

Essay

A Study on Smallholder Farmers' Willingness to Sustain Cooperation with New Farmers—Analysis Based on the Perspective of Smallholder Farmers' Satisfaction

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Abstract: In the context of rural revitalization, it is important to promote the establishment of lasting cooperation between small farmers and new farmers to drive farmers to increase their income and achieve common prosperity. Based on the research data of 342 small farmers in six provinces, the article empirically analyzes the willingness of small farmers to continue cooperation with new farmers in the future from the perspective of satisfaction using an ordered logistic model. The research results show that small farmers' satisfaction with the benefit linkage model, with the benefit distribution, and with benefit dispute handling positively and significantly influence small farmers' willingness to continue cooperation with new farmers in the future. For every 1% increase in satisfaction with the benefit linkage model, the probability of continuing to cooperate with new farmers in the future increases by 9.40%, and for every 1% increase in satisfaction with the benefit distribution and satisfaction with benefit dispute handling, the probability of continuing to cooperate with new farmers increases by 7.30% and 9.40%, respectively. Accordingly, this paper puts forward policy suggestions such as respecting the choice of interest linkage model of small farmers, improving the benefit distribution mechanism, and handling cooperation disputes reasonably, in order to improve the satisfaction of small farmers' cooperation, promote the construction of lasting cooperation between small farmers and new farmers, and build a rural community of interest.

Keywords: willingness to sustain cooperation; satisfaction; smallholder farmers; linkage of interest



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1. Introduction

The 20th National Congress of the Communist Party of China, to be held in Beijing in 2022, is a very important congress held at a critical moment when the whole Party and all ethnic groups are embarking on a new journey of building a modern socialist country and marching toward the second-century goal. At the 20th National Congress of the Communist Party of China, it was proposed to comprehensively promote rural revitalization and actively cultivate new agricultural business entities. The key to rural revitalization is industrial revitalization. As a traditional agricultural country, China is still dominated by scattered small farmers, with low production efficiency and low mechanization level, which cannot realize large-scale production.

At present, the definition of new farmers in academic circles is mainly divided into “three new”, “Internet+”, and the whole industry chain, and Xiangdong (2014) believes that new farmers have become an important new force in the field of agriculture under the current situation, and can be defined into three categories: first, a new group of farmers, who take agriculture as their occupation; second, the new agricultural industry, where they no longer continue the traditional practices but adopt new production and business methods; third, new rural cells—this group is mainly active in rural areas [1]. Xuchu (2015) argues that the fundamental characteristic of new farmers is not to engage in agriculture

but to use new production methods, mainly embodied in “Internet + agriculture” [2]. Hongyu (2016) argues that the concept proposed by the Ali Research Institute is too broad, and he believes that new farmers mainly refer to agricultural producers and operators who uphold the concept of ecological agriculture, use Internet thinking, and aim to provide safe agricultural products and improve agricultural value [3]. Chao, Jinyuan, and Biao (2021) define new farmers as agricultural management subjects who can use “Internet + new media” tools to produce and sell high-quality agricultural products and can play a leading and exemplary role [4]. Zhixiong (2015) considers new farmers as the application and innovation of environmentally friendly and resource-saving “ecological production methods” based on ecological consciousness, and refers to natural persons and enterprises engaged in agricultural production and product marketing, or providing services for production and marketing along the entire agricultural production chain [5]. Lu and Xiang (2021) consider new farmers as agricultural practitioners with scientific and cultural qualities and modern agricultural production skills [6]. Tenglong (2022) considers new farmers as a group of young entrepreneurs who are engaged in the production, processing, and distribution of special agricultural products through large-scale agricultural planting or breeding, which is the “blue ocean” of agricultural and rural entrepreneurship. This study finally considers new farmers as an entrepreneurial group of people who used to live or work in urban areas, who, on a voluntary and selective basis, uphold the concept of ecological agriculture and apply Internet thinking, and who come to rural areas in different forms to carry out agriculture-related production and business activities [7].

The World Bank defines farmers with a land operation scale of less than 30 mu as small farmers, and Qiuju and Xiaozong (2021) define the concept of small farmers based on the size of land operation scale, and agree that small farmers are independent business subjects engaged in agriculture. Secondly, defined from the production and operation characteristics [8], Guo et al. (2018) also pointed out the main labor force of smallholder family members, who are independent and autonomous in their production and operation through independent decision making under the external constraints of natural resources, land, and other factors, and will consider their basic needs first. In addition to the above two approaches, from the perspective of farmers’ income [9], Xiaoyang and Qinghai (2018) divided smallholder farmers into three categories: full-time farmers, part-time farmers, and non-farmers. From the perspective of smallholder farmers in the plantation industry [10], Dong (2022) considered smallholder farmers as unincorporated agricultural business entities with the household as the production unit [11], dominated by family labor, low agricultural productivity, and the absolute right to use the land used for agricultural production. In the new context, this paper argues that the most basic provisions of smallholders should be defined as production and management organizations, i.e., agricultural microeconomic organizations that organize production and management activities by production factors in a certain way with the family as the unit. Small farmers who carry out production and operation in the traditional way are traditional small farmers, and those who carry out production and operation in the modern way are modern small farmers.

Cooperation is a joint action, a means of mutual cooperation between individuals and between groups to achieve a common purpose. The cooperation between new farmers and small farmers is also the same. They make reasonable use of the factor resources and advantages possessed by both sides to promote the income of both sides, optimize the allocation of resources, and cooperate with each other for agricultural production. New farmers often use family farms, farmers’ cooperatives, leading agricultural enterprises, and other organizational vehicles to cooperate with small farmers for interests. In the process of driving rural revitalization, new farmers and small farmers have formed a variety of interest linkages such as buyout, contract, cooperative, entrepreneurship, and shareholding. They gather loose small farmers through rural entrepreneurship and provide farmers with effective market information and technical support, through contracts, orders, shares, and other forms, to continuously reduce the risks to small farmers in production and management and to achieve agricultural efficiency and increase farmers’ income. The

cooperation between small farmers and new farmers can greatly improve the previous situation of small farmers' scattered operation, which is of great significance to China's agricultural modernization and agricultural industrialization.

