Social Capital, Member Participation, and Cooperative Performance: Evidence from China's Zhejiang

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Abstract

Despite the position of farmer cooperatives in markets and their social capital based characteristics, neither the definition nor the role of social capital in farmer cooperatives has been broadly investigated. Thus, this study seeks to develop a framework for defining and clarifying various aspects of social capital and examines the effects of social capital on members' participation in collective activities and on the economic performance of farmer cooperatives. Social capital is indicated in terms of three dimensions, i.e., the external, relational, and cognitive dimensions. A statistical model is applied to a database consisting of 147 farmer cooperatives in China's Zhejiang province. The results demonstrate a positive relationship between certain dimensions of social capital and members' participation in training and general meetings. In addition, each dimension of social capital has a significant and positive impact on the economic performance of cooperatives.

Keywords: farmer cooperative, social capital, member participation, economic performance, China

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Background

The changing structure of agricultural production, the specialization of supply chain participants, and the diversification of consumer demand have led to challenges for small farmers (Hazell et al. 2006). Farmer cooperatives have emerged to address market failures caused when these challenges become problems (LeVay 1983, Hansmann 1996, Valentinov 2007). However, cooperatives may not be sufficiently competitive in terms of financial capital and human capital compared with capitalistic firms due to the member patronage and member control features of the cooperative governance structures (Cook 1995, Lin and Ma 2006, Royer and Smith 2007, Tribl 2009). A governance structure specifies ownership rights, decision rights, and income rights over (both physical and financial) assets (Hansmann 1996). Cooperatives are defined as member-owned, member-controlled, and member-benefiting governance structures (Dunn 1988).

The ownership characteristics of cooperatives and the features of collective decision making make cooperative governance relatively 'expensive' in terms of transaction costs (Valentinov 2004). Unlike a market in which two actors are involved or investor-owned firms in which authority is held by a few investors, cooperatives are characterized by high involvement and interaction among all members in decision making and in the distribution of benefits. Therefore, interpersonal relations are the foundation upon which internal transactions are based. Social capital is a concept that addresses and facilitates cooperation, relationships, and trust (Beugelsdijk and van Schaik 2005). As Valentinov (2004, 5) posits, "cooperatives are a special, social capital-based, type of organization." Capital is collectively owned by all the members of the group. Social capital is more essential in cooperatives than in other types of governance structures. The role of social capital in cooperatives is comparable to that of physical or financial capital in investor-owned firms or that of human capital to the individual. Chloupkova et al. (2003), regard farmer cooperatives as a proxy of social capital, pinpointing the network component of social capital.

Social capital is increasingly recognized as an important factor influencing economic performance (Beugelsdijk and van Schaik 2005). Over the last two decades, many cooperatives have transformed from democratic organizations into more capitalistic- or economic-oriented organizations (Nilsson et al. 2012). The decline of social capital in cooperatives is understood as a reason for and a consequence of the transformation. As the size of organizations and member heterogeneity expand, cooperatives have become oriented more toward corporate governance (Hind 1997). Professional management has taken advantage of members' control in traditional cooperatives (Lang 2006). Members' commitments to their organizations – and the trust between members and managers – have been weakened (Hogeland 2006). Moreover, there is less communication, collaboration, and meaningful interaction among members (Nilsson et al. 2012). All these changes lead to the result that cooperatives have lost and are losing social capital (Nilsson et al. 2012).

Despite the position of farmer cooperatives in markets and awareness about their social capital-based characteristics, the definition and measurement of social capital in farmer cooperatives have not yet been broadly investigated, and there is little empirical evidence to support the concept in these organizations. Social capital has been widely investigated in corporate studies but not yet in studies of cooperatives (Cooke and Clifton 2004, Wu and Leung 2005, Westlund

2006, Zhang and Fung 2006, Lee 2009, Westlund and Adam 2010). Thus, this research seeks to formulate a framework for defining and clarifying the various aspects of social capital and to examine the effects of social capital on cooperative members' behaviors and on the performance of farmer cooperatives. To be specific, the research questions are as follows:

1. What is the composition of social capital in farmer cooperatives in China?
2. Does social capital influence members' participation in the collective activities of their cooperatives?
3. What are the impacts of social capital on the economic performance of cooperatives?

This study makes various contributions. First, we add to the literature regarding the composition, measurement, and role of social capital as it pertains to farmer cooperatives. Although there are a number of studies on the role of social capital in political contexts (Putnam 1993, Chloupkova et al. 2003) and in for-profit firms (Nahapiet and Ghoshal 1998, Tsai and Ghoshal 1998), little attention has been paid to the effects of social capital on the economic performance of farmer cooperatives. Due to the social capital-based nature of cooperatives, this issue seems even more important. Second, data from Chinese farmer cooperatives are used to explore the role of social capital. Both economic and political agents in China are characterized by the high involvement of "Guanxi" – which roughly translates as "relationship" – in conducting their activities (Putnam 1993). Due to the distinctive features regarding social capital in farmer cooperatives in China compared with those in Western countries, specific theories and measurements of social capital in Chinese cooperatives are desirable. However, there are few studies delineating social capital in Chinese farmer cooperatives. In addition, there are not yet any empirical studies regarding social capital in cooperatives that address subjects such as the effect of social capital on member participation and the performance of cooperatives.

The remainder of this paper is organized as follows: the theory and hypotheses for this study are formulated in the next section. This is followed by the chosen methodology and a summary of the data and results. This is followed by a discussion and conclusions.

