management systems on organizational competencies

Financial management is not standardised. Some of the eight street farmer professional co-operatives basically do not have professional financial and accounting staff, standardised financial and accounting accounts, inadequate financial management supervision and control mechanisms, and limited financial management staff in financial management, which can affect the development of co-operative production and business activities, and members may also be in conflict due to the financial chaos of the co-operative, thus affecting the unity and production

enthusiasm of the members. The unreasonable use of funds can lead to half-measures and, in serious cases, financial crises, ultimately limiting the development of cooperatives. The difficulties in raising funds and the lack of financing channels for professional farmer cooperatives, as well as the need for innovative financing methods. For a long time, farmer professional cooperatives have neglected to pay attention to financial management, which has limited the space for the development of cooperatives. Therefore, a sound and standardised financial management system must be established to enhance organizational competency.

The impact of democratic decision-making systems on organizational competencies

Some of the eight Town farmer professional cooperatives do not have a sound system of democratic decision-making, the rights and obligations of members are not clear, in the operation and management process of the cooperative is often the manager or the capital of large households to say what they want, resulting in the loss of confidence of the members, do not care about the development of farmer cooperatives, the cooperative this and farmers do not really form a community of shared interests and shared risks. The by-laws of farmer cooperatives have become formalistic and many rules and regulations are not really implemented. Some by-laws are copied from other places or decided by the managers themselves, without taking into account the actual situation of the co-operative and discussing with the co-operative members. This can even lead to a rebellious attitude among members, which can be a safety hazard for the development of the cooperative. Therefore, it is important to establish a democratic decision-making system that is standardised and rationalised to enhance organizational competence.

Recommendations

This paper measures the level of organizational competence of co-operatives by constructing a co-operative organizational competence evaluation index system, and explores the influencing factors of co-operative organizational competence from both internal and external factors. Through this paper, the following countermeasures are proposed, with a view to providing useful reference for enhancing the competitiveness of cooperatives.

Internal factors

Pay attention to the internal factors that affect the organizational competency of cooperatives. Establish a sound organizational structure and a reasonable income distribution system, so that when the distribution system is adjusted and improved, the interests of the members are effectively put in the first place, and risks are shared and benefits are shared to ensure that the members can get the benefits they deserve[9]; broaden the financing channels of farmer professional cooperatives, strengthen the ability of cooperatives to absorb funds, and promote multiple ways and channels to absorb funds in order to ensure that there are sufficient funds for the development of cooperatives. To create a trademark belonging to their own co-operatives as soon as possible, learn and draw on the good experiences of other co-operatives and combine them with the special characteristics of farmer professional co-operatives to create a marketing model and brand that is in line with their own development. Strengthen the skills training of cooperative members, especially the training of agricultural marketing skills using the internet. In addition to training in agricultural production skills for co-operative members, the necessary training in internet marketing is also required to improve the level of competence of the co-operative organisation. In addition to training the members in agricultural production skills, training in online marketing is also necessary. The development of an online marketing plan for agricultural products in line with the society's needs will be accelerated, ranging from short video marketing to WeChat marketing to create an online promotion model. Through the

improvement of these internal factors, it can effectively improve the members' participation in cooperative matters, stimulate the vitality of cooperative development, and continue to develop and expand the cooperative.

External factors

We should pay attention to the external factors affecting the competence improvement of cooperatives, and continue to provide policy, financial and legal support to create a favorable external environment for the development of cooperatives. For example, focus on external factors that affect the competence of cooperative organisations to improve. Improve the city's agricultural logistics system, cooperate with express logistics companies, broaden distribution channels and reduce unnecessary links in the circulation process; actively join other co-operatives in cooperating with rural logistics outlets and urban logistics outlets to continously expand and optimise the logistics system; broaden the marketing channels for agricultural products, and further explore other marketing channels in addition to traditional sales methods; extend the industrial chain, take into account offline The development of the online market should be carried out together, the industrial structure should be reasonably optimised, the links in the industrial chain should be unblocked, the development costs of cooperatives should be reduced and the competitiveness of cooperatives should be improved.