However, in the specific practical process, due to the lack of an effective linkage mechanism that connects the interests of both parties, there are also many problems in the cooperation between new farmers and small farmers. For example, the cooperation between new farmers and small farmers is unstable, and the interest linkage mode is mostly loose; new farmers tend to connect long-term benefits while small farmers focus on maximizing short-term benefits; there is an uneven distribution of benefits between new farmers and small farmers; and there is an infringement of their own interests. The existence of these issues makes it difficult for both parties to form sustainable and effective cooperation. Small farmers may choose to terminate cooperation with new farmers in the future when their own interests are damaged during the cooperation process. Therefore, this article establishes relevant empirical models from the perspective of the satisfaction evaluation of cooperation between small farmers and new farmers under different interest linkage models, the analysis of the influencing factors of small farmers' willingness to continue cooperation, and the proposition of targeted policy recommendations based on this, in order to promote the long-term and efficient cooperation between small farmers and new farmers. The contribution of this article is the study of the relationship between the satisfaction evaluation of small farmers and their continuous cooperation. It is of great significance to improve the satisfaction of small farmers and promote continuous cooperation between small farmers and new farmers. It can effectively drive small farmers to increase income, promote agricultural industrialization, and scale development. Therefore, this study has very important theoretical and practical significance.

2. Literature Review

The establishment of cooperative relationships between small farmers and new farmers is influenced by many internal factors and external environments, and most of the cooperation between small farmers and new farmers takes the form of new agricultural management entities such as cooperatives and leading enterprises. Karli, et al., 2006 investigated the influencing factors of farmers' participation in cooperative behavior decision making in Türkiye. The results showed that the age of the head of household, education level, information access ability, planting scale, and new technology adoption were the main factors affecting farmers' participation in cooperatives [12]. Gardebroek (2010) found based on Italian farmer survey data that farmer participation in cooperatives does not necessarily mean that all agricultural products produced by them will be sold to the cooperatives, and those who do not participate in cooperatives may also choose to trade with the cooperatives [13]. Illukpitiya and Gopalakrishnan (2004) incorporated the personal, psychological, economic, and social factors of farmers' decision making into a unified analytical framework, analyzing their decision-making behavior. When analyzing the influencing factors of farmers' participation in organic farming behavior [14], Toma and Mathijs (2007) emphasized that simply considering economic factors on farmers' behavior is one-sided. Although economic factors play a decisive role in farmers' decision making, social factors such as policy, financial pressure, moral standards, and values also play an important role in farmers' decision-making behavior. Foreign scholars have also divided their research on the behavior of small farmers into different factions [15]. Austin, Willock, and Deary et al. (1998) divided the research on farmers' behavior into two categories: One is based on the assumption that farmers pursue profit maximization, using economic methods to study [16]. Rhodes (1983) pointed out that net economic benefits are a key factor affecting farmers' decision to join or leave cooperatives. The other is based on the hypothesis of bounded rationality and is studied by social psychology [17]. A typical example of using economic methods to study the behavior of farmers is the rational small-scale peasant school represented by Schultz. They assume "economic man" and "complete market information" as the basic assumptions, and make decisions based on various constraints

and goals pursued by themselves and the market to meet their own profit maximization (Willock, Deary & McGregor et al.) [18]. Later, some researchers tried to combine economic factors and social psychology factors to explain farmers' behavior and decision making.

At present, domestic scholars' research on the factors influencing farmers' willingness to cooperate includes the following aspects: individual farmers' characteristics, family characteristics, farmers' business characteristics, external market environment, and other factors. At present, domestic scholars mainly study the influencing factors of smallholder farmers' willingness to cooperate in terms of personal characteristics, family characteristics, and village characteristics of the research subjects, and they select factors such as gender, age, education level, number of family laborers, cadre status, health status, and number of family laborers to conduct empirical analysis and then determine which factors are the factors that influence smallholder farmers' willingness to cooperate. It is believed that the degree of income improvement and total household agricultural income, the service level of cooperatives, and the technical training number of cooperatives have significant positive effects on farmers' willingness to participate in cooperatives (Li Min, 2015; Guo Hongdong, 2009, Xie Qichao and Zheng Hua, 2011) [19]. Many scholars believe that the level of education is closely related to farmers' willingness to cooperate, and some scholars have found that the higher the level of education, the more inclined they are to cooperate with organizations, and the higher the awareness of farmers' cooperative organizations, the more willing they are to cooperate with cooperative organizations (Sun Yafan and Yu Haipeng, 2012; Shi Min et al., 2021) [20]. Some scholars hold a different view and believe that the influence of the years of education of household heads and the level of education on smallholder cooperation is not significant, and even the level of education has an inhibiting effect on smallholder participation in cooperation (Zhang Xiaowen, 2011; Zhang Hongyun 2009; Cai Rong and Han Hongyun, 2012, Niu Xiping, 2011) [21–23]; the willingness to cooperate is generally stronger among smallholder farmers who have experience as village cadres than general villagers, and farmers whose income mainly comes from agriculture are more willing to cooperate than those who originate from part-time farmers (Zhang Dongping et al., 2007; Zhang Su Luo et al., 2012) [24,25]. Sun and Yan (2018) concluded that low levels of trust within cooperatives, weak member capital and willingness to manage, and member trust have significant effects on the willingness to cooperate (Yang, L. She and Yang, T. (2018)) [26,27]. Taking Liquan farmers' cooperative in Shaanxi Province as a sample point, the analysis results show that farmers' knowledge and awareness of the basic knowledge of cooperative credit cooperation and government support policies also affect their enthusiasm to participate in credit cooperation to some extent.

In addition to these factors of personal characteristics and family characteristics, some scholars have also analyzed factors such as the business characteristics of smallholder farmers and market conditions. The significant effects are the degree of commercialization of the household's main agricultural products, the degree of price fluctuation of agricultural products, the degree of agricultural technology application in the sales radius of main agricultural products, the overall satisfaction with cooperatives, and the willingness of farmers to participate in farmers' professional cooperative organizations (Lu Xianghu et al., 2008; Zhang Qiwen et al., 2013; Zhao Xuan, 2021) [28]; Guo and Chen (2010) analyzed that many factors such as the area of land operated, the proportion of agricultural income, selling problems, planting history, the proportion of sales by returning large farmers, and the proportion of sales by farmers' organizations all have some influence on farmers' willingness to participate in cooperative organizations [29]. The quality of cooperation between smallholder farmers and new farmers also has a significant effect on the willingness to continue cooperation (Xiao Dingding et al. (2022)). The cooperative relationship has an inverted U-shaped effect on both cooperative quality and willingness to sustain cooperation, and from the results, cooperative quality plays a fully mediating role in the effect of the cooperative relationship on the willingness to sustain cooperation, and the mediating effect decreases with the increase in cooperative relationship [30].