Theory

Concept of Social Capital

Physical capital, human capital, and social capital are three basic inputs that generate productivity and economic benefits (Adler and Kwon 2002, Granovetter 2005). Physical capital, including financial assets, consists of the material resources used to improve flows of future income, whereas human capital refers to the knowledge and skills that individuals use to solve problems. Social capital is the arrangement of human resources to improve the flow of information to generate future income (Ostrom 1994).Social capital refers to "any features of social organization, such as networks, norms, and trust, that facilitate coordination and cooperation for mutual benefits" (Putman 1993). Although it benefits individuals, social capital is a community-level concept and a 'public good' (Uphoff and Wijayaratna 2000). In addition, social capital frequently increases the investment in physical and human capital (Coleman 1988, Putnam 1993). We therefore define social capital as the networks that facilitate interactions between individuals.

51

Social capital is studied mostly at the macro level, both at the national and regional levels, and the role of organizational level social capital has also been examined. Scores of studies by political economists and economic sociologists have emphasized social capital's importance in economic and social development. Based on an experiment in Italy, Putnam (1993) concludes that governmental performance and economic progress may be enhanced by social capital. Different levels of social capital may result in inequalities on the job market, in education, in gaining access to healthcare services, etc. Alternatively, Putnam (1993) also argues that deficits in social capital can lead to the decline of social activities and that the economic effects of social capital therefore can be as great as the effects of financial and human capital. He concludes that "social capital is not a substitute for effective public policy but rather a prerequisite for it and, in part, a consequence of it". In a later article, Putnam (1995) argues that a substantial stock of social capital facilitates coordination and communication, incentivizes future cooperation, and reduces opportunism. Chloupkova et al. (2003) compare the level and building of social capital in Denmark and Poland against the background of these countries' cooperative movements. Denmark had a significantly higher level of social capital in the 1990s. The communist system and centrally planned economies in Poland limited the development of entrepreneurship and various social organizations, which led to the destruction of social capital. Uphoff and Wijayaratna (2000) demonstrate the benefits of social capital with respect to the productivity of water irrigation systems in Sri Lanka. Social capital plays a role akin to 'organizational software', which makes the 'physical hardware' of irrigation facilities more productive.

The role of social capital in organizations has been investigated by a few studies. Nahapiet and Ghoshal (1998) find that social capital facilitates the creation and sharing of intellectual capital in firms and that the absence of social capital has negative effects. The high level of social capital may ossify cooperation and exchanges because the scope of ideas and information is restricted. The contributions of social capital to firm innovations (Tsai and Ghoshal 1998, Cooker et al. 2005) and the formation of human capital (Coleman 1988) are identified. Various aspects of social capital have inter-associations and impact firms' product innovation by facilitating resource exchange and resource combinations (Tsai and Ghoshal 1998). Cooker et al. (2005) demonstrate the performance of firms that have different levels of social capital in a database consisting of 455 small and medium-sized firms in different regions of the UK that enables the authors to find positive associations between social capital and firm performance in terms of innovation and business growth.

Social capital in farmer cooperatives is examined in several papers (Valentinov 2004, Luo and Wang 2013). Social capital in organizations is accumulated to fulfill aims in terms of maximizing owners' or members' interests (Westlund and Adam 2010). Capitalist enterprises are characterized by profit orientation, whereas cooperatives feature a high level of member involvement in decision making and high intra-organization coordination costs. Social capital is thus an important supplement to formal institutions and governance in cooperatives. Cooperatives are considered to have certain incentive problems and coordination difficulties whose solution requires social capital. Valentinov (2004) therefore argues that "social capital is best governed by the cooperative governance." Social capital acts as both organizational principle and resource in cooperatives. However, social capital benefits those cooperatives with relatively small memberships, in particular. Returns from financial and physical capital exceed those from social capital in larger cooperatives. Luo and Wang (2013) confirm the role of social

capital as an instrument for solving the collective action dilemma in Chinese farmer cooperatives. Social capital is essential in informal institutions that compensate the limited presence of laws and bylaws regarding farmer cooperatives.

Indicators of Social Capital

Social capital is complex and difficult to measure. Until now, social capital has not been measured directly and is frequently reduced to one or even a part of one of its indicators. At the macro-level, Chloupkova et al. (2003) use three indicators for social capital: membership in voluntary organizations, trust, and civic participation. Another popular indicator system regarding macro-level social capital is developed by Putnam (1993), in which networks, norms, and trust are the three indicators of social capital. Networks are referred to as social relationships. Many studies emphasize the network dimension of social capital and even equate networks to social capital. Norms specify what actions are acceptable or unacceptable (Lyon 2000), whereas trust is the confidence or belief in other agents that perseveres in spite of uncertainties, risks, and opportunisms (Misztal 1996).

Tsai and Ghoshal (1998) demonstrate the ingredient of social capital at the firm level and distinguish the following three dimensions of social capital: the structural dimension, the relational dimension, and the cognitive dimension. The structural dimension of social capital refers to the social networks or social interactions of a firm that can be used to access specific resources or facilitate transaction. The relational dimension of social capital is the trust and trustworthiness embedded in the organization or among its members. The cognitive dimension pertains to the shared vision that facilitates the understanding of collective orientation and ways of acting in an organization. This analysis of the three dimensions of social capital is used mostly in business and management studies (Lee 2009). In addition, there are associations among the different dimensions of social capital. Structural social capital may stimulate trust and trustworthiness, which represent the relational dimension of social capital (Tsai and Ghoshal 1998). The structural and relational dimensions of social capital can be conceptualized, respectively as inter-organizational trust and interpersonal trust within an organization (Zaheer et al. 1998). Moreover, a common understanding of the organization's goals and mission, which represents the cognitive dimension of social capital, may also help develop trust within the organization (Tsai and Ghoshal 1998).

