

## Article

# Characterizing the Land Shareholding Cooperative: A Case Study of Shanglin Village in Jiangsu, China

Yi Ren <sup>1</sup>, Yang Bian <sup>2,\*</sup> and Tao He <sup>3</sup><sup>1</sup> School of Foreign Languages, Shanghai Jiao Tong University, Shanghai 200240, China; yiren@sjtu.edu.cn<sup>2</sup> School of Banking and Finance, University of International Business and Economics, Beijing 100029, China<sup>3</sup> College of Civil Engineering, Shanghai Normal University, Shanghai 200234, China; taohe@shnu.edu.cn

\* Correspondence: biantim@uibe.edu.cn; Tel.: +86-10-6449-3339

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**Abstract:** The land tenure reform is the key to sustainable development in rural China. Without challenging the collective ownership of land, the land shareholding cooperative (LSC) system came into being and is being strongly endorsed by the authority: It re-collectivizes the contracted land from peasants and enables better regional planning and large-scale modern agricultural production. This paper studies a specific LSC (Shanglin LSC in the Sunan region of the Yangtze River Delta) based on our fieldwork. We found that the LSC system is a bottom-up institutional innovation towards sustainable land use in China. Both village cadres and ordinary peasants' decision making contributes to its successful establishment and development. This shareholding system increases peasants' income through dividends and employment opportunities. The concentrated land enables ecological farming. Acting as a quasi-government agency, the LSC also provides public service and social security to the village community. On the other hand, the LSCs' success depends on certain prior conditions and the LSCs' multiple missions may contradict each other from time to time, and lead to loss of efficiency. We argue that this approach to land tenure reform may not be universally applied to any regions in China.

**Keywords:** land tenure reform; land shareholding cooperative; agricultural production; village cadres; villagers

## 1. Introduction

After more than thirty years of rapid economic growth, the Three Rural Issues (sannong wenti), problems of peasantry, rural areas, and agriculture) in China still persist and are of major concern to the government [1]. One of the most important factors in agricultural production, rural land stands as peasants' greatest fundamental asset and remains their best guarantee of social security, yet in China's current legal system, land remains the only factor of production without private ownership. Crucial for poverty reduction and social welfare improvement, the land tenure reform is the key for future sustainable development in rural China.

The present household responsibility system, an agricultural production system adopted in the early 1980s, separates land-use rights from ownership rights. It allows rural households to contract and farm the land which is collectively owned by the village. Since every village member has equal claim on the land due to collective ownership, the norm for distributing land-use rights was based on the size of the household. With abundant rural population and limited land, the amount each household can contract was very small [2].

With the development of market economy, the household responsibility system is increasingly seen as an impediment to sustainable land use and scaled agricultural production [3]. With the massive boom of non-agricultural sectors in rural China, some peasants rendered their farmland idle while some others who are willing to expand their agricultural production were not able to acquire more

land due to the practice of farmland transfer being prohibited by law. Under these circumstances, a new rural shareholding system in the name of land shareholding cooperatives (LSCs) came into being in several regions like Guangdong, Jiangsu, and Chongqing [4,5]. Without challenging villages' collective ownership, the cooperatives re-collectivize the contracted land from individual peasants. By joining this cooperative voluntarily, peasants convert their land-use rights into shares and receive dividends every year [6]. The rural land is concentrated and then managed (or rented out) by the cooperative for modern agricultural/industrial projects.

The LSC system has been strongly endorsed by the Chinese government through a series of official documents, and the authority is determined to promote this approach to land tenure reform in order to "boost agricultural development in the rural areas", as remarked by the Minister of Agriculture, Han Changfu, in 2017 [7]. Yet, this shareholding system is never a universal arrangement and nowadays rural China is like a laboratory where there are different kinds of spontaneous institutional experimentations, which lends itself to the most diverse analysis. For example, there were more than 1800 LSCs, each with its local characteristics in Jiangsu province alone at the end of 2011.

A series of papers have already been written on the development of various rural shareholding cooperatives [6,8,9]. Our paper complements the existing literature by illustrating the actual development path for a specific LSC (Shanglin LSC) based on our fieldwork. Besides discussing Shanglin LSC's key features and deficiencies, we focus on this village's prior conditions before LSC's establishment as well as the behavior of village cadres and villagers during its establishment process. We tried to explore key factors influencing their decision making, which will shed light on future research on China's land tenure reform.

We find that this new type of economic organizations is a bottom-up institutional innovation to establish sustainable land use in China. Initiated by village cadres and enthusiastically (in general) joined by common villagers, the LSC succeeds in mobilizing collective tangible assets (land) concurrently with private intangible assets (land-use rights) [10]. The originally separated (sometimes idled) farmland, when re-collectivized by the LSC, may achieve greater economies of scale and ecological sustainability through regional planning. For the purpose of sustainable land management and according to the village's physical characteristics, certain modern agriculture and related industries can be installed by the LSC. Similar to what Hernando de Soto argued in his *The Mystery of Capital*, this rural shareholding reform converts "dead capital" (low-productivity land) into "active capital" of high productivity [11].

The LSC is also endowed with social and political missions. The cooperative provides a means of social security benefits to all its members. To a large extent the LSC plays the role as a quasi-government agency offering public service without government funding, yet it may also lead to clashes between the administrative authority and the LSC's economic autonomy. The conflicts between the LSC's multiple missions and its loss of efficiency in certain aspects can hamper its long-term development.