There are some scholars who have conducted analysis based on the perspective of satisfaction. Qiwen et al. (2013) concluded that the overall satisfaction of small farmers with cooperatives and the impact on farmers' willingness to participate in farmers' professional cooperatives are significant [31]; Xuan (2021) concluded that the variables of farmers' personal characteristics and cognitive degree have insignificant effects, the variables of farmers' household production situation have positive effects, and the variables of personal financing situations have different signs of influence. Satisfaction in the variables of farmers' professional cooperative experience has a highly significant positive effect [32]. Hongdong et al. (2009) concluded that the income level of members, the number of years of membership, and whether the cooperative pays dividends according to shares are significant factors affecting the satisfaction of members [33]; Qichao and Hua (2011) concluded that the number of years of education of the head of household, the annual per capita income of the household, and the amount of land enrolled in the cooperative are important factors affecting the satisfaction of cooperative members. Some scholars hold different views [34]; Zhao et al. (2009), from the viewpoint of the satisfaction of participating farmers, concluded that the organization management insisted on voluntary membership and free withdrawal, held regular meetings of participating farmers' representatives, and implemented a democratic centralized management system to give priority to participating farmers and a two-way guarantee, which could effectively improve the satisfaction of participating farmers [35].

Based on the above theoretical basis, this paper proposes the following research hypotheses:

H1. *The satisfaction of smallholder farmers with the benefit linkage model, benefit distribution, and benefit maintenance has a positive impact on their willingness to cooperate in the future, and the higher the satisfaction, the higher the possibility of future cooperation.*

H2. *The experience of being a cadre is positively related to smallholder farmers' willingness to cooperate in the future.*

H3. *Smallholder farmers whose income source is mainly agricultural production have a higher willingness to cooperate in the future.*

In summary, domestic scholars have conducted some research on the willingness of small farmers to participate in cooperation from different perspectives, but most of them still analyze the influencing factors on the willingness of small farmers to participate in cooperation, while there are very few studies on the willingness of small farmers and new farmers to continue cooperation and few studies on the willingness to continue cooperation in the future from the perspective of satisfaction. And past studies have neglected small farmers' satisfaction with the distribution of benefits and satisfaction with disputes in the process of cooperation. Therefore, this paper focuses on the evaluation perspective of small farmers' satisfaction to explore its influence on small farmers' willingness to cooperate in the future, focusing more on the willingness to sustain cooperation, in order to provide policy reference for promoting the establishment of long-term and effective cooperation between small farmers and new farmers.

3. Data Sources and Descriptive Analysis

3.1. Data Sources

The data used in this study came from a research questionnaire and data compiled by the research team of the National Social Science Foundation of China project, "Research on the mechanism of linking the interests of new farmers and small farmers based on the perspective of benefit sharing". Typical sampling was the sampling technique used in this research, which is a conscious selection of a certain number of representative sampling units from the total population to be measured according to the purpose of the research study, or at least where the units selected are required to represent the majority of the total population. This sampling method is easier to describe. The research team selected six provinces in China to conduct research on new farmers in 2021. In order to ensure

the scientific nature of the data, the research selected six typical provinces in the eastern, central, and western regions of China, including Zhejiang, Jiangsu, Anhui, Henan, Gansu, and Sichuan, according to the degree of economic development, as the research sites. The reason why the research team selected the new farmers in these six provinces as research subjects was for the scientific and universal nature of the data. In the eastern region, Jiangsu, Zhejiang, and Shanghai drive the economic development of the whole region and have the most research value; however, Shanghai is a commercial metropolis and its agricultural base is too weak, so only new farmers in Zhejiang and Jiangsu were selected as research subjects; in the central region, Henan Province has a large number of people and the largest agricultural population in China. Anhui is located in the hinterland of East China, near the sea and adjacent to the river, with rich agricultural resources and a large proportion of agricultural products, so it is typical. In the western region, Sichuan Province, as the land of Tianfu, is fertile and has a strong agricultural base, and Gansu Province, which spans humid, semi-humid, arid, and semi-arid areas, has complex geographical conditions and diverse agricultural development; therefore, Sichuan and Gansu were selected as the research subjects in the western region. For the data in Zhejiang Province, the research team used the field research mode and, with the help of the Zhejiang Provincial Department of Agriculture, visited the new farmers in each region of the province, spent a lot of time and energy, researched the data in detail, and reviewed and verified the data. For the data inside Zhejiang Province, the research team used online questionnaires with the help of the provincial departments of agriculture and sent each questionnaire to the new farmers in each region. For the data outside Zhejiang Province, the research team used the web-based questionnaire to distribute each questionnaire to the new farmers in each region with the help of the provincial agricultural departments, and sent professional assistants to help the new farmers fill in the questionnaires. A total of 342 questionnaires were collected, including the basic personal and family information of small farmers, the production and operation status of small farmers, the cooperation between small farmers and new farmers, and other specific contents.

3.2. Descriptive Analysis

3.2.1. Analysis of the Current Situation of Interest Linkage

(1) The current situation of interest linkage models in different regions

From the Table 1, at the present stage, the main modes of interest linkage between small farmers and new farmers in China are divided into buy-out, contractual, cooperative, enterprise employment, share cooperative, etc. Yuming (2008) specifically classifies the modes of interest linkage between small farmers and new farmers as loose, semi-close, and close according to the degree of interest linkage [36]. Based on the previous work, this paper defines free trade and no fixed cooperation as the loose association mode; direct cooperation with new farmers through purchase and sales contracts and cooperation between production, supply, and sales through cooperative economic organizations as the semi-close association mode; and cooperation through a labor–employment relationship and shareholding cooperation with production materials or capital as the close association mode. In general, the current interest linkage model is mainly loose and semi-compact, with a total of 170 loose, 144 semi-compact, and only 28 compact people in the sample studied.

Table 1. The means of interest linkage between new farmers and small farmers.

Tightness of Interest Linkage		Loose Type	Semi-Compact	Compact
East	Frequency	59	42	9
	Percentage (%)	17.25	12.28	2.63
Middle	Frequency	61	61	10
	Percentage (%)	17.84	17.84	2.92
West	Frequency	50	41	9
	Percentage (%)	14.62	11.99	2.63

Data source: Data from research questionnaire.

From a geographical point of view, the proportion of loose and semi-close cooperation in the eastern, central, and western regions is high, and the proportion of close association mode cooperation is relatively low. At the present stage, the cooperation between small farmers and new farmers is not close enough and has not yet formed a true “win–win, risk-sharing” community of interests. We should make more efforts to establish a closer interest linkage model and realize a more advanced form of cooperation between small farmers and new farmers, to create a real community of interest, taking risks together and sharing benefits together.