Government

The government plays an irreplaceable role in the development of farmers' professional cooperatives. In the future, the government should actively introduce and implement support policies for farmers' professional cooperatives, provide them with stable financial support, and give play to the leading role of the government to encourage and attract other social entities to support the development of cooperatives, striving to provide a fairer competitive environment for farmers' professional cooperatives, use policy support to provide sufficient organizational competence development space for cooperatives.

Cooperative

In addition to relying on external support provided by the government, the improvement of the organizational competence of farmers' professional cooperatives largely depends on the efforts of the cooperatives themselves. In the development process of the farmers' professional cooperatives in Anning Bajie Town, it is necessary to establish a standardized and reasonable operating mechanism and system construction, focus on the standardized construction of cooperatives, maximize their own development momentum, and reduce dependence on external forces such as the government. Only by doing a good job in the standardized construction of cooperatives can we reflect the essential attributes of cooperatives, better adhere to the purpose of serving their members, strengthen the training and guidance of cooperative directors and members, pay attention to the cultivation of talents within the cooperatives, and constantly inject vitality into the cooperatives, thereby promoting the improvement and development of the organizational competence of cooperatives.

Farmer

As an important component of farmers' professional cooperatives, the competence of farmers' professional cooperative members is closely related to the organizational competence of cooperatives. Currently, the members of the farmers' professional cooperatives in the Anning Bajie Town are older and have a low level of mastery of professional technology and skills, which to some extent restricts the development of the competency of the cooperative organization. Therefore, in the future development, it is necessary to actively promote the improvement of the cooperative members' own abilities, cultivate a group of talents who understand operation, technology, and management, and attract external professionals to join the operation and management of farmers' professional cooperatives, so as to promote the development of the organization through individual development, and promote the improvement of the organizational competence of farmers' professional cooperatives through the improvement of the members' abilities.

Recommendations for Future Research

In the social context of new urbanization and agricultural modernization, research on how farmers' professional cooperatives can improve their organizational competence through multiple forces to achieve sustainable development of farmers' professional cooperatives will become the focus of future research. This article has initially constructed an evaluation system for the organizational competence of farmers' professional cooperatives, and analyzed and evaluated the competency level of 26 farmers' professional cooperatives in the Bajie Street of Anning. Although there are still certain limitations, it can still provide a certain basis for the development and training of farmers' professional cooperatives in the future. In the future, the competency of the professional farmer cooperative organization of Anning bajie can be improved from the above aspects.

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APPENDIXS

The Design of Questionnaires on the organizational competence of farmer professional cooperatives

Interview outline (For Head of cooperative)

Name of Cooperative:

Cooperative location:_____ County_____ township_____ village

I. Basic information of cooperatives

1. Is the cooperative registered in administration for Industry & Commerce? When was the cooperative established?

2. What is the registered capital of the cooperative? How much is the membership fee of the cooperative? What are the entry and exit rules of cooperatives?

3. What is the number of members of the cooperative? Where do the members of the cooperative mainly come from?

4. What is the total number of core personnel in the cooperative? What is the total number of ordinary members of the cooperative? What is the number of farmers driven by cooperatives?

5. What is the proportion of members other than farmers in the number of cooperative members?

6. How many member meetings does the cooperative hold every year? What is the total number of cooperative members attending the general meeting?

7. Does the cooperative have complete and detailed transaction records of member products? Does the cooperative regularly disclose its financial and operating status to all members? Does the cooperative establish complete production records and product (service) transaction records of farmers?