We distinguish three dimensions of social capital based on Tsai and Ghoshal (1998) and by incorporating the feature of cooperatives. They are external dimension, relational dimension, and cognitive dimension of social capital. External social capital refers to inter-organizational networks that a cooperative is engaged, whereas both relational and cognitive dimensions are intra-organizational social capital. Relational social capital is the trust among members and between members and managers, while cognitive social capital indicates the collective orientation of members in a cooperative.

Different types of firms operate differently and may vary with respect to each dimension of social capital as well. However, according to our knowledge, there is no systematic theory regarding social capital for different types of firms. The embeddedness of cooperatives makes the external dimension of social capital more concerned with the local community and social

connections than investor-owned firms (IOFs), in addition to marketing and financial stakeholders (Xu 2005, Nilsson et al. 2012). Cooperatives, which are owned and controlled by their members, are characterized by dual types of attributes, an economic attribute and a social attribute, which makes them proxies for the formation and development of social capital (Nilsson and Hendrikse 2011). Internal social capital in cooperatives – the relational and cognitive dimensions of social capital –is an important resource in cooperatives (Nahapiet and Ghoshal 1998, Nilsson et al. 2012).However, IOFs maximize financial profits; thus, inter-trust among employees – and also between employees and shareholders – is subordinated to financial returns. Cooperatives require a high level of intra-organizational social capital to ensure the loyalty and commitment of members (Feng et al. 2011).

Social Capital in Chinese Farmer Cooperatives

Farmer cooperatives in China emerged in the 1980s and have developed quickly since that time. As of the end of 2013, there are almost one million farmer cooperatives, with a total membership of 73 million farmers. Approximately 28.5% of farmers join farmer cooperatives.[1] Cooperatives in China are facing transformations in terms of both internal governance and organization models. Some farmers have substantial capabilities in marketing and management and hold most income rights and decision rights in cooperatives, whereas most common members are seldom involved in decision making and have little power (Liang et al. forthcoming).

Social capital in farmer cooperatives in China has distinctive characteristics over those in Western countries. There are two dimensions of features. First, "Guanxi" is particularly important for political, social, and economic activities in Chinese society (Putnam 1993). Farmer cooperatives are not an exception. Considering the "Guanxi" culture in China, social relationships may play an even more important role in Chinese farmer cooperatives than in other countries. In fact, "Guanxi" is generally held by a few elite farmers rather than by common farmers (Xu et al. 2013). These elite farmers, referred to as core members, initiate farmer cooperatives and hold most of the authority over decision making in cooperatives (Liang and Hendrikse 2013). Core members have substantial capabilities regarding marketing, management, and/or social networks (Li and Zheng 2008, Xu et al. 2013, Liang et al., forthcoming). The social networks relevant to these core members are in close contact or have relationships with governmental departments, downstream wholesalers, and/or other stakeholders in the supply chain. Core members use their social networks to facilitate their own welfare while also increasing the welfare of the other members in the cooperative (Li and Zheng 2008). Thus, the social networks of core members can be regarded as the publicly owned social capital of the cooperative. However, in many Chinese studies, the social networks of core members are taken as the complete content of social capital, which causes insufficient measuring of social capital(Li and Zheng 2008).

Second, farmer cooperatives in China feature small scales and locality (Liang and Hendrikse 2013). Members are basically from the same town and know one another relatively well, which establishes a community-based cooperation foundation and an even more important role of social capital in China (Xu 2005, Zhao and Li 2007). Community is considered a central governance of

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[1]**Data source.**The ministry of Agriculture of the People's Republic of China, http://www.moa.gov.cn/

social capital (Bowles and Gintis 2002, Hayami 2009). Communities featured by social capital address some market and state failures by solving problems when individuals interact in ways that cannot be regulated by complete contracts due to the complexity of the transactions. A series of conventional norms are created based on community-based member relationships. The reputations of members or managers are damaged if they betray the norms, which can be a substantial punishment for them.

Hypotheses

We develop three indicators to represent social capital, i.e. external dimension, relational dimension, and cognitive dimension. Four hypotheses regarding the impacts of social capital on member participation and economic performance are formulated in this subsection.

Social Capital and Member Participation in Farmer Cooperatives

The association of social capital with civic participation has frequently been investigated (Putnam 1995, Chloupkova et al. 2003, Teorell 2003). In a society with a high level of social capital, civic engagement of citizens – as embodied in practices such as voting, newspaper readership, and memberships in clubs –is popular (Putnam 1993, 1995). However, engagement in social and cultural associations is weak in cities where there are low levels of social capital. Civic engagement can further facilitate information provision, coordination, and communication, can promote the effectiveness of the government, and may even be a precondition for economic development.

Applying social capital in the role of personal participation in organizations is inadequate. Uphoff (1992) maintains that social capital can promote cooperation and participation in cooperative actions at both the personal and the organizational levels. Olstrom (1994) emphasizes that social capital is a prerequisite for farmers to undertake collective actions. The importance of different forms of social capital to participation varies (Brown and Ashman 1996). The relational and cognitive dimensions of social capital may be more important to facilitate collective action, whereas the external social capital exerts an indirect influence. Therefore, we present Hypotheses *1a*, *1b*, and *1c*:

H1a: Relationships between the chairperson and stakeholders of a cooperative–which represents the external social capital–have no direct influence on members' participation in collective activities.