(2) Evaluation of Small Farmers’ Satisfaction under Different Interest Connection Models

From the Table 2, this article divides the satisfaction of small farmers with cooperation into “dissatisfied”, “average”, and “satisfied”. Based on the interest connection model chosen by small farmers and new farmers and the satisfaction of small farmers with both parties’ cooperation, a cross-table analysis is conducted. A total of 142 people are satisfied with the cooperation, 139 people are average, and 61 people are dissatisfied. On the one hand, this indicates that small farmers have indeed gained certain benefits, which may lead to an increase in family income through cooperation. On the other hand, this indicates that cooperation between new farmers and small farmers can provide more needed assistance to small farmers, and new farmers can provide some technical, information, and other assistance to small farmers. Among the three cooperation models, the proportion of satisfaction with “average” and “satisfactory” also exceeded the proportion of “dissatisfied”, indicating that small farmers’ current satisfaction is relatively high and can be further improved in the future.

Table 2. Analysis of satisfaction of small farmers under different interest linkage models.

Satisfaction		Dissatisfaction	General	Satisfaction
Loose type	Frequency	21	93	56
	Percentage (%)	6.14	27.19	16.37
Semi-compact	Frequency	37	35	72
	Percentage (%)	10.82	10.23	21.05
Compact	Frequency	3	11	14
	Percentage (%)	0.87	3.22	4.09

Data source: Data from research questionnaire.

(3) Cross-analysis of different interest linkage models and willingness to continue cooperation

From the Table 3, it can be seen that regardless of the loose, semi-tight, and tight interest linkage models, the proportion of small farmers who indicate “will not terminate cooperation” in the future is highest. Among them, 132 farmers with loose interest linkage models will indicate “will not terminate cooperation” in the future, accounting for 38.60% of all farmers, and 114 farmers with semi-tight models will indicate “will not terminate cooperation” in the future, accounting for 33.33%. Only two farmers with a close interest connection expressed the possibility of terminating cooperation in the future, with 26 farmers indicating that they will not terminate cooperation with new farmers in the future.

Table 3. Different interest linkage models and willingness of small farmers to continue cooperation.

Will the Cooperation Be Terminated in the Next Two Years		Possible Termination of Cooperation	Generally Not	Will Not Terminate Cooperation
Loose type	Frequency	25	13	132
	Percentage (%)	7.30	3.80	38.60
Semi-compact	Frequency	13	17	114
	Percentage (%)	3.80	4.97	33.33
Compact	Frequency	2	0	26
	Percentage (%)	0.58	0.00	7.60

Data source: Data from research questionnaire.

3.2.2. Descriptive Analysis of the Satisfaction and Willingness of Small Farmers to Continue Cooperation

- (1) Analysis of the satisfaction and willingness of small farmers to continue cooperation with the interest linkage model.

From the Table 4, cross-analysis of the satisfaction of small farmers with the interest linkage model and the possibility of terminating cooperation in the next two years shows that for small farmers who are satisfied with their cooperation with new farmers, most will not choose to terminate cooperation. Among them, 5.26% of dissatisfied farmers will choose to terminate their cooperation in the next two years, and 39% of dissatisfied farmers, accounting for 11.40%, will not terminate their cooperation. Among them, 31.28% of farmers with “average” satisfaction said they will not terminate their cooperation. Of those who expressed satisfaction, only two people may terminate their cooperation in the future, and 36.55% said they will continue to cooperate with new farmers in the future, indicating a close relationship between satisfaction and the willingness of small farmers to cooperate in the future.

Table 4. Analysis of satisfaction with the interest connection model of small farmers and their willingness to continue cooperation in the future.

Will the Cooperation Be Terminated in the Next Two Years		Possible Termination of Cooperation	Generally Not	Will Not Terminate Cooperation
Dissatisfaction	Frequency	18	4	39
	Percentage (%)	5.26	1.16	11.40
General	Frequency	20	11	108
	Percentage (%)	5.85	3.22	31.28
Satisfaction	Frequency	2	15	125
	Percentage (%)	0.58	4.39	36.55

Data source: Data from research questionnaire.

- (2) Analysis of small farmers’ satisfaction with the benefit distribution and their willingness to continue cooperation

From the Table 5, it can be seen that the satisfaction of small farmers with the benefit distribution and their willingness to continue cooperation are analyzed. The likelihood of future cooperation among farmers with “average” and “satisfactory” satisfaction with the benefit distribution is also higher. Among them, 126 farmers with “average” satisfaction with the benefit distribution will not terminate cooperation in the future, accounting for 36.84%, and 103 farmers with “satisfactory” satisfaction will not terminate cooperation, accounting for 30.12%. Some small farmers who expressed dissatisfaction also expressed that they will not terminate their cooperation in the future. This may be due to the fact that although they are not satisfied with the distribution of benefits, they have also received assistance from other aspects through cooperation with new farmers, and they still chose to continue their cooperation in the future.

Table 5. Analysis of small farmers’ satisfaction with benefit distribution and willingness to continue cooperation.

Will the Cooperation Be Terminated in the Next Two Years		Possible Termination of Cooperation	Generally Not	Will Not Terminate Cooperation
Dissatisfaction	Frequency	16	6	43
	Percentage (%)	4.68	1.75	12.57
General	Frequency	20	12	126
	Percentage (%)	5.85	3.51	36.84
Satisfaction	Frequency	4	12	103
	Percentage (%)	1.17	3.51	30.12

Data source: Data from research questionnaire.

(3) Analysis of the satisfaction and willingness of small farmers to continue cooperation in handling interest disputes

From the Table 6, it can be seen that small farmers with satisfaction levels of “average” and “satisfactory” in handling interest disputes have a higher likelihood of future cooperation. Among them, 121 farmers with satisfaction levels of “average” in handling interest disputes will not terminate cooperation in the future, accounting for 35.38%, and 102 farmers with satisfaction levels will not terminate cooperation, accounting for 29.82%. Among the small farmers who expressed dissatisfaction, 49 also stated that they would not terminate their cooperation in the future, while 19 expressed that they may terminate their cooperation in the future, accounting for 5.56%.

Table 6. Analysis of satisfaction and willingness of small farmers to continue cooperation in resolving interest disputes.

Will the Cooperation Be Terminated in the Next Two Years		Possible Termination of Cooperation	Generally Not	Will Not Terminate Cooperation
Dissatisfaction	Frequency	19	4	49
	Percentage (%)	5.56	1.17	14.33
General	Frequency	19	14	121
	Percentage (%)	5.56	4.10	35.38
Satisfaction	Frequency	2	12	102
	Percentage (%)	0.58	3.51	29.82

Data source: Data from research questionnaire.

3.3. Statistical Analysis of Small Farmers’ Willingness to Sustain Cooperation

From the Table 7, we can see that for small farmers who are satisfied with the cooperation with new farmers, most of them will not choose to terminate the cooperation. Among those who are not satisfied, 5.26% will choose to terminate the cooperation in the next two years, while 39 of those who are not satisfied said they will not terminate the cooperation, accounting for 11.40%. An amount of 31.28% of the farmers who are satisfied with the cooperation and are “average” said they will not terminate the cooperation. Among those who expressed satisfaction, only 2 people might terminate their cooperation in the future, and 36.55% said they would continue to cooperate with new farmers in the future. It can be seen that satisfaction has a close relationship with small farmers’ willingness to cooperate in the future.