This kind of cooperative may only apply to certain developed regions with abundant land resources where rural population does not depend on agriculture or farmland for their livelihoods. It has a fairly high operating cost: The evaluation and quantification of farmland is particularly expensive [11]. Village cadres' initiatives together with villagers' willingness also significantly contribute to the cooperative's successful establishment and development. Before its nationwide promotion, region-specific characteristics are to be extensively understood and villagers' voluntariness should be well respected.

This paper proceeds as follows: Section 2 introduces Shanglin village and our research methodology. In Section 3, we discuss the role played by village cadres, peasants' attitude towards the LSC, Shanglin LSC's performance, and its local characteristics, as well as deficiencies. Section 4 concludes.

## 2. Materials and Methods

### 2.1. Study Area

Shanglin Village is located in Wuzhong District, 25 km (15 miles) away from the city center of Suzhou, Jiangsu on the East bank of Lake Taihu (one of the largest lakes in China). With fertile soil, agriculture occupies an important place in the rural economy: The cultivation of rice and cash crops are supported by an extensive irrigation system; Aquaculture flourishes along Lake Taihu. Historically this southern part of Jiangsu Province (Sunan region, including municipalities of Suzhou, Wuxi, and Changzhou in the Yangtze River Delta, as shown in Figure 1 is best known by its nickname “Land of Rice and Fish”.



Figure 1. Location of Shanglin Village.

In the 1980s, through the development of a collectively-owned township and village enterprises (TVEs), this region became rich and famous as the “Sunan model”. From late 1990s, with a massive investment in infrastructure and an ample supply of skilled workers, the construction of industrial parks combined with its proximity to Shanghai has caused Suzhou city to experience unprecedented economic growth with GDP amounting to RMB 402.6 billion (\$49 billion) in 2005 (the year before the establishment of Shanglin LSC). Suburban peasants’ lives have been dramatically altered: Some lost their land due to the establishment of economic and technological development zones; some voluntarily abandoned their land and farm work instead finding employment in industrial parks near their villages, while some others switched to agro-ecotourism.

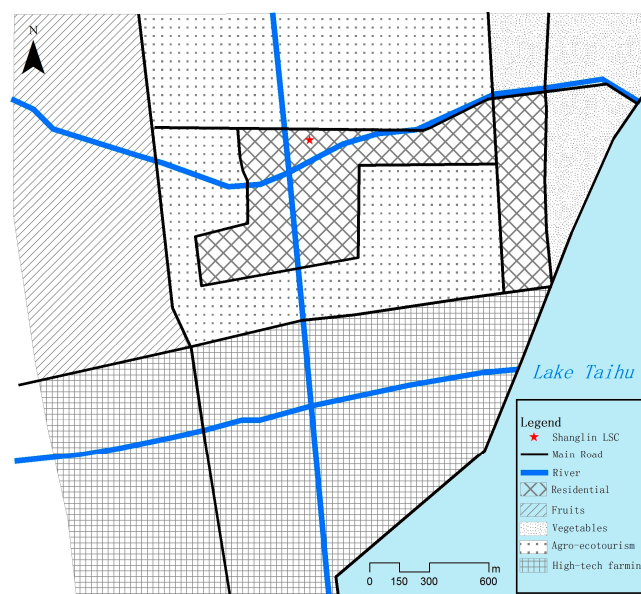
Suzhou is one of the oldest cities in the Yangtze River Delta and the birthplace of Wu culture. There were seldom peasant uprisings in the history, and the legacy of Wu culture’s disciplinary tradition contributes to the administration of rural collective economy. Village cadres are often endowed with authority and peasants obey them [12] (p. 94). Some literature (for example [13]) argue that this may be one of the major reasons for the booming rural collective economy and the success of the Sunan model.

Though located in Sunan region which is famous for TVEs, Shanglin village is still labeled as an agricultural village: It is endowed with relatively abundant land resources: A total area of 670 hectares where 173 hectares of cultivated land and 253 hectares of aquaculture sites run along Lake Taihu. Classified as “basic farmland” these land resources are under legal protection (According to State Council Decree No. 257, enacted on 27 December 1998, no one is allowed to occupy or change the usage of basic farmland). Rice, wheat, and rapeseed are harvested in different seasons. Advanced cultivation techniques, as well as mechanized production are widely utilized across the village, so the

per unit yield difference between individual plots is very limited. In Shanglin there are six cement concrete roads, three east-west-oriented and another three north-south-oriented, each is between 1000 to 2000 m. In addition, there are many minor roads connecting villagers' residential area to their contracted plots so that each plot is accessible by motorized transport [14].

In history, the failure to develop TVEs in Shanglin during the 1980s helped preserve its environment, especially the high-quality farmland. Yet most of its villagers work in non-agricultural industries. More than 1800 people (of 2750 labor force) work in rural enterprises with their annual income amounting to RMB 20,000 (\$2440) in 2005 with additional social security coverage. In 2005, the income per capita in Shanglin reached RMB 9000 (\$1098, three times the national level), where the richest of its 80 business owners had a wealth worth RMB 10 million (\$1.22 million). On the other hand, farm work generates very limited revenue with only RMB 250 (\$30) per mu (a Chinese unit of area, 1 mu = 0.067 hectare), and is usually carried out by the women and the older generation. Agricultural production has become negligible or secondary. While peasants keep the land-use right, they lose their passion for agriculture and even lease their land to outside-the-village relatives or friends (before Shanglin LSC's establishment, 12% of the farmland was sublet by individual households). These are all the prerequisites for setting up the LSC.