II. Operation status of cooperatives

8. The main mode of operation of cooperatives is as follows:

○ Processing type ○ Warehousing services type

○ Information technology type ○ Transportation and sales type

○ Services type ○ Production, processing and sales of integrated type

○ Other

9. The main business scope of cooperatives is as follows:

○ Rough processing of agricultural products ○ Sales of agricultural products

○ technical service ○ Sales of seedlings, pesticides and agricultural film

○ other

10. What is the planting area of the cooperative? What is the average annual output of cooperative products? What is the average income per mu of cooperative land?

11. What is the annual turnover of the cooperative? What is the annual profit of the cooperative? How to distribute the income of cooperatives?

12. How much is the cooperative's annual investment in major projects (such as facilities, equipment purchase, etc.)? What is the price of the land leased by the cooperative? (unit: yuan / acre * year)

13. What are the main types of fixed assets owned by cooperatives? What is the total value of fixed assets owned by cooperatives?

14. What are the main product types of cooperatives? Does the cooperative have a unified brand? How many full-time salesmen does the cooperative have?

15. Does the cooperative require its members to master unified production technology and quality standards?

16. Will the cooperative train its members? How many times a year does the cooperative train its members? What is the attendance rate of members participating in cooperative training?

III Views on cooperatives

17. What are the rules and regulations of cooperatives?
18. What are the risk prevention and control mechanisms of cooperatives?
19. What are the supervision mechanisms of cooperatives?
20. What are the incentive mechanisms of cooperatives?
21. What are the restrictive factors that affect the development of cooperatives?

Survey Questionnaires

Note: First of all, thanks for your replying to this questionnaire, while you are busy with your daily life. Your personal information is only used for academic purpose and will be taken as strictly confidential.

Instruction: The information from this survey is used for academic research. Your responses are voluntary. Answer each question to the best of your ability. Read each item thoroughly before filling in the appropriate answer

Part 1: Demographic and Other Variables

Please mark√ in front of your best answer

Farmer professional cooperatives (hereinafter referred to as cooperatives); core members of cooperatives refer to members of the board of directors, large producers, large transportation and marketing households, enterprises, etc., and other members belong to ordinary members.

1. Name of the cooperative you joined:
2. Age:
3. Gender: ○Male ○Female
4. Marital status: ○Single ○Married ○Widowed ○Divorce ○Other
5. Are you a core member: ○Yes ○No
6. Your education level:
   ○Primary school and below ○middle school ○vocational school
   ○undergraduate ○Graduate and above
7. The highest education level of your family members:
   ○Primary school and below ○middle school ○vocational school
   ○undergraduate ○Graduate and above
8. How many people are there in your family:
   ○Less than three ○Three ○Four ○Five ○More than Five

9. How much labor do you have in your family:

○Less than three ○Three ○Four ○Five ○More than Five

10. What is the average annual income of your family:

○Less than 20000 yuan ○20000-30000 yuan ○40000-50000 yuan

○60000-70000 yuan ○More than 70000 yuan

11. What are the main sources of your family income:

○Income from agricultural production ○Income of local workers

○Income of migrant workers ○other

12. How long have you been engaged in agricultural production:

○1-5 years ○6-10 years ○11-15 years ○16-20 years

○More than 20 years

13. What is the arable land area of your family:

○Under 1 mu ○2 mu ○3 mu ○4 Mu ○More than 5 mu

14. How do you buy means of production:

○Market buying ○Online shopping

○Government helps buy ○Cooperative purchase

15. How do you sell agricultural products:

○Market self sale ○Order sales ○Online sales ○Cooperative acquisition

○Government procurement

16. How far is your farmland from the nearest farm produce market:

○Under 10 km ○10-20 km ○20-30 km ○30-40 km ○More than 40 km

17. Before you become a member of the cooperative, your main identity is:

○Ordinary farmers ○Big producers ○Migrant workers returning home

○Enterprise personnel ○Individual business ○Township Department staff

○Other

18. If the cooperative arranges production uniformly, the way to obtain labor force is as follows:

○The members of the commune become shareholders through labor service

○Employees of cooperatives ○Own employees of cooperatives ○Other

19. The main difficulties in the development of cooperatives are as follows::

○Lack of new technology and new projects ○Difficult to sell products

○Lack of funds ○Lack of excellent management talents

○The future development direction is unclear

20. What kind of support do you think farmers' professional cooperatives need most:

○Financial support ○New agricultural technology (project)