Table 7. Descriptive analysis of overall satisfaction of smallholders and the likelihood of whether to terminate cooperation in the next two years.

Possibility of Contract Renewal for the Next Two Years		Possible Termination of Cooperation	Generally Not	No Termination of Cooperation
Dissatisfaction	Frequency	18	4	39
	Percentage (%)	5.26	1.16	11.40
General	Frequency	20	11	108
	Percentage (%)	5.85	3.22	31.28
Satisfaction	Frequency	2	15	125
	Percentage (%)	0.58	4.39	36.55

Data source: Data from research questionnaire.

On the whole, the proportion of farmers who “will not terminate cooperation” is much higher than that of farmers who “may terminate cooperation”, indicating that most small farmers tend to continue cooperation with new farmers, and the higher the satisfaction of small farmers, the more they will maintain cooperation with new farmers. This paper has strong practical significance to analyze the factors influencing the willingness of small farmers to continue cooperation with new farmers based on the perspective of small farmers’ satisfaction under different interest linkage patterns. For this reason, this paper selects small farmers’ satisfaction with the benefit distribution method, with the benefit distribution, and with benefit disputes as key variables to conduct regression analysis with

the willingness to continue cooperation, and then determines the key factors influencing the sustained cooperation between small farmers and new farmers.

4. Empirical Analysis of Willingness to Continue Cooperation

4.1. Variable Selection and Description

4.1.1. Explanatory Variables

In our empirical study on the willingness of small farmers to continue cooperation with new farmers, we believe that in general, the higher the satisfaction level, the more willing they are to continue their cooperation, and the perspective of our study is also based on the satisfaction evaluation of small farmers with different interest patterns. Therefore, the explanatory variables selected in this paper are whether smallholder farmers will terminate their cooperation in the next two years, which are divided into “will terminate cooperation”, “generally will not”, and “will not terminate cooperation”, and are assigned values of 1, 2, and 3 in order.

4.1.2. Core Explanatory Variables

By studying the factors influencing the satisfaction of smallholder farmers’ willingness to participate in cooperation, we refer to some existing explanatory variables commonly used in satisfaction models, and considering the reliability, accuracy and scientificity of the variable data, we finally select the core explanatory variables as satisfaction with benefit association methods and satisfaction with benefit maintenance. Model 1 is an ordered logistic regression with the satisfaction of smallholder farmers with different interest association methods as the core explanatory variables, and models 2 and 3 are ordered logistic regressions with the satisfaction of smallholder farmers with interest distribution methods and with interest disputes as the core explanatory variables, respectively.

4.1.3. Control Variables

From the Table 8, this study sets control variables in terms of individual farmer characteristics, household characteristics, business characteristics, and market conditions to explore whether and how these variables affect farmers’ satisfaction among new farmers’ cooperatives. According to the research perspective of scholars (Sun Yafan and Yu Haipeng, 2012) [20], the individual characteristics selected in this paper include education level, political outlook, whether they are village cadres (Zhang Suro et al., 2012) [25], and whether they join cooperative organizations. Household characteristics include the labor force number (Chen, Chong, 2007) [37]. The operating characteristics are selected as the source of smallholder farmers’ agricultural business income and the percentage of agricultural business income, and the control variables selected for market characteristics are the percentage of agricultural products sold by new farmers and the market price fluctuation (Lu Xianghu et al., 2008; Xiao Quanliang, 2015) [38]. The specific definitions of each variable and the assigned values are presented in detail in the Table 8.

Table 8. Definition and assignment of variables affecting the willingness of smallholder farmers to sustain cooperation.

Variable Name	Definition and Assignment	Average Value	Standard Deviation
Explained Variables			
Possibility of termination of cooperation in the next two years	1 = May terminate cooperation, 2 = Normally not, 3 = Will not terminate cooperation	2.678	0.673
Core explanatory variables			
Satisfaction with the way of linking interests	1 = unsatisfied, 2 = fair, 3 = satisfied	2.237	0.734
Satisfaction with the distribution of benefits	1 = unsatisfied, 2 = fair, 3 = satisfied	2.158	0.717
Satisfaction of interest dispute handling	1 = unsatisfied, 2 = fair, 3 = satisfied	2.129	0.731

Table 8. Cont.

Variable Name	Definition and Assignment	Average Value	Standard Deviation
Control variables			
Individual Characteristics			
Education level	1 = Junior high school and below, 2 = High school or middle school, 3 = College, 4 = Bachelor's, 5 = Master's and above	2.918	1.133
Political Appearance	1 = party member, 0 = non-party member	0.287	0.453
Whether or not to serve as village officials	1 = yes, 0 = no	0.270	0.445
Whether to participate in cooperative organizations	1 = yes, 0 = no	0.637	0.482
Family Characteristics			
Number of labor force	Unit: People	2.939	1.165
Family income sources			
Agricultural production	1 = yes, 0 = no	0.781	0.414
Participation in cooperative production and operation	1 = yes, 0 = no	0.146	0.354
Employment in agriculture-related enterprises	1 = yes, 0 = no	0.061	0.240
Share of income from agricultural operations	1 = less than 25%, 2 = 25% to 50%, 3 = 50% to 75%, 4 = 75% or more	2.620	1.132
Market Characteristics			
Percentage of agricultural products sold by new farmers	1 = less than 25%, 2 = 25% to 50%, 3 = 50% to 75%, 4 = 75% or more	1.874	0.989
Agricultural product market price fluctuations	1 = very stable, 2 = basically stable, 3 = highly volatile, 4 = very volatile	2.254	0.797
Region			
	East: 1 = yes, 0 = no	0.322	0.468
	Middle: 1 = yes, 0 = no	0.386	0.488

Data source: Data from research questionnaire.