In 2006, 117 households voluntarily joined together to form the Shanglin LSC with the Association of Economic Cooperation (AEC), a branch of the village government [6]. Both the households and the AEC converted their farmland into shares. (The AEC managed the collective "mobile" land which is mostly wasteland.) Each mu (1 mu = 0.067 hectare) of land is counted as one share with a fixed price of RMB 5000 (\$650). Within two years all 1131 households of the village joined the LSC. The households own a total of 2757.44 shares (individual shares), while the AEC owns 336.56 shares (collective shares), making Shanglin LSC's registered capital amount to RMB 15.47 million (\$2 million) [15]. Shanglin LSC turned out to be the first rural cooperative in Jiangsu (even nationwide) to obtain a business license using contracted land as registered capital. Functioning as a broker, Shanglin LSC made plans for the recentralized farmland and rented them out for agricultural production and related activities (Figure 2): Different plots of farmland are for different purposes like fruit and vegetable cultivation, high-tech ecological farming (like selenium-enriched rice) and agro-ecotourism. Such regional planning satisfies the strong demand for agricultural products and leisure activities by citizens in nearby big cities like Suzhou and Shanghai (Figure 1). At the same time, it enables sustainable land management.



**Figure 2.** Farmland usage after the establishment of Shanglin LSC.

## 2.2. Methodology

Sunan region is undoubtedly an ideal example for our study of the rural land cooperatives in China, as some other previous literatures did [13]. Yet the choice of Shanglin village was not preset. Through a retired rural cadre, we got to know Xi Yuexin, the CCP branch secretary in Shanglin. Thanks to their help, we were able to read and document village archives, audit village meetings, and communicate with local villagers through interviews and surveys.

Meetings with administrative cadres at county, township, and village levels were all held to identify policies, constraints, and opportunities related to the land cooperatives, such as local regulations on rural development, historical studies, land registration situation, status of the cooperative, solution to individual plots adjustment, land lease contracts, and measures, as well as advice from the local government.

Our interviewees included village cadres, land cooperative leaders, and ordinary villagers. Interviews with the first two groups were carried out in the Shanglin village administrative office building; while interviews with villagers took place on their farm land where each interview lasted for about one hour. Henri Mendras [16] used to argue that interviewing peasants was a difficult task since “they never said yes or no and they carefully hide their true feelings”. The Shanglin village interviewees are generally easy going. Village cadres had experience outside the village and expressed their own opinions without restraints when we informed them that these interviews are only for academic research purpose. Most villagers speak Wu dialect and do not master Mandarin, so they felt comfortable when we also talked to them using Wu dialect. The interviews with peasants are semi-structured: We tried to turn the “abstract” questions into a decomposed series of practices and events resulting in spontaneous answers that were rich in content.

Basic data in our study comes from questionnaire surveys conducted in Shanglin village from May to August 2009 immediately after all villagers joined the LSC. The questionnaire was first developed based on existing literature (like [17]) and information collected from elicitation interviews with local village cadres and ordinary villagers and revised according to Shanglin village’s specific situation. A pilot study was then conducted to test the questionnaire’s content validity: Twelve villagers (six men and six women) gave their comments and suggestions. The questionnaire was further refined based on their feedback. Certain questions related to physical components of the village (like types of crops, crop yield per unit area, and the distance between villagers’ house and their contracted plot) were dropped if we found that the answers were highly identical.

Shanglin is a small village with concentrated residential area (Figure 2) and highly homogeneous cultivated land as discussed in Section 2.1, so a simple random sampling (instead of stratified sampling) was taken. We communicated with adult villagers face to face in group meetings and individual household visits (without the presence of village cadres to ensure data reliability) and filled out the questionnaire. There were 150 copies of the questionnaire, each with 21 single-answer multiple choice questions that were distributed. There were 128 valid ones that were retrieved covering more than 10% of the village households; 22 copies had to be discarded either due to missing answers or more than one answer in a single question.

The questionnaire (please refer to Appendix A) was divided into four parts: (1) respondents’ personal and family socio-economic characteristics; (2) information on peasants’ membership in the cooperative; (3) external factors likely to influence peasants’ willingness to join the cooperative; (4) the flexibility of the cooperative’s shares. The answers were codified in Excel and analyzed using statistical analysis software IBM SPSS.

A logistic regression is applied to determine the major factors influencing peasants’ willingness to join the cooperative. Logistic regression (LR) is a widely used approach to analyze the relationship between a dependent binary variable with one or more independent variables. In our model, the binary



variable includes two groups of households: voluntary supporters (with value = 1) and passive ones (with value = 0). The LR model is represented as follows:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \sum_{i=1}^n \beta_i x_i \quad (1)$$

where  $p$  is the probability of households being voluntary supporters;  $1 - p$  is the probability of households being passive supporters.  $x_i$  is the  $i$ -th independent variable;  $\beta_0$  is the intercept; and  $\beta_i$  is the  $i$ -th estimated coefficient.

### 3. Results and Discussion

#### 3.1. The Role of Village Cadres

The development trajectory of the LSC shows that despite the prominence of incentives for individual rural household in their agricultural production and allocation of resources, village cadres are still responsible for many village-wide political activities and economic decisions. As rural elites, they actively participate in village governance and institutional innovations. On one hand, their activities are constrained by local politics and community. On the other hand, these constraints are not equal to limitation and are sometimes also a motivation.