○Market information ○Management knowledge ○Professionals

Part2: your opinions

Outside cooperative and Inside cooperative

Please mark √ in front of your best answer

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
Regional situation		1	2	3	4	5
A1	Bajie town has good natural conditions					
A2	The natural conditions of Bajie town are suitable for planting edible roses					
A3	The natural conditions of Bajie town are suitable for growing vegetables					
A4	The natural conditions of Bajie town are suitable for growing fruits					
A5	The natural conditions of Bajie town are suitable for the development of aquaculture					
A6	Bajie town is rich in resources					
A7	Bajie town is near Kunming city					
A8	Rapid economic development of Bajie town					
A9	Bajie town has a large population					
A10	There are many folk activities in Bajie town					

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
A11	The villagers in Bajie town have a tradition of planting edible roses					
A12	Villagers in Bajie town have the tradition of processing edible roses					
A13	A large number of cooperatives in Bajie town (External Competitiveness)					
External Program		1	2	3	4	5
B1	I understand the law of farmers' professional cooperatives					
B2	I know that the law on Farmers' professional cooperatives was revised in 2018					
B3	I think the government's policy support for cooperatives is strong					
B4	I think the government's financial support for cooperatives is strong					
B5	I understand the conditions for the establishment of cooperatives					
B6	I understand the registration process of cooperatives					
B7	I understand the rights and obligations of members					
B8	I know the Federation of farmers' professional cooperatives					
B9	I understand the merger and division of cooperatives					
B10	I understand the dissolution and liquidation of cooperatives					
Cooperatives situation		1	2	3	4	5
C1	Bajie town has a large cooperative base					
C2	Bajie town cooperatives all have origin marks					

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
C3	Bajie town cooperatives have their own trademarks					
C4	Bajie town has a high degree of participation of cooperative members					
C5	The proportion of villagers in Bajie town participating in cooperatives is high					
Internal Operating		1	2	3	4	5
D1	Internal management standard of Bajie town cooperative					
D2	The organizational structure of Bajie town cooperative is complete					
D3	Bajie town cooperative has sufficient funds					
D4	Bajie town cooperatives can raise funds in various ways					
D5	The income distribution of Bajie town cooperative to its members is reasonable					
D6	The income distribution of Bajie town cooperative to the chairman is reasonable					
D7	The income distribution of core members of Bajie town cooperative is reasonable					
D8	Bajie town cooperative provides good service conditions					

Organizationl Competency

Please mark √ in front of your best answer

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
Information of expectation		1	2	3	4	5
E1	I know about cooperatives.					
E2	I think introductions from family and friends are an effective way to learn about cooperatives					
E3	I think government publicity is an effective way to understand cooperatives					
E4	I think joining cooperatives is an effective way to understand cooperatives					
E5	I hope to continue to join the cooperative.					
E6	I think the barriers to entry cooperative are lower					
E7	I am satisfied with the amount of registered capital of the cooperative.					
E8	I want to increase the number of members of the cooperative.					
E9	I hope to increase the total fixed assets of cooperatives.					
E10	I am satisfied with the area of my land.					
E11	I hope the cooperative will expand the base area.					
E12	I think the establishment of the cooperative is in line with legal procedures.					