4.2. Empirical Model Construction

The possibility of termination of cooperation between small farmers in the next two years is categorized into three different levels: “may terminate cooperation”, “generally will not”, and “will not terminate cooperation”. Therefore, this paper uses an ordered logistic model to analyze the factors influencing the willingness of smallholder farmers to continue cooperation with new farmers. If the conditional probability of event occurrence is denoted as P_i , then P_i is the conditional probability of the first i conditional probability of the occurrence of the first observed event, and the following logistic regression model is obtained:

$$P_i = \frac{1}{1 + e^{-(\alpha_i + \beta_i X_i)}}$$

It is a nonlinear function consisting of independent variables x_i , but this nonlinear function can be transformed into a linear function. P_i is the first $\square$ probability of the event occurring for the first observation, and the conditional probability of the event not occurring is

$$1 - P_i = 1 - \frac{1}{1 + e^{-(\alpha_i + \beta_i X_i)}}$$

Then, the ratio of the probability of the event occurring to the probability of it not occurring is

$$\frac{P_i}{1 - p_i} = e^{(\alpha_i + \beta_i X_i)}$$

Taking the natural logarithm on both sides at the same time, we obtain

$$\ln\left(\frac{P_i}{1 - p_i}\right) = \alpha_i + \beta_i X_i$$

When there are k independent variables, the logistic regression model can be extended as follows:

$$p_i = \frac{1}{1 + e^{-(\alpha_i + \sum_{j=1}^k \beta_{ij} X_{ij})}} \quad (i = 1, 2, 3)$$

This can be further translated into

$$\ln\left(\frac{p_i}{1 - p_i}\right) = \alpha_i + \sum_{j=1}^k \beta_{ij} X_{ij} + \varepsilon_i$$

where p_i denotes the probability that smallholder farmers will continue to cooperate in the next two years with probability 1, 2, and 3; X_i denotes the explanatory variable, i.e., the factors affecting the willingness of small farmers to cooperate with new farmers; k denotes the number of independent variables; α_i is the intercept term; β_{ij} denotes the coefficient to be estimated; and ε_i is the error term.

4.3. Model Estimation Results and Analysis

This paper conducted analysis using stata15.0, and the issues of multicollinearity and endogeneity needed to be tested before the regression analysis. Multicollinearity refers to the high correlation between variables that affects the analysis results, while endogeneity refers to the relationship between the independent variables and the error term that also affects the estimated coefficients. The condition for judging multicollinearity is the variance inflation factor vif, and a variance inflation factor greater than or equal to 10 indicates that there is multicollinearity in the model. Through the test, the variance inflation factors of the selected variables are close to 1, so the model does not have serious multicollinearity problems.

From the Table 9, from the regression results of model 1 and model 3, it can be seen that small farmers' satisfaction with the benefit association method and with benefit disputes both pass the significance test at the 1% level; the core explanatory variable of satisfaction with the benefit distribution in model 2 passes the significance test at the 5% level; and the coefficients are also positive, successfully verifying the plausibility of hypothesis H1, indicating that small farmers' satisfaction with the benefit association method, with the benefit distribution, and with benefit disputes all have a significant positive effect on small farmers' willingness to cooperate with new farmers in the future. The higher the satisfaction level, the higher the possibility of future cooperation with the new farmers, and the better the benefit distribution and dispute handling, the higher the willingness of small farmers to continue cooperation.

In terms of individual characteristics, the regression results all indicate that education is negatively related to the willingness of smallholder farmers to continue cooperation, probably because the more educated smallholder farmers may be more aware of the possibility of their own interests being taken away in the process of cooperation. The regression coefficient of the variable of whether or not to be a village cadre is positive, and the willingness to cooperate is higher among farmers who have experience as village cadres than those who have no cadre experience. This result successfully verifies the hypothesis of H2. The regression results of the variable of whether or not to participate in cooperative organizations are all positive, indicating that farmers who have participated in cooperative organizations may be more inclined to continue to cooperate in the future. In terms of household characteristics, the coefficient of the labor force number is also positive in the regression results of all three models, indicating that farmers with a larger labor force are more inclined to choose to continue cooperation with new farmers.

The regression results of the three models show that the variable of agricultural production passes the significance test at the 5% level, and the coefficients of all three sources of income are positive. A higher future willingness to cooperate of smallholders whose income is agricultural production is consistent with the previously proposed research Hypothesis H3, indicating that they all have a positive impact on the future cooperation of

small farmers. Production and participation in cooperative production and operation are more significant than employment in agriculture-related enterprises and are more likely to continue cooperation with new farmers in the future. The negative regression coefficient of agricultural business income indicates that the size of agricultural production has a negative influence on small farmers' willingness to continue cooperation. Smaller farmers may rely more on the help provided by new farmers because of their lack of technology, market information, and marketing channels, so they are more likely to continue cooperation with new farmers in the future.

Table 9. Ordered logistic regression results.

Variables	Model 1	Model 2	Model 3
Satisfaction with the way of linking interests	0.652 *** (0.020)		
Satisfaction with the distribution of benefits		0.502 ** (0.211)	
Satisfaction with disputes of interest			0.650 *** (0.220)
Education level	−0.098 (0.148)	−0.113 (0.147)	−0.118 (0.150)
Political Appearance	−0.316 (0.342)	−0.326 (0.341)	−0.408 (0.343)
Whether or not to serve as village officials	0.045 (0.374)	0.100 (0.371)	0.080 (0.371)
Whether to participate in cooperative organizations	0.136 (0.322)	0.109 (0.321)	0.122 (0.322)
Number of labor force	0.052 (0.131)	0.054 (0.131)	0.044 (0.132)
Agricultural production	2.529 ** (1.227)	2.823 ** (1.216)	2.806 ** (1.271)
Participation in cooperative production and operation	2.489 * (1.281)	2.795 ** (1.270)	2.796 ** (1.324)
Employment in agriculture-related enterprises	2.106 (1.386)	2.524 * (1.374)	2.461 * (1.420)
Share of income from agricultural operations	−0.145 (0.150)	−0.138 (0.149)	−0.129 (1.490)
Percentage of agricultural products sold by new farmers	0.239 (0.181)	0.259 (0.180)	0.262 (0.180)
Agricultural product market price fluctuations	−0.345 * (0.191)	−0.374 ** (0.190)	−0.345 * (0.193)
East	0.509 (0.413)	0.600 (0.410)	0.517 (0.414)
Middle	0.440 (0.365)	0.522 (0.362)	0.488 (0.365)
Prob > chi2	0.003	0.009	0.003
Pseudo R ²	0.085	0.076	0.084

Note: *, **, *** indicate significant at the 10%, 5%, and 1% levels, respectively.

In terms of market conditions, the explanatory variable of the proportion of agricultural products sold by new farmers has a positive effect, indicating that the higher the commercialization rate of agricultural products, the higher the possibility of cooperation, and the more small farmers need to cooperate with new farmers and use the sales channels and market information provided by new farmers to sell their agricultural products. So, the higher the commercialization rate of agricultural products produced by small farmers, the more they will choose to maintain a long-term effective cooperation. The regression results of both models 1 and 3 indicate that the market price fluctuation situation is significant at the 10% level, and the regression results of model 2 are significant at the 5% level with negative coefficients, indicating that small farmers will choose to establish long-term cooperation with new farmers more often in the future when the market price fluctuation is more stable, which is due to the optimal choice of small farmers based on the rational economic man and the pursuit of maximizing their own interests.