The cadre responsibility system is a formal evaluation system used by superiors to measure a local officials' performance. It is widely applied to incentivize a variety of goals (like local economic growth, the one-child policy, or social stability), resulting in complex "report cards" which matter for officials' monetary reward/punishment, and more importantly their promotion [18,19]. Such political incentive leads to selective policy implementation by local officials. For example, in rural areas the land issue is often in dispute. If the land allocation is adjusted by force or requisitioned without adequate compensation, peasants will resort to group petitioning to claim their rights where such events will hamper a local cadres' career success. Accordingly they are motivated to pursue institutional changes related to land tenure reforms. Initiated by village cadres, the LSC facilitates them to fulfill priority targets in their evaluation.

De-collectivization fundamentally changes the configuration of power in rural China. The implementation of the electoral system has not only changed the source of power of village cadres, but also improved the village governance. Faced with the loosening of political control and peasants' growing sense of democracy, village cadres must rely on villagers to carry out economic programs. They must draft policies consistent with peasants' interests. "In Shanglin, each peasant has only 0.6 mu (0.04 hectare) of arable land on average and it is difficult to make a fortune on it. The youth under 30 prefer to study and work in the city, which also raises their social status. We must find a way to enrich everyone's living in the village. I am first a peasant, like other villagers, and I understand their expectations. The land cooperative can help achieve agricultural modernization and it is up to us (village cadres) to take the initiative." remarked Xi Yuexin, the CCP branch secretary. Rural democratization has changed local cadres' behavior. They no longer respond only to their superiors' orders, but devote more effort to the public affairs. They have become the representatives of the villagers [20].

The role of village cadres and their own interests are closely intertwined. As a rational agent, the ultimate goal of the rural leadership is utility maximization. Village cadres' salaries are financed by the village, so their income is directly linked to village's fiscal revenue. A decent salary enables cadres to concentrate more on implementing policies and managing rural affairs. The cadre responsibility system scores and ranks village cadres every year: The top ones are awarded the title of Model Leader, which will increase their chance of promotion. Ambitious and in their early 30s with a high school or college diploma, young village cadres all seek promotion within the bureaucratic hierarchy, even if it is not their first priority.

As a local resident, village cadres have family relationship or close friendship with other villagers, and their social interest is deeply rooted in the cultural network and daily life in the village. The closer the personal network, the more important the reputation or “faces” for village cadres, the more aggressive they are to utilize various resources to meet villagers’ needs and improve their welfare. Often, they try not to satisfy the superiors at the expense of local peasants.

Village cadres’ income levels, career path, as well as their social status in the local community all depend on whether they can retain the position in the villagers committee. They are the lowest-level executives to implement rural policies, but they also belong to the village community and work closely with fellow peasants. They must balance their personal interests, interests of township government and all the higher authorities, and those of their local constituents [21].

Land-use right, one of China’s most scarce resources is an effective instrument to help achieve village cadres’ goals. They use their de facto control over land resources to discipline villagers, with a carrot-and-stick approach [22]. In the case of Shanglin LSC, the land-use right is concentrated and each villager is guaranteed a dividend of RMB 600 (\$75) per mu (1 mu = 0.067 hectare) and enjoys priority job opportunities in the cooperative. The financial success of the cooperative even allows the village to pay a portion of the taxes/fees on behalf of villagers. The cooperative also helps village cadres achieve other priority targets, like family planning: Those households with a new-born single child are entitled to an additional 0.0067 hectare of land (thus more dividends) immediately as a reward to birth control, while it takes five years for other increased population to obtain lands.

The presence of the state power, the speed of marketization and the extent of community integration are three key factors defining the role of village cadres [23]. During the era of reform, the delegation of powers allows localities to make their own decision and rebuild the intact structure of the village. With the weakening of state power, the dominance and mobilization ability of village cadres actually depends on their relationship with peasants [24] (p. 83). Village cadres, through a triangular structure of the state, locality and villagers, explore a legitimate way to maximize the community’s interest. With the de facto control over land bestowed by the state, they build up a profit allocation mechanism with peasants through a certain type of rural collective organization. The application of such mechanism in Shanglin village is the LSC.

### 3.2. Peasants’ Attitude towards the LSC

The setting up of the LSC is the occasion of a confrontation between different interest groups: The State, the village community, and the peasants. Each group takes cost-benefit calculations beforehand, so it cannot be pre-assumed that all peasants would actively support this cooperative project. Individual decisions must be explained by taking into account both the cultures and the process by which the individual arbitrates between the different possibilities available to him and the influences that come through interactions with others [25] (p. 370). Our analysis is based on a field survey conducted in Shanglin village.

#### 3.2.1. Survey Results

Four main features emerged from the results:

Survey respondents may underreport their household income. Shanglin is an affluent village, according to CCP branch secretary Xi Yuexin. Its annual per capita income was RMB 11,800 (\$1685) in 2008, 2.5 times the rural income at the national level that year. Yet, there are discrepancies between the level of income according to our survey and the figures offered by Xi. More than 75% of the surveyed families (usually comprised of three to four people) claim that their household income was less than RMB 30,000 (\$4285) per year, as shown in Table 1. It is probable that peasants chose not to disclose their actual income since this subject is taboo, despite the anonymity of the questionnaire. Only 18% of those surveyed work full-time in agriculture (Table 2), while most villagers work in non-agricultural industries like rural enterprises and family workshops, the sectors which the majority of their household income comes from (Table 3).