H1b: A higher level of trust within a farmer cooperative–which represents the relational dimension of social capital–facilitates members' participation in collective activities.

H1c: The understandings of collective orientation and mission that members hold in common within a farmer cooperative–which represents the cognitive dimension of social capital–promotes members' participation in collective activities.

55

Social Capital and Economic Performance

Networks are essential to the development of cooperatives (Novkovic2013). Firms are generally embedded in social networks with other actors (Andersson et al. 2002). Inter-organizational relationships between firms can be a source of competitive advantage (Dyer and Singh 1998). Stable and broad social networks with transaction partners not only eliminate opportunistic behaviors but also gain additional information and sources. Networks can affect enterprise performance directly by providing entrepreneurs with information about technologies and markets. As technical information and market information grows, it has a direct effect on a firm's productivity or help enterprises become more competitive. Innovation may also occur due to information exchange and trust among partners (Knack and Keefer 1997). Social networks extend the resource exchange and linkages between individuals and groups, which promotes product innovation and speeds the diffusion of innovations (Robison et al. 2002, Tsai and Ghoshal 1998). Moreover, new economic opportunities may arise from social capital-based networks (Bingen et al. 2003).

External networks and the social ties of cooperatives with both vertically and horizontally related organizations –including input suppliers, clients, cooperators, competitors, and the government – affect the performance of farmer cooperatives. First, these networks and social ties facilitate the exchange of information within networks and save on information costs. Under the condition of information asymmetry, reliable relationships with transaction partners and governments can help farmer cooperatives save on costly negotiations (transaction costs) and on information-searching processes. Moreover, previous experience and/or close contact with a partner generate helpful information (Hagedoorn 2006). For example, the government tends to provide subsidies to cooperatives that are in close contact with it. Second, social ties help reduce opportunistic behaviors between members of a network, which makes negotiation less costly (Zaheer et al. 1998, Gulati et al. 2000). Firms within the network conduct transactions on the basis of long-term cooperation. Thus, they hesitate to behave opportunistically to maintain their reputation. Therefore, we present Hypothesis 2:

> *H2: Closer relationships between the chairperson and stakeholders of a cooperative –which represent the external dimension of social capital –produce better economic performance for the cooperative.*

Social capital provides an informal institutional framework with shared information, cooperation, and collective decision making (Zhao 2003). A person spends less to protect himself from opportunistic behaviors during transactions in the context of high levels of trust. Trust between persons can be a substitute for contracts to a certain extent. According to Arrow (1972), trust is essential in every transaction. People working together try to find better ways of making possible achievements that, in the absence of social capital, would be not possible (Ostrom 1994, Coleman 1988). Innovation in the form of new products or technology may be discouraged in a low trust group, due to managers devoting more time to preventing malfeasance by employees or members and less time to innovation (Knack and Keefer 1997).The more trust that members share, the fewer transaction costs they pay. Both the flow and quality of information are improved, and better outcomes are achieved (Granovetter 2005).The benefits of trust on firm

    56

performance have been widely investigated and recognized (Hansen et al. 2002, Keefer and Knack 1997).

Cooperatives are characterized by dual attributes, an economic attribute and a social attribute (Hendrikse 2007). Both profit maximization in the market and members' economic and non-economic benefits are pursuit of cooperatives. Valentinov (2004) argues that interpersonal relations between members have an essential influence on the coordination and decision-making costs of a cooperative. Trust solves problems of "common property" or vaguely defined property rights problems (Narayan and Pritchett 1997). Nilsson et al. (2012) believes that the trust that members have is the resource base of cooperatives. This trust creates possibilities to cooperate and smoothes communication and coordination within a cooperative, which reduces transaction costs and generates economic benefits. Therefore, we present Hypothesis 3:

H3: A higher level of trust within a farmer cooperative – which represents the relational dimension of social capital – leads to better economic outcome.