From Table 10, from the marginal effects of the regression of smallholder satisfaction ratings of the model's key variables, each 1% increase in smallholder satisfaction with the benefit linkage method reduces the probability that smallholders will "probably terminate cooperation" and "generally not" in future cooperation by 5.60% and 3.80%, respectively, and the probability of "will not terminate cooperation" will increase by 9.40%.

Table 10. Estimation of marginal effects of factors influencing sustained cooperation of smallholder farmers.

Variables	Possible Termination of Cooperation	Generally Not	No Termination of Cooperation
Satisfaction with the way of linking interests	−0.056 *** (0.020)	−0.038 *** (0.013)	0.094 *** (0.030)
Control variables	Controlled	Controlled	Controlled-

Note: Robust standard errors are in parentheses; *** indicate significant at the 1% levels, respectively.

From the Table 11, for every 1% increase in smallholder satisfaction with the distribution of benefits, the probability that smallholder cooperation in the future will be "likely to terminate cooperation" and "generally not" decreases by 4.30% and 3.00%, respectively, and the probability of "will not terminate cooperation" will increase by 7.30%.

Table 11. Estimation of marginal effects of factors influencing sustained cooperation of smallholder farmers.

Variables	Possible Termination of Cooperation	Generally Not	No Termination of Cooperation
Satisfaction with the distribution of benefits	−0.043 ** (0.019)	−0.030 ** (0.013)	0.073 ** (0.030)
Control variables	Controlled	Controlled	Controlled-

Note: Robust standard errors are in parentheses; ** indicate significant at the 10%, 5%, and 1% levels, respectively.

From the Table 12, for every 1% increase in smallholder satisfaction with the handling of interest disputes, the probability that smallholder cooperation in the future will be "likely to terminate cooperation" and "generally not" decreases by 5.60% and 3.80%, respectively, and the probability of "will terminate cooperation" will increase by 9.40%.

Table 12. Estimation of marginal effects of factors influencing sustained cooperation of small-holder farmers.

Variables	Possible Termination of Cooperation	Generally Not	No Termination of Cooperation
Satisfaction with disputes of interest	−0.056 *** (0.020)	−0.038 *** (0.013)	0.094 *** (0.031)
Control variables	Controlled	Controlled	Controlled

Note: Robust standard errors are in parentheses; *** indicate significant at the 10%, 5%, and 1% levels, respectively.

4.4. Heterogeneity Test

From the Table 13, In order to more clearly determine the difference in satisfaction of small farmers in different regions on small farmers' willingness to continue cooperation in the future, this paper uses regions as the differentiation criteria for group regressions. The results show that the satisfaction of small farmers in the western region with the means of benefit linkage is significant at the 10% level, while the eastern and central regions are relatively less significant, and the satisfaction of the benefit distribution in the central region has a positive effect on the willingness to continue cooperation. There is no significant difference in the satisfaction of smallholder farmers in the three regions on the handling of interest disputes, and the higher the satisfaction on the handling of interest disputes, the higher the possibility of continued cooperation in the future.

Table 13. Regression results by regional grouping.

Region	East	Middle	West
Satisfaction with the way of linking interests	0.474 (0.858)	0.013 (0.676)	1.115 * (0.588)
Satisfaction with the distribution of benefits	1.489 * (0.896)	0.081 (0.761)	0.268 (0.595)
Satisfaction with disputes of interest	1.537 (0.982)	0.576 (0.543)	0.082 (0.606)
Control variables	Controlled	Controlled	Controlled
Observations	104	114	85

Note: * indicate significant at the 10%.

At the same time, this article also conducted group regression based on the proportion of small farmers with different agricultural operating income. From the Table 14, the results showed that the willingness of small farmers with agricultural operating income accounting for less than 50% and 75% to 100% to continue cooperation in the future is positively correlated with their satisfaction with the benefit linkage model. Among them, the satisfaction of small farmers with 75% to 100% of the proportion with the benefit linkage model passes the significance test at the 10% level. The willingness of small farmers with a proportion of less than 25% and more than 75% to continue cooperation in the future is negatively correlated with their satisfaction with the distribution of benefits. Small farmers with a proportion of agricultural operating income ranging from 25% to 75% have a positive correlation with their satisfaction with the distribution of benefits and their willingness to cooperate in the future. In terms of satisfaction with interest disputes, there is a positive correlation between the willingness and satisfaction of small farmers with agricultural operations accounting for less than 50%, and a negative correlation between the willingness and satisfaction of small farmers with agricultural operations accounting for more than 50%. It can be seen that the relationship between satisfaction and future cooperation willingness varies depending on the production scale of small farmers.

Table 14. Regression results were grouped by proportion of agricultural operating income.

Proportion of Agricultural Operating Income	0~25%	25~50%	50~75%	75~100%
Satisfaction with the way of linking interests	2.447 *	0.557	−0.226	1.210 *
	(1.251)	(0.700)	(0.580)	(0.632)
Satisfaction with the distribution of benefits	−2.117 **	0.343	1.110	−0.083
	(0.992)	(0.703)	(0.903)	(0.633)
Satisfaction with disputes of interest	0.716	0.222	−0.440	−0.103
	(0.899)	(0.621)	(0.785)	(0.680)
Control variables	Controlled	Controlled	Controlled	Controlled
Observations	74	86	78	104

Note: *, ** indicate significant at the 10% and 5% levels, respectively.

4.5. Robustness Test

To further ensure the reliability of the conclusions obtained from the above Ordered Logit model regressions, robustness tests are also conducted in this paper. The robustness test can take various approaches. Referring to Chenpei et al.'s (2017) method of conducting robustness tests, this paper uses the approach of replacing the model [39]; replacing the Ordered Logit regression model 1 used with the Ordered Probit regression model; replacing the Ordered Logit model in model 1, model 2, and model 3 in Table 15 with the Ordered Probit regression again; and defining model 4, Model 5, and Model 6. The regression results are presented in Table 15. The significance of the regression results of the core explanatory variables, smallholder satisfaction with the means of benefit association, with the benefit distribution, and with benefit disputes, are basically consistent with those reported in the regression of model 1 in Table 9, and the coefficients are all positive, indicating that the significance of the research findings of smallholder satisfaction with a positive willingness to continue cooperation in the future is reliable and passes the robustness test.

Table 15. Ordered Probit model regression results.

Variables	Model 4	Model 5	Model 6
Satisfaction with the way of linking interests	0.386 ***		
	(0.020)		
Satisfaction with the distribution of benefits		0.287 **	
		(0.120)	
Satisfaction with disputes of interest			0.391 ***
			(0.123)
Control variables	Controlled	Controlled	Controlled
Prob > chi2	0.002	0.009	0.002
Pseudo R ²	0.087	0.076	0.087

Note: Robust standard errors in parentheses, ** and *** indicate significant at the 5%, and 1% levels, respectively.