Our survey finds that the LSC is widely accepted by peasants: Not only did all surveyed villagers join the cooperative, 60% of them enthusiastically did so in the first place. In the process of popularizing the cooperative, there are three categories of participants: The pioneers, the influential, and others [25] (p. 38). Unlike the circulation of land-use right (land transfer or subletting) which was a spontaneous act between peasants, to participate in the LSC by converting their land into shares is collective behavior. In their decision making process, individuals have to prudently calculate the costs involved but also pay attention to social motives [26].

**Table 1.** Household income.

Income in RMB	Number of Households	Percentage
<10,000	13	10.2%
10,000–20,000	47	36.7%
20,001–30,000	39	30.5%
30,001–50,000	18	14.0%
50,001–100,000	10	7.8%
>100,000	1	0.8%
Total	128	100.00%

**Table 2.** Professions of the head of household.

Professions	Number of Households	Percentage
Agriculture	23	18.0%
Mostly agriculture	26	20.3%
Mostly non-agriculture	39	30.5%
Non-agriculture	40	31.3%
Total	128	100.00%

**Table 3.** Major source of household income.

Source of Income	Number of Households	Percentage
Agriculture	15	11.7%
Mostly agriculture	23	18.0%
Mostly non-agriculture	56	43.8%
Non-agriculture	34	26.6%
Total	128	100.00%

More than 90% of the surveyed villagers admitted that when joining the LSC they did not understand how it operates, yet their ignorance did not keep them away. This new type of land tenure reform lacks role models or regulations and only 11.7% of respondents had experience with other forms (Table 4). The peasants have difficulty understanding the theoretical and ambiguous concepts, most of them only remembering the name, yet they still embraced it. It may be due to three main reasons, as show in Table 5. Firstly, most villagers work in non-agricultural sectors and do not have enough time to take care of their land. More than one third of the surveyed peasants hope that the new LSC can free them from heavy farm work. Secondly, villagers expect that the cooperative may produce more financial benefits: 23.4% of respondents believe that the centralized large-scale agricultural production can generate more income than traditional farming on the dispersed farmland. Finally, in a rural community with limited mobility and where families have interacted with each other for generations, it is necessary for peasants to be concerned about the reaction of fellow villagers and to comply with the social rules [27]. Thirty-six percent of the respondents decided to follow the crowd to join the LSC, so as not to offend the majority of the villagers and not to be excluded from the community.



**Table 4.** Experience with different forms of land-use right transfer.

Forms of Land-Use Right Transfer	Number of Households	Percentage
Partial surrender of land-use right	3	2.3%
Assignment of land-use right	1	0.8%
Subletting	11	8.6%
No transfer experience	113	88.3%
Total	128	100.00%

**Table 5.** Motivation to join the cooperative.

Motivation	Number of Households	Percentage
Lack of manpower to undertake farm work	46	35.9%
Higher income	30	23.4%
Increase in land value	3	2.3%
Follow the crowd	46	35.9%
Other	3	2.3%
Total	128	100.00%

On the other hand, 49% of the survey respondents were not fully satisfied with the decision making process for the establishment of the cooperative. The Shanglin LSC was initiated by village cadres, approved by the village committee, and legitimized by the local CCP branch. In the process of this collective behavior, each phase of decision making and the resulting consequences were closely monitored by individual villagers. Prior to the start of the cooperative, documents on the LSC system were posted on the public bulletin boards in the village. CCP branch members and village representatives were summoned to discuss the plan. Village representatives were then sent out to collect opinions of ordinary peasants and report to the village committee. Despite all these efforts, still half of the survey respondents were not satisfied. They think that though they were allowed to express opinions, the final decision was made by a small group of village cadres but not the general assembly of the village.

### 3.2.2. Logistic Regression Results

Based on the survey data we incorporate into the regression households' certain socio-economic characteristics (gender, age, education, profession, health condition, and income level) and some external factors likely to influence their willingness to join the cooperative. Tables 6 and 7 summarize these variables in the LR model and Table 8 reports the regression results.

**Table 6.** Dependent and independent variables.

Variable	Type	Range
Willingness indicator <sup>1</sup>	Categorical	voluntary and passive
Gender	Categorical	male and female
Age	Numeric	22–70
Education	Categorical	illiterate; primary school; junior high school; high school; college and beyond
Profession	Categorical	agriculture; mostly agriculture; mostly non-agriculture; non-agriculture
Health condition	Categorical	poor; moderate; good
Income per year	Categorical	below 10,000; 10,000–20,000; 20,000–30,000; 30,000–50,000; 50,000–100,000; above 100,000
Willingness to make payments to pension	Categorical	strong, moderate, none

<sup>1</sup> Dependent variable.