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
E13	I think the increase or decrease in the number of cooperatives is in line with legal procedures.					
E14	I think the meeting of members of the cooperative is in line with the regulations.					
E15	I think the record of the meeting of members of the cooperative is detailed.					
E16	I think the meeting of the Council and the board of supervisors of the cooperative is in line with the provisions of the articles of association.					
E17	I think the minutes of the board of directors and the board of supervisors are detailed.					
E18	I think the financial records of the cooperative are detailed.					
E19	I think cooperatives disclose their finances regularly.					
E20	I think there is a big difference in shareholding ratio among members of cooperatives.					
E21	I think cooperatives have a fair management system.					
E22	I hope the leader of the cooperative belongs to a large grower.					
E23	I am satisfied with the core members of the cooperative.					
E24	There are many other cooperatives in my village.					

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
E25	The village where I live has convenient transportation.					
E26	I think the local infrastructure is good.					
E27	Many people in our village have joined the cooperative.					
E28	The government encourages and supports farmers to join cooperatives.					
E29	The government encourages and supports the development of cooperatives.					
E30	I am satisfied with the role played by the government in the development of cooperatives.					
E31	I am satisfied with the development of the cooperative.					
E32	I think the local economic development level is very good.					
Performance of expectation		1	2	3	4	5
F1	The business income of cooperatives is increasing.					
F2	I think the profitability of the cooperative is quite satisfactory compared with the expectation at the beginning of its establishment.					
F3	The machinery and equipment used by cooperatives for processing are increasing.					
F4	I hope that the scale of cooperatives will continue to expand.					

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
F5	I joined the cooperative makes my family's annual income has been increasing.					
F6	I'm satisfied with the increase in my family's annual income.					
F7	The income of agricultural products accounts for a large proportion of the total household income.					
F8	The income of cooperative members is different from that of local non members who produce similar agricultural products.					
F9	I am satisfied with the selling price of agricultural products.					
F10	I think the price of agricultural products is greatly affected by the market.					
F11	I think the passive range of local agricultural product prices is large.					
F12	I have a big demand for agricultural production loans.					
F13	I think the price of agricultural means of production (agricultural machinery, chemical fertilizer, pesticide, etc.) is high.					
F14	A large proportion of cooperatives purchase agricultural means of production (seeds, fertilizers, pesticides, etc.) for farmers.					
F15	I think the proportion of agricultural products sold by cooperatives is large.					
F16	I think the proportion of online sales of cooperatives is large.					

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
F17	After I joined the cooperative, I solved the problem of production funds.					
F18	After I joined the cooperative, the production cost of agricultural products decreased.					
F19	I hope to continue to expand the scale of production.					
F20	I paid the more membership fee when I joined the cooperative.					
F21	I am satisfied with the current income distribution of the cooperative					
F22	I think it is the best way to distribute the surplus of the cooperative to distribute all the shares.					
F23	I think it is the best way to distribute the surplus of cooperatives according to the transaction volume with them					
F24	I think it is the best way to distribute the surplus of cooperatives to distribute the shares (more than 60%) and transaction volume					
F25	I think cooperatives provide income protection and improve members' ability to resist risks.					
F26	I think the most important factor in the external environment that affects the performance of cooperatives is the natural environment.					

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
F27	I think the working environment is the most important factor that affects the performance of cooperatives.					
F28	In my opinion, the most important factor in the internal conditions affecting cooperative performance is professional skills.					
F29	In my opinion, teamwork is the most important factor that affects the performance of cooperatives.					
F30	I think the current land circulation mode is reasonable.					
F31	I am satisfied with the current farmland infrastructure construction.					
F32	I think cooperatives have a positive impact on local economic and social development.					
Skills of expectation						
G1	I have mastered the technology of agricultural production.					
G2	I have mastered the technology of pest control.					
G3	I have mastered the technology of using chemical fertilizer and pesticide.					
G4	I will use the Internet to sell products.					
G5	I will adjust the selling price according to the market.					
G6	I will use agricultural products to promote sales.					
G7	I am satisfied that the cooperative has its own brand.					