The explanatory variables such as education level, political outlook, whether to participate in village cadres, whether to join cooperative organizations, and the labor force number are also consistent with the regression results of the models selected in this paper. The higher the proportion of agricultural products sold through new farmers, the higher the likelihood of sustainable cooperation in the future, and the lower the fluctuation of agricultural market prices, the higher the likelihood of sustainable cooperation between small farmers and new farmers, indicating that the model passed the robustness test. The regression results in model 3 are also robust.

5. Conclusions and Policy Recommendations

Through the empirical analysis of the smallholder data obtained in the survey, from the regression analysis results of the core explanatory variables, the satisfaction of smallholder farmers with the interest linkage model, the satisfaction of the distribution of benefits, and the satisfaction of the settlement of interest disputes all have a very significant positive impact on the willingness of smallholders and new farmers to continue to cooperate. For every 1% increase in smallholder satisfaction with the benefit distribution and with dispute handling, the probability of smallholder farmers continuing to cooperate with new farmers in the future will increase by 7.30% and 9.40%, respectively. The results of this study are consistent with the results of the empirical study of scholar Qiwen (2013) [31].

In terms of control variables, education level among individual characteristics, whether or not they are village cadres, and whether or not they join cooperative organizations also have different degrees of influence on smallholder farmers' willingness to cooperate, and smallholder farmers who have experience as cadres and have joined cooperative organizations are more likely to cooperate with new farmers consistently. Education has a negative effect on smallholder farmers' willingness to cooperate in the future, which is consistent with the findings of Zhang (2011) [21], where cadre experience has a positive effect on smallholder farmers' willingness to cooperate in the future, and the more likely smallholder farmers who have cadre experience and have participated in cooperative organizations will continue to cooperate with new farmers, which is consistent with the findings of scholars such as Zhang (2007) and Zhang et al. (2012) [24,25]. The number of laborers in the household characteristics all have a positive influence on smallholder cooperation, and the larger the number of laborers, the more likely they are to continue cooperation with new farmers in the future. The regression results for the explanatory variable of farmers' income source are also significant and positive, with farmers whose income source is mainly agricultural production and participation in cooperative production and operation being more likely to continue cooperation with new farmers in the future. For this reason, this paper puts forward the following relevant policy recommendations, hoping to play a role in promoting sustainable cooperation between small farmers and new farmers.

5.1. Respecting Farmers' Wishes and Improving Small Farmers' Satisfaction with Different Methods of Interest Linkage

The cooperation between small farmers and new farmers has a variety of interest linkage methods, such as buyout, contract, cooperative, enterprise employment, and share cooperation. Therefore, the farmers' right to choose the articulation object and articulation method independently should be respected, and farmers should be guided to make a consensual articulation choice according to their own production and management conditions, which is not only conducive to meeting the objective needs of farmers, but also conducive to maintaining the effectiveness and stability of cooperation. First, we should correctly understand the interest linkage mode of farmers and new farmers. All kinds of interest linkage models can help farmers to increase their income and wealth and promote the quality and efficiency of agriculture. Second, in the process of guiding farmers to connect with new farmers, the government should not make a "one-size-fits-all" approach, and small farmers should choose the type of linkage they want to adopt. The government should encourage farmers to choose the target of cooperation and linkage methods according to local conditions and time; to efficiently meet farmers' needs for materials, services, and technologies; to continuously improve the satisfaction of small farmers under different benefit linkage methods; and to enhance their willingness to continue cooperation in the future.

5.2. Improve the Benefit Distribution Mechanism and Effectively Protect the Rights and Interests of Small Farmers

In the process of cooperation between small farmers and new farmers, because small farmers are in a relatively disadvantageous position, there are large conflicts and disputes

between the latter two when distributing benefits. The new farmers often think that small farmers must depend on themselves to survive, and their relatively strong voice makes them dissatisfied with vested interests and often exploit some of the small farmers' interests, which leads to small farmers' dissatisfaction. Small farmers also think that their own contribution is inversely proportional to the harvest, and they are also dissatisfied with the current distribution plan. Therefore, it is necessary to establish a fairer benefit distribution plan, improve the supervision system, make the distribution process more transparent and open, and distribute the benefits obtained through cooperation more effectively and reasonably between the two, to reduce the dissatisfaction of small farmers, increase the enthusiasm of small farmers to participate in cooperation, and enhance the willingness of small farmers to cooperate with new farmers in the long term. In terms of interest maintenance, we should also actively encourage the new farmers to effectively protect the interests of small farmers and give full play to the important role of institutional mechanisms for interest distribution and interest maintenance, to establish a long-term and efficient cooperation model.

5.3. Reasonable Handling of Cooperation Disputes to Improve Farmers' Satisfaction with the Cooperation

In the process of cooperation between small farmers and new farmers, some dispute problems will inevitably arise. If disputes are handled properly, farmers will be more satisfied with new farmers, will increase their trust in new farmers, and will be more inclined to continue cooperation with new farmers in the future; if disputes are not handled properly, it will greatly damage the relationship between small farmers and new farmers in cooperation, and even generate new conflicts, which is not conducive to the realization of mutual benefit sharing. Therefore, it is crucial to reasonably handle disputes in the process of cooperation. When facing disputes, new farmers can deal with them through reasonable means such as mediation, interview, and negotiation, and cannot use extreme ways to deal with disputes. At the same time, they can start from the source of disputes and explore the reasons for the disputes, to avoid disputes, continuously improve small farmers' satisfaction with dispute handling, establish long-lasting cooperation between the two sides, and realize the sharing of mutual benefits.

5.4. Encourage the Sale of Agricultural Products through New Farmers and Increase the Commercialization Rate of Agricultural Products

As the empirical results indicate that the higher the proportion of agricultural products sold through new farmers, the greater the possibility of future cooperation of small farmers, the government can promote to farmers that new farmers have more market information and brand packaging technology as well as have more marketing channels, such as means of e-commerce and live webcasts with goods. Small farmers have difficulty in selling agricultural products to the market smoothly due to their own limitations and in realizing fast cash. So, farmers should be actively guided to cooperate with new farmers, the proportion of agricultural products sold through new farmers should be increased, and the commercialization rate of agricultural products should also be improved. Through the packaging and processing of new farmers, agricultural products can obtain a higher added value, which can bring more income to small farmers. Also, small farmers can use the cooperative relationship of new farmers to establish stable production and marketing channels, and reduce the problem of difficulty in selling in the process of agricultural production. This will facilitate the establishment of lasting and effective cooperation between small farmers and new farmers.

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