**Table 7.** Descriptive statistics.

Variable	Min	Max	Mean	Std. Dev
Willingness indicator	0.00	1.00	0.60	0.49
Gender	0.00	1.00	0.61	0.49
Age	22.00	70.00	46.90	11.51
Education	1.00	5.00	2.98	1.09
Profession	1.00	4.00	2.75	1.09
Health condition	1.00	3.00	2.70	0.52
Income per year	1.00	6.00	2.90	1.38
Willingness to make payments to pension	1.00	3.00	1.41	0.55

**Table 8.** Logistic regression results.

Independent Variable	Coefficient $\beta$	Wald Test	<i>p</i> -Value
Gender	2.869 ***	6.978	0.008
Age	0.001	0	0.993
Education	0.559	0.54	0.463
Profession (agriculture)	−5.366 *	3.333	0.068
Health condition	2.453 **	5.507	0.019
Income per year	−0.161	0.195	0.659
Willingness to make payments to pension	2.028 **	5.613	0.018
Percentage correct		93.8%	
−2 Log likelihood		59.702	
Chi-square test		112.426 ***	
Nagelkerke R square		0.791	

\*, \*\*, \*\*\* refer to significance at 10%, 5%, and 1% levels, respectively.

Three main findings emerge from the regression results.

It is revealed that full-time peasants are reluctant to join the cooperative, while there isn't significant relation between those working in non-agricultural industries and their intention to join the cooperative. During our interviews a few peasants confirmed that despite rough farm work, they still want to keep their individual tangible land (rather than intangible shares in the LSC), which defines their identity in the village. In this way, the LSC system may not be applicable in a traditional agricultural region where most villagers are full-time peasants.

There is a significantly positive relation between a peasant's health condition and his/her incentive to join the cooperative. Contracted farm land cannot be sold (or subleased quickly) to cover large medical expenses; rather, the land cannot generate any income in case of incapacitating illness. Those who are concerned about their health conditions (especially the elderly), instead of rendering their land idle, are willing to convert them into cooperative shares for a dividend.

There is also a significantly positive relation between those who are willing to contribute to rural pension scheme and their incentive to join the cooperative. The pension scheme was recently introduced to rural China and those who are most willing to make payments are in their 40–50s, approaching retirement ages (Table 9). They are fully aware that they are not able to undertake farm work for long and that there may not be routine financial support from their children. Pension plans and membership in the LSC will become two effective livelihood guarantees when they get old.

**Table 9.** Willingness to make payments to pension scheme.

Age	Strong	Moderate	None	Total
20–29	7	3	0	10
30–39	19	10	0	29
40–49	21	15	1	37
50–59	25	8	1	34
≥60	8	8	2	18
Total	80	44	4	128

The relation between villagers' incentive to join the cooperative and their education or income level is statistically insignificant (though the signs of estimated coefficients are intuitive), which is against our initial expectation. As discussed in Section 3.2.1, more than 90% of surveyed villagers were ignorant about the LSC system before joining the cooperative. So we argue that in the case of Shanglin higher education levels do not contribute to better knowledge of the cooperative, and in turn do not have a statistically significant relation with villagers' incentive. We also notice that the increased annual income from the cooperative's dividend is small with RMB 210 (\$30) per capita  $((600 - 250) \times 0.6 = 210)$ , taking up less than 2% of Shanglin villagers' average annual income in 2008. With existing decent income from other industries, income improvement is not the top two reasons (as seen in Table 5) to influence villagers' decision to join the LSC and the negative relation between the income level and their willingness is statistically insignificant.

From both the survey and regression results, we clearly find that Shanglin peasants' economic behavior is neither incompetent nor irrational; they shrewdly calculate the gain or loss before decision making. While they are not isolated individuals, but must behave according to the current rules in the society they belong to, so they are influenced by their entourage. The cooperative, as a mechanism of change initiated by village cadres, is essentially collective and social in nature. It is within this common system that everyone calculates for themselves, whereas the system should impose its logic so that individual projects can be combined.

### 3.3. Performance of the Land Shareholding Cooperative System

The land shareholding cooperative system is a major institutional innovation in rural China since the introduction of the household responsibility system (hereafter, referred to as responsibility system) in the late 1970s. It retains the incentive mechanism derived from the responsibility system, while overcoming the disadvantages of equitable distribution of farmland. It is like a compromised improvement/modification to the land contractual rights. Respecting the collective ownership, thus circumventing the strict institutional restrictions, the LSC system enables a moderate concentration and large-scale exploitation of rural land. A Pareto improvement, it achieves economic, social, political, and environmental progress.

The LSC system allocates different elements within the right of ownership (*abusus, usus, fructus, and possessio*) to different entities. The right to dispose land (*abusus* and *possessio*) remains in the hands of the village community while the right to use land (*usus*) is held by the cooperative who then grants this right to individuals/enterprises by contract. The right to derive profit from land (*fructus*) is shared between the community, the cooperative's shareholders, and land contractors. This separation of rights allows different interest groups to obtain their own financial gains according to their specific right.

Peasants' benefit is clarified through the quantification of rural land resources by professional accounting and auditing agencies. Their status as shareholders in the cooperative is ensured by the share certificate, which in turn guarantees their claim on the dividends every year. On the other hand, the LSC derives income mainly from leasing the farmland. By registering with the local government and obtaining an operating license, the cooperative strengthens its management rights and is under judicial and administrative protection in case of any dispute.

The LSC system represents a hybrid form of capitalist shareholding, and socialist cooperative institutions [28]. The cooperative's members, as principals, authorize the cooperative as an agent to manage farmland on their behalf and thereby entrust part of their decision-making power to the agent. In general, there might be a principal-agent problem. The solution is that the cooperative be administered by elected member representatives. Suggested by the local CCP branch, every thirty households of villagers form one villagers group. Each group elects one delegate with the highest votes as the member representative. The general meeting of member representatives becomes the decision-making body in the cooperative. The LSC system is characterized by its indivisible relationship between shareholders and managers. Representatives, board of directors, and board of supervisors are members of the cooperative at the same time; they share common interests with ordinary members.