Ostrom (1994) notes that farmers must understand the principles, decision rights and benefit allocation rules; in addition, they must understand development and financial status and other various strategies of cooperatives. Members' common interests or a common understanding of goals is one of the factors critical to the success of farmer cooperatives. First, a common understanding of collective orientation and missions strengthens members' identification, sequentially contributing to build trust and to minimize opportunistic behavior (Ouchi 1980, Rudd 2000, Ole Borgen 2001, Pearson et al. 2008). Second, homogeneity in members' interests holds members together, eliminates misunderstanding during communications, and saves on decision-making costs. Third, more shared goals among members in an organization contribute to knowledge sharing (Chow and Chan 2008). The costs of information searching and transmission are low in a firm with a good knowledge sharing base. We therefore present Hypothesis 4:
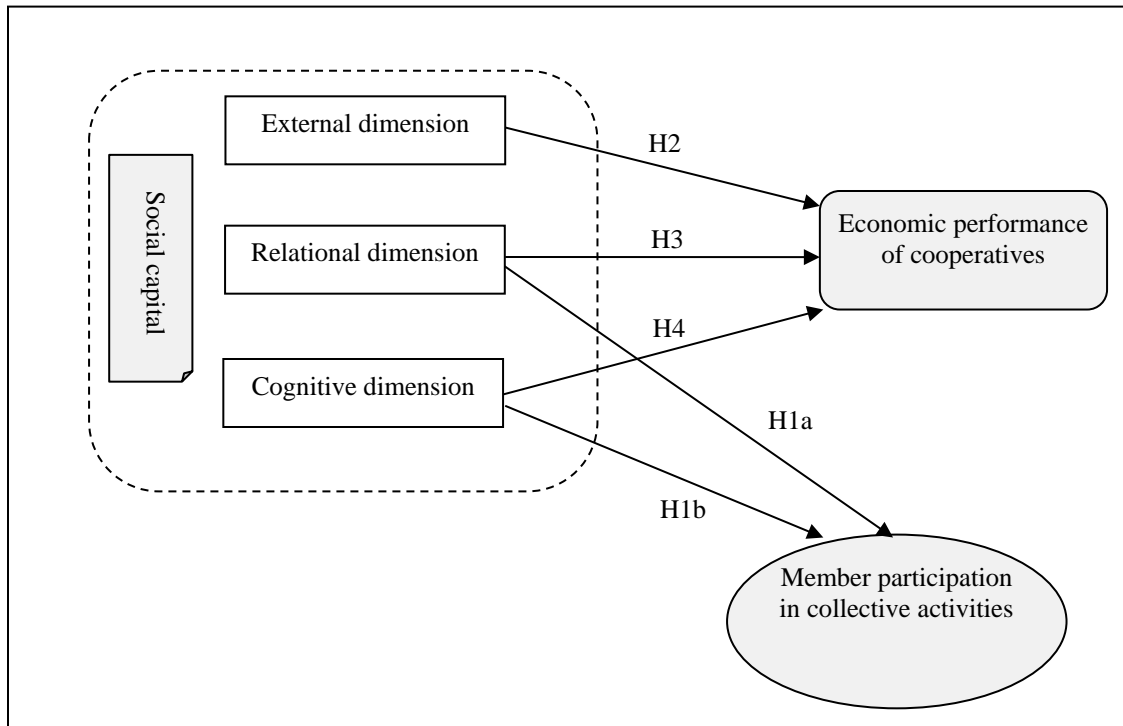
H4: The understandings of collective orientation and mission that members hold in common within a farmer cooperative – which represents the cognitive dimension of social capital – contribute to better economic outcomes of the cooperative.

Methodology

To understand the impact of social capital on member participation and economic performance, we employ statistical analysis with a sample of farmer cooperatives from China's Taizhou and Jiaxing city. The model, data, and measures of various variables are specified in this section.

Model

Based on the four hypotheses formulated in the previous section, the association of social capital with member participation and the economic performance of cooperatives is depicted in Figure 1. We hypothesize that social capital has a positive impact on both member participation in collective activities and the economic performance of farmer cooperatives.

Figure 1. The association between social capital and member participation in collective activities and the economic performance of cooperatives.

The models pertaining to the four hypotheses are shown as the following:

$$B = \alpha_0 + \alpha_1 external + \alpha_2 relational + \alpha_3 cognitive + \varepsilon \text{, and}$$
$$P = \beta_0 + \beta_1 external + \beta_2 relational + \beta_3 cognitive + \gamma,$$

where social capital is denoted as S; the three dimensions of social capital are referred to as $external$, $relational$, and $cognitive$, respectively; member participation is denoted as B; the economic performance of the cooperative is represented by P; α_i and β_i denote the parameters; and ε and γ are the error terms.

Measurements

Measurements concerning each dimension of social capital, member participation, economic performance, and control variables are specified in this subsection.

Social Capital

Due to the difficulty of direct measurement, various proxies are applied to conceptualize and measure social capital. The measurements used are partially borrowed from Tsai and Ghoshal (1998) and meanwhile customized to farmer cooperatives in China. All the measures of social capital are shown in Table 1.

External Dimension

Due to the dominant position of chairpersons in the management and operation of cooperatives (Liang and Hendrikse 2013), the social ties of the chairperson with other organizations and people are roughly taken as the external dimension of social capital. The extent of closeness that the chairperson has with five types of stakeholders, *input suppliers, managers of other cooperatives and agricultural firms, wholesalers or clients, officials from the government,* and *managers of cooperative unions or associations,* is used to measure the structural dimension of social capital. We use a 5-point scale ranging from 'not close at all' to 'extremely close' to evaluate the answers to the five questions. An exploratory factor analysis of the five variables yields a one-factor measure of the external dimension of social capital in each sample.

Relational Dimension

The mutual trust between managers and members and the trust among members represent the relational dimension of social capital. We utilize three inquiry questions:

1. *Please indicate the extent to which members trust the managers' capabilities in service provision, products' market recognition, and enhancing members' income.*

2. *To what extent do you trust that members are committed to the bylaws and delivery obligation of the cooperative*?

3. *Please evaluate the extent of cohesion and trust between members.*

To measure the trust within a farmer cooperative. A 5-point scale with choices: *'do not trust at all', 'basically trust', 'trust', 'quite trust', and 'completely trust'* is applied to evaluate the answers to those questions. A one factor-measure of the relational dimension of social capital is produced from the three variables by an exploratory factor analysis.

Cognitive Dimension

The cognitive dimension refers to a shared vision that facilitates the understanding of collective orientation and missions and ways of acting in an organization. "*Members have a common understanding about the collective orientation and mission of the cooperative*" is applied as a variable of the cognitive dimension of social capital. A 5-point scale ranging from 'not right at all' to 'extremely right' is used to evaluate the answer to the question.