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
G8	I think it is important for cooperatives to provide farmers with unified product standards and technical guidance.					
G9	The number of professional skills training for members of cooperatives is more.					
G10	There are many times that cooperatives call on their members to carry out management and operation knowledge training.					
G11	I am satisfied with the service provided by the government's Agricultural Technology Department.					
G12	I am satisfied with the production service provided by the Stakeholder enterprise.					
G13	I am satisfied with the services provided by rural financial organizations.					
G14	I hope the cooperative will organize training in production technology.					
G15	I hope the cooperative will organize training in network marketing.					
G16	You think the competitive advantage of cooperatives is product advantage.					
Culture of expectation		1	2	3	4	5
H1	I understand the development of cooperatives.					
H2	I went through a difficult period of cooperative development.					
H3	I understand the development goals and management methods of cooperatives.					

No.	Expectation	Degree of opinion				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
H4	I understand the vision of the cooperative.					
H5	I understand the core values of cooperatives.					
H6	I think the cultural value of cooperatives is very important.					
H7	The main difficulty in the development of cooperatives is the lack of excellent management talents.					
H8	I think the most important explicit ability of the core members of cooperatives is the ability of management.					
H9	I think the most important recessive ability of the core members of the cooperative is the spirit of cooperation.					
H10	The key factor for the development of cooperatives is the excellent director (leader).					
H11	I'm very satisfied that I joined the cooperative.					

Part 3: Interview questions

1. Do you think the cooperative is in good condition? According to the actual situation of the cooperative, some suggestions are put forward.

Please answer the questions:

2. What changes have the development of cooperatives brought to you or your family in recent years?

Please answer the questions:

3. Do you think there are some places you are satisfied with?

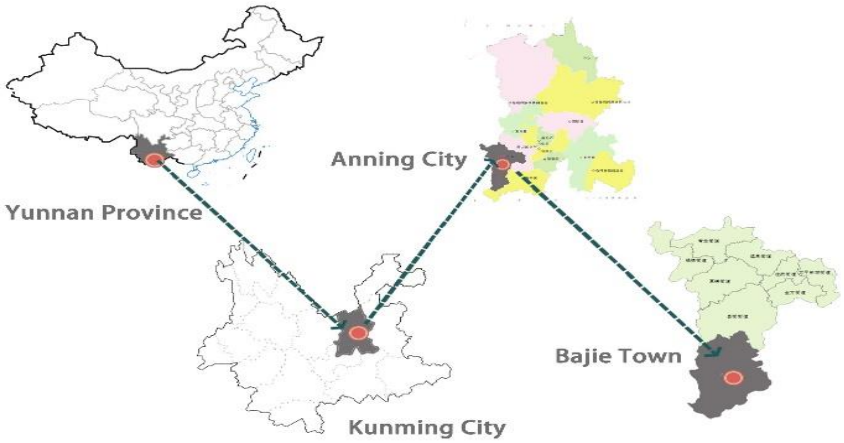
Please answer the questions:

4. What policy do you want the government to introduce for the development of cooperatives?

Please answer the questions:

5. What do you feel most about the cultural value of cooperatives?

Please answer the questions:

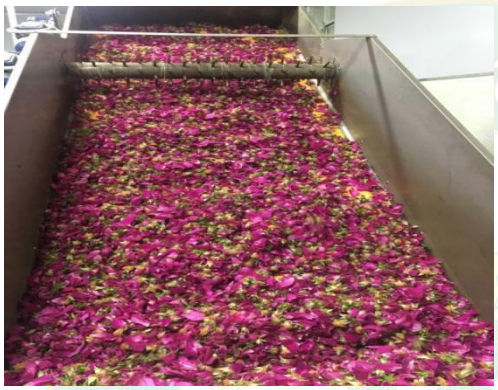


Location of Bajie Town, Anning City, Yunnan Province, P.R. China

Bajie Town rose production

Bajie Town rose production base


Pick




sorting


Refrigerated preparation


storage packing

rosettes

Rose tea

Introduce

Group photo

investigate and survey


investigate and survey

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