The LSC system reduces agricultural production risk faced by peasants, providing them with a more stable income through dividends and job opportunities. Dividend payment from the cooperative which increases each year offers villagers mainly undertaking non-agricultural activities a means of “leaving the farmland without leaving their native land”. Although peasants abandon their individual *usus*, the cooperative guarantees their *fructus* and accompanied profits, and lowers their opportunity cost to participate in industrialization and urbanization. Some villagers, especially women and the elderly who may not easily find a job in TVEs can greatly supplement their household income by working for the cooperative.

The LSC also enables sustainable land use through ecological farming. Experts from Suzhou Agricultural Research Institute were recruited to develop new crop varieties and selenium-enriched rice was introduced for large-scale production. Priced as high as \$2 per kilogram, this type of rice is pre-booked even before the harvest. In the farmland auction organized by the LSC, ecological farming is considered a priority and those projects enjoy a discounted rent. Small pilot fields are even offered freely to certain projects like Bonsai cultivation.

By consolidating peasants’ land-use right, the cooperative centralizes the decision-making power over land management and investment, so that peasants as a whole have more bargaining power in the market. The cooperative carries out land utilization planning for various purposes: agricultural zone, residential area, and industrial zone. Thanks to the cooperative’s coordination, plots for residential purpose are concentrated and the land intended for agriculture is also connected after the exchange of plots. This adjustment greatly facilitates the land leveling projects. The cooperative is in charge of infrastructure construction such as roads, electricity, telecommunications, water supply, and natural gas. Then it conducts tenders of land-use right, collects rents and distributes dividends among member peasants. In addition, the cooperative forms a powerful entity to prevent encroachment upon their land and to protect their interests.

The LSC system motivates the rural population to participate in free elections so that villagers are no longer excluded from village governance. The cooperative is governed by its elected members who are actively involved in policy drafting and decision making. According to articles 10 and 11 of Shanglin LSC Charter, “every member in the cooperative has the right to vote and to be elected representative of the members. Every member has the right to supervise the finance and administration of the cooperative”. Also the general meeting of member representatives votes to ratify the principle of private plots adjustment and the LSC Charter. These regulations are accepted by all members and become internal disciplines for the village community and serve as a reference tool to reconcile conflicts.

The LSC is an ideal entity to internalize the positive externalities of public goods. Shares held by the Association of Economic Cooperation (AEC, a branch of village government we discussed in Section 2.1) generate proceeds to provide public service to the village community. For example, three multi-purpose activity rooms with daily maintenance are offered to all villagers free of charge. The cooperative strengthens environmental governance: RMB 900,000 (\$128,570) was spent by the LSC on the construction of water conservation systems and sewage treatment works. It also invested RMB 7 million (around \$1 million) on waste disposal and reforestation. Regular street sweeping, 230 trash dumpsters and a 16,000-m-long river canal are well maintained by 35 people recruited by the LSC.

As a new institutional arrangement, the LSC system helps achieve liquidity in factors of production (labor and land) and increased agricultural productivity. This system maintains collective ownership of land while transferring peasants’ land contractual rights to shares in the cooperative in order for optimal land use and management. It did not depart from the egalitarian principle of distribution, but tried to figure out a compromise between equity and efficiency.

### 3.4. Deficiencies in Shanglin LSC

The LSC system is developed in a context of legal ambiguity in the definition of collective ownership and a complex political-economic relationship. Despite Shanglin LSC’s decent financial

and social performance, this arrangement is far from perfect and its loss of efficiency in certain aspects may hamper its long-term development.

Its organization is characterized by the merger of the villagers committee, the CCP branch and the cooperative, so the LSC performs economic, political and social functions at the same time. Its objectives are not confined to productivity improvement or profit maximization, but also include job creation and public service provision. The Shanglin LSC offers its villagers more than 100 jobs related to security, sanitation, electric power, and plumbing and it also partially sponsors the salary paid to village cadres like the head of the women's association. Such spending amounts to RMB 1.5 million (more than \$0.2 million) each year. The LSC also pays for villagers' social security, provides minimum living allowance to certain poor peasants and rewards those pursuing college education or joining the army.

There may be some clash between the administrative authority and the LSC's economic autonomy. Acting as a quasi-government agency, the LSC is obliged to carry out objectives like birth control, assisting disabled veterans, militia training, and funding public schools. A portion of its revenue is spent to provide such public services which are normally offered by the government. These expenditures will inevitably result in a reduced net income for the LSC and a minor increase in dividend distribution to its members.

There may be some confusion between the political and economic power in the LSC. Although the general meeting of member representatives is the ultimate decision-making body of the cooperative, a large proportion of the representatives are also CCP members. These representatives must simultaneously play the role of the peasants' spokesperson and follow the CCP branch's guidelines. Their dual status has often placed them in a delicate position. On the other hand, village authorities, with their privileged access to information, have the competence to initiate and coordinate economic activities and are de facto in a position to impose their choices on the cooperative in order to give priority to their own objectives.