Table 1. Measurements of the three dimensions of social capital

	Measurements	**Evaluation**
External Dimension	1) How close are the relationships you have with input suppliers? 2) How close are the relationships you have with managers of other cooperatives and agricultural firms? 3) How close are the relationships you have with wholesalers or clients? 4) How close are the relationships you have with officials from the government? 5) How close are the relationships you have with managers of cooperative unions or associations?	① not close at all ② not so close ③ close ④ very close ⑤ extremely close
Relational Dimension	1) Please indicate to what extent members trust the managers' capabilities in service provision, products' market recognition, and enhancing members' income. 2) To what extent do you trust that members are committed to the bylaws and delivery obligation of the cooperative? 3) Please evaluate the extent of trust between members.	① not trust at all ② basically trust ③ trust ④ quite trust ⑤ completely trust
Cognitive Dimension	Members have a common understanding about the collective orientation and the mission of the cooperative.	① not right at all ② basically right ③right ④ quite right ⑤ extremely right

Member Participation

Members participate in various activities in farmer cooperatives in China, which can be categorized primarily as capital participation, transaction participation, and management participation (Shao 2014). Capital participation refers to the capital shares that members hold. Transaction participation consists of members' products delivered to the cooperative. Management participation indicates members' involvement in decision making. However, common members in Chinese farmer cooperatives do not have much freedom to choose the extent of their participation in capital shares, transactions, and management (Huang and Xu 2008, Liang et al., forthcoming). Core members dominate capital shareholding, decision making, and profit distribution. Thus, common members do not have sufficient options to participate in the collective activities of a Chinese farmer cooperative. In essence, common members basically only choose whether to participate in technical trainings and general meetings. Thus, we use "*proportion of members participating in trainings*" and "*proportion of members participating in general meetings*" as the measurements of member participation. They are calculated by the number of relevant members divided by membership size. Members are assumed to be informed of all the trainings and meetings.

Economic Performance

Social capital is formed at an organizational level rather than the individual farmer level. Hence, the sale value of cooperatives is used to measure economic performance.

Control Variables

The location, size, and year of foundation of cooperatives may affect the performance of cooperatives (Huang 2009). In addition, the chairperson's gender, education level, age, working experience, Communist Party membership, and capital shares affect a cooperative's performance (Huang et al. 2008, Guo and Lou 2009). Therefore, all these factors are controlled during modeling.

Data

The data consists of both documentary materials and first-hand data. Face-to-face interviews were conducted to collect first-hand data. We chose farmer cooperatives in two cities in China's Zhejiang province, Jiaxing and Taizhou, for two reasons. First, cooperatives in China are in the eastern area where the economy is more market oriented and industrialized than in western China. Zhejiang is located in southeast China and is one of China's most developed provinces. More importantly, Zhejiang is leading the way in the development of farmer cooperatives in China in terms of both quantity and quality. As of the end of 2013, there are 53,168 farmer cooperatives in Zhejiang.[2]

Second, Jiaxing and Taizhou are located in the northeast and middle of Zhejiang, respectively (see Figure 2), and are two of the most developed cities in Zhejiang. They have parallel GDPs and marketization levels. We chose these two cities to control for the general development status and performance of farmer cooperatives with a limited differential. The areas of Taizhou and Jiaxing are approximately 9,400km^2 and 4,000 km^2, respectively. There are more than 7,000 farmer cooperatives in Taizhou and more than 3,000 farmer cooperatives in Jiaxing.

Figure 2. Map Zhejiang

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[2] **Data Source.** Zhejiang Administration of Industry and Commerce.

We chose 100 farmer cooperatives in Jiaxing and 100 in Taizhou from the lists of cooperatives by random sampling and conducted face-to-face interviews with the chairperson of each cooperative. Data regarding the chairperson's personal information, measures of the external, relational, and cognitive dimensions of social capital, members' collective activities, and cooperative-level information, such as membership size, shareholder structure, and profits, were collected. We interviewed the chairpersons of 83 farmer cooperatives in Jiaxing and 70 in Taizhou due to the unavailability of chairpersons at the other cooperatives. Questionnaires with missing data were discarded. Ultimately, we had a database consisting of 147 farmer cooperatives, with 81 cases from Jiaxing and 66 cases from Taizhou.[3]

Data and Results

Descriptive Results of Data

This section presents the descriptive results of the data and the statistical results of the models. All the variables, as well as the mean, standard deviation, minimum and maximum values of each variable, are displayed in Table 2.

Table 2. Descriptive statistics

Variable	Description	Mean	S.D.	Min	Max
Economic Performance					
Sale value	Log of sale value in a year	5.785	1.56	1.609	9.435
Participation Behaviors					
Technical training	Members participating in trainings (%)	0.878	0.219	0	1
General meeting	Members participating in general meetings (%)	0.745	0.365	0	1
Social Capital					
External dimension	Factor yielded by factor analysis of the five variables	-0.000	0.819	-2.065	1.77
Relational dimension	Factor yielded by factor analysis of the three initial variables	-0.000	0.795	-1.387	0.638
Cognitive dimension	A common understanding of the collective orientation and mission of the cooperative=1, otherwise=0	0.623	0.486	0	1
Control Variables					
Location	Jiaxing=1,Taizhou=0	0.569	0.497	0	1
Size	Number of members	68.109	65.958	5	410
Foundation	Year	6.446	3.093	1	13
Gender chairperson	Male=1,female=0	0.838	0.369	0	1
Education chairperson	Year	10.913	2.944	0	15
Age chairperson	Year	47.315	7.589	28	63
Working experience Chairperson	With non-agricultural working experience=1,otherwise=0	0.723	0.449	0	1
Communist Party membership chairperson	Party member=1,otherwise=0	0.357	0.481	0	1
Capital shares chairperson	%	19.411	15.586	1	100

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[3]The questionnaire used to conduct the interviews can be obtained by contacting the corresponding author.

Statistical Results

Table 3 displays the impacts of social capital on member participation in training and general meetings. The external dimension of social capital has no significant impact on members' participation in technical training or general meetings. Hypothesis 1a is therefore confirmed. The relational dimension of social capital is positively associated with members' participation in training, indicating that trust in a farmer cooperative provides an incentive for members to participate in training. The cognitive dimension of social capital has a significantly positive influence on members' participation in general meetings. Members who have a common understanding of collective orientation and mission are more likely to attend general meetings. Therefore, hypothesis H1b and H1c, which state that a higher level of relational and cognitive dimensions of social capital within a farmer cooperative facilitates members' participation in collective actions, is confirmed.

Table 3. OLS regression results regarding the effects of social capital on members' participation behaviors in farmer cooperatives

Variable	Model 1 Training Participation	Model 2 Meeting Participation
External dimension	0.023	0.005
	(0.73)	(0.11)
Relational dimension	0.046[*]	0.018
	(1.86)	(0.50)
Cognitive dimension	-0.002	0.221[***]
	(-0.06)	(2.97)
Location	-0.109[**]	0.159[**]
	(-2.50)	(2.13)
Size	-0.002[***]	-0.002[***]
	(-4.73)	(-4.47)
Foundation	-0.000	-0.006
	(-0.03)	(-0.59)
Gender chairperson	-0.042	-0.008
	(-0.75)	(-0.10)
Education chairperson	-0.026[**]	0.007
	(-2.11)	(0.63)
Age chairperson	-0.006	-0.005
	(-1.53)	(-1.10)
Working experience chairperson	-0.009	0.024
	(-0.21)	(0.31)
Communist party membership chairperson	0.048	-0.010
	(-1.15)	(-0.15)
Capital shares chairperson	-0.001	0.003[**]
	(-0.54)	(2.20)
Constant	1.665[***]	0.724[***]
	(5.49)	(2.72)
R^2	0.350	0.468

Note. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively, with t-values in parentheses.

Table 4 presents the impacts of social capital on the economic performance of the cooperatives. Variables are entered into the estimation with the following steps: (1) control variables, (2) the external dimension of social capital and control variables, (3) the relational dimension of social capital and control variables, (4)the cognitive dimension of social capital and control variables, and (5) all the independent and control variables. Table 4 shows that all three dimensions of social capital make significant contributions to the economic performance of cooperatives. Therefore, hypotheses 2, 3, and 4, regarding the positive impacts of the three dimensions of social capital on the performance of cooperatives, are all confirmed.

Table 4.OLS regression results regarding the effects of social capital on the economic performance of cooperatives

Variable	(1)	(2)	(3)	(4)	(5)
Location	-0.910***	-0.642***	-1.037***	-0.983***	-0.899***
	(-3.49)	(-2.90)	(-3.85)	(-3.70)	(-3.66)
Size	0.004*	0.003	0.004*	0.004	0.004*
	(1.76)	(1.61)	(1.82)	(1.58)	(1.61)
Foundation	0.155***	0.147***	0.144***	0.176***	0.154***
	(3.30)	(3.04)	(3.18)	(3.40)	(3.05)
Gender chairperson	0.304	0.356	0.120	0.349	0.171
	(1.02)	(1.22)	(0.39)	(1.23)	(0.60)
Education chairperson	0.003	0.028	-0.009	-0.006	0.001
	(0.04)	(0.38)	(-0.12)	(-0.08)	(0.02)
Age chairperson	0.011	0.022	0.006	0.011	0.015
	(0.57)	(0.99)	(0.28)	(0.56)	(0.70)
Working experience chairperson	-0.251	-0.215	-0.212	-0.162	-0.083
	(-0.82)	(-0.71)	(-0.71)	(-0.54)	(-0.29)
Party membership chairperson	-0.157	-0.194	-0.124	-0.129	-0.176
	(-0.58)	(-0.74)	(-0.46)	(-0.49)	(-0.71)
Capital shares chairperson	-0.006	-0.006	-0.004	-0.008	-0.004
	(-0.59)	(-0.58)	(-0.40)	(-0.77)	(-0.44)
External dimension		0.354**			0.440**
		(2.15)			(2.59)
Relational dimension			0.276**		0.505***
			(2.02)		(3.70)
Cognitive dimension				0.518**	0.561**
				(2.12)	(2.33)
_Cons	4.695***	3.767**	5.287***	4.309**	4.135**
	(2.85)	(2.04)	(3.24)	(2.60)	(2.38)
R^2	0.434	0.456	0.437	0.457	0.504

Note.***, ** and * represent significance at the 1%, 5% and 10% levels, respectively, with t-values in parentheses.

Although we already consider the size of the cooperatives as a controlled variable, we still used the sales per member as the measure of performance to test the robustness of our results. The results regarding the impact of social capital on performance in terms of sales per member are

presented in Table 1A (see Appendix). The robustness is confirmed because the same results were derived from the two models with sale value and sale value per member as the measure of performance respectively.

In addition, geographical location, membership size, and the age of cooperatives are positively related to economic performance. Cooperatives in Taizhou basically have better performance than those in Jiaxing, which may be due to the different levels of agricultural economic development. Although the economic level of Taizhou is not higher than that of Jiaxing, Taizhou is more specialized in agriculture. The agricultural industry accounts for 6.87% of the gross production of value in Taizhou, whereas that equivalent value is 5.33% in Jiaxing.[4]The positive influence of membership size and the age of cooperatives on economic performance has also been found in prior studies (Liang 2011, Fu 2013).

Furthermore, a cross-product interaction analysis was performed to examine whether the interactions of the three dimensions of social capital affect performance. However, the inclusion of cross-production interaction may result in a multicollinearity problem. We therefore calculate the interaction coefficients by subtracting the mean from the original value of the three dimensions of social capital (Allison 1977). The results are presented in Table 5 (see Appendix) and show a significantly negative interaction between the external and cognitive dimensions of social capital. These results are interpreted to indicate that the impact of external social capital on performance additionally depends on the magnitude of cognitive social capital. A higher level of cognitive social capital leads to a reduced impact of external social capital on performance. In the same sense, a higher level of external social capital reduces the effects of cognitive social capital on performance.

Discussion

This section discusses the results displayed in the previous section, i.e., the effects of social capital on members' participation and economic performance.

Social Capital and Members' Participation

Our study confirms the findings of Brown and Ashman (1996) that the importance varies of the different dimensions of social capital to participation, i.e., the relational and cognitive dimensions of social capital have a positive impact on members' participation in technical training and general meetings in farmer cooperatives in China, whereas external social capital is not significantly associated with member participation. More specifically, members' trust in managers and their collective orientation increases loyalty and enthusiasm in participating in various technical training sessions and in general meetings organized by managers. However, most common members in Chinese cooperatives specialize in production, whereas only a few entrepreneurial members are responsible for management of the cooperative and product marketing (Liang et al., forthcoming). Therefore, these common members are not aware of the relationships between a few entrepreneurial members and outside stakeholders of the cooperative.

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[4] **Data source.** Taizhou Statistical Yearbook 2012, Jiaxing Statistical Yearbook 2012.

Social Capital and Economic Performance

The associations between the three dimensions of social capital and the economic performance of farmer cooperatives are specified.

External Dimension of Social Capital

The results of the empirical analysis demonstrate that external networks or the social ties of cooperatives with both vertically and horizontally related stakeholders – such as input suppliers, clients, cooperators, competitors, and the government –affect the performance of farmer cooperatives. The external networks of an organization can produce market information, technology information, and budgetary resources, which are helpful to the economic outcomes of cooperatives (Knack and Keefer 1997, Andersson et al. 2002, Robison et al. 2002, Liang et al., forthcoming).

The term embeddedness is used by many scholars to explain how social networks affect the economic behavior and performance of organizations and how institutional arrangements support transactions (Granovetter 1985, Hagedoorn 2006). Chinese farmer cooperatives' connection with or embeddedness in external organizations is highlighted by many scholars (Xu 2005, Li and Zuo 2013). Li and Zuo (2013) recognize four types of networks in which Chinese farmer cooperatives are embedded: members, the village community, other market participants, and external source providers, such as governments and finance companies. Among the four types of social ties, village community is more likely to be related to the social dimension of cooperatives, whereas the others are more typically associated with the economic dimension. Cooperatives' ties with members in the current study are regarded as internal relationships.

Relational Dimension of Social Capital

Trust within farmer cooperatives –including trust both among members and between members and managers – is positively associated with the economic performance of cooperatives. As (1997) state, trust tends to reduce enforcement costs and strengthen commitment to joint activities. However, Hansen et al. (2002) argue that the effects of the different manifestations of trust on performance of cooperatives depend on organizational contexts. The complexity of services provided and geographic dispersion of members and facilities are two primary characteristics that influence the effects of trust on performance. They argue that when cooperatives provide more complex services and/or members have greater geographic dispersion, trust among members is more important than trust between members and managers, and vice versa. Cooperatives in China are characterized by limited services, such as input supplies, technique training, and sales, and only 8% of cooperatives offer members process services. All the cooperatives investigated in the current study have a relatively small membership and condensed geographic dispersion of members. The average membership of the investigated cooperatives is 69 and 65% of cooperatives have members geographically from a local town. Hence, trust between members and managers may be more important with respect to the economic performance of cooperatives, whereas trust among members is more associated with the social dimension.

Cooperatives currently face a decrease in trust for various reasons (Valetinov 2004), and it is notable that Chinese farmer cooperatives are no exception. The factors that lead to the tendency of decreasing trust in cooperatives are manifold. First, the enlarging size of cooperatives leads to looser relationships between members, as well as between members and the management, which causes a change in member attitudes toward cooperatives (Feng et al. 2011, Nilsson et al. 2012). Member commitments are relaxed.

Second, management of cooperatives is becoming more powerful and more independent (Bijman et al. 2013). Member managers are playing essential roles in Chinese farmer cooperatives. Furthermore, professional management has been adopted by a few cooperatives, which widens the gap between members and management. Communication and bridging between members and management are more principle-agent based, rather than community and trust based.

Third, cooperatives are becoming more similar to capitalist firms in terms of both internal governance and external activities(Nilsson et al. 2012), which means that they are moving from a defensive orientation to a more offensive orientation in terms of market activities. In addition, members interact with their cooperative on the basis of economic efficiency. Members place more value on economic benefits and transactions that pertain to market activities. Social benefits, which used to be one of the critical incentives driving farmers to join cooperatives, are beginning to be less of a factor. Moreover, as the size of cooperatives increases, the return on economic capital exceeds the return from social capital.

Cognitive Dimension of Social Capital