According to the Shanglin LSC Charter, the cooperative must be democratically governed by its members, yet due to imperfect and asymmetric information, ordinary peasants lack effective means for monitoring the LSC's operation. Though some villagers (shareholders) enter the board of directors through election, they have neither the experience nor the expertise for corporate leadership, but instead rely on village cadres to manage the LSC [6]. What counts for villagers is only that the distributed profit increases every year. In practice, important decisions are usually made by a handful of people, often LSC executives and small private entrepreneurs in the community.

The LSC membership is not open to non-villagers: "village citizenship" is the entry criterion, as all the peasants in the village community collectively own the farmland and enjoy the land-use right through contract. To protect the integrity of the LSC's asset, transfer of LSC shares on the market is currently prohibited. This situation hampers the normal population movement: villagers stay in the village so as not to lose their shares (and dividends). From the perspective of Game Theory, this form of organization has changed the nature of collective bargaining from a repeated game to a one-time game. If members are not satisfied with the choices, which are made on their behalf by their representatives in the LSC, they are not able to exit the cooperative or regain their land-use right. The vote with the feet evoked by Charles Tiebout [29] does not work here.

## 4. Conclusions and Policy Implications

### 4.1. Conclusions

In today's China the household responsibility system has already revealed its limitation to increase agricultural productivity or promote rural development. Chinese grassroots reformers adopted a gradualist approach to land tenure reform: Without challenging the existing collective ownership, the land shareholding cooperative (LSC) is introduced to clarify and strengthen peasants' rights to freely use and profit from their contracted land. By re-collectivizing the separated land-use



rights, it enables large-scale exploitation of rural land for modern agricultural production. It not only increases peasants' income through dividends and employment opportunities, but also provides public service as well as social security to the village community.

The LSC system is an institutional innovation in an era of transition and its establishment depends on certain prior conditions. It is developed in regions with high levels of industrialization and urbanization; Traditional agricultural regions may not be suitable for the LSC system. Even in economically advanced regions, LSCs' success is never guaranteed. Like any other corporations, the LSC has to take into account profit realization and capital accumulation. While under many circumstances the LSC is also expected to provide public service. LSCs' multiple missions may contradict each other and are not completely compatible with the norms of modern society aiming at profit maximization.

China does not currently have the complementary institutions that are necessary for land privatization. And it is widely accepted that institutions in the Western world (like property rights and judicial systems) do not necessarily have to be copied faithfully in developing countries; the key lies in the incentive mechanism created by such institutions. The LSC system is induced by the bottom-up invention of new organizations and formation of a new market, so village cadres' initiatives together with villagers' willingness significantly contribute to the cooperative's successful establishment and development.

#### 4.2. Policy Implications

To establish sustainable land use and management, certain land tenure reform (like the LSC system discussed in this paper) is required as a prerequisite. With concentrated farmland, better regional planning can help select high value-added crops and develop other industries corresponding to a specific village's characteristics.

The LSC system may be applied to certain regions with high levels of industrialization and urbanization. This system is more likely to succeed in regions close to large cities where city dwellers' demand for agricultural products and leisure activities is high. The LSC should give priority to ecological farming projects in the land auction and play the role as a platform to offer expertise information and advice on sustainable land management to tenants who rent the farmland.

With the authority's ongoing endorsement it is predictable that different types of LSCs will proliferate in rural China in the future. We suggest that region-specific characteristics are to be extensively understood beforehand and villagers' voluntariness should be well respected. Sometimes this approach to land tenure reform cannot be universally applied to some regions in China.

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#### Appendix A. Survey Questionnaire

Please select only one answer that best applies.		
1. What is your gender?		
(1) Male	(2) Female	
2. Your age is _____		
3. What is the highest level of school you have completed?		
(1) Illiterate	(2) Primary school	(3) Junior high school
(4) High school	(5) College and beyond	

4. In which industry do you work?			
(1) Agriculture	(2) Mostly agriculture	(3) Mostly non-agriculture	(4) Non-agriculture
5. How is your health in general?			
(1) Poor	(2) Moderate	(3) Good	
6. What was your total HOUSEHOLD income last year in RMB?			
(1) Below 10,000	(2) 10,000–20,000	(3) 20,000–30,000	(4) 30,000–50,000
(5) 50,000–100,000	(6) Above 100,000		
7. Which industry is your household's major source of income?			
(1) Agriculture	(2) Mostly agriculture	(3) Mostly non-agriculture	(4) Non-agriculture
8. How many people are there in your family? _____			
9. Did you contribute to rural pension scheme last year?			
(1) Yes	(2) No		
10. Your willingness to make payments to pension scheme?			
(1) Strong	(2) Moderate	(3) None	
11. Your attitude towards the land shareholding cooperative:			
(1) Voluntarily join	(2) Passively join	(3) Not join	
12. Why do you join the cooperative?			
(1) Lack of manpower to undertake farm work	(2) Higher income		
(3) Increase in contracted land value	(4) Follow the crowd	(5) Other	
13. BEFORE joining the land shareholding cooperative, how much do you know about it?			
(1) Quite a lot	(2) Somewhat	(3) None	
14. What is your former experience with land-use right transfer?			
(1) Partial surrender of land-use right	(2) Assignment of land-use right		
(3) Subletting	(4) Do not have any experience		
15. Are you now satisfied with the cooperative's daily operation?			
(1) Satisfied	(2) Somewhat satisfied	(3) Not satisfied	

Note: Questions 16–21 in the questionnaire are purposely omitted. Those questions were about the respondents' opinions on future path of land tenure reform in China and their suggestions. This paper does not explore those issues.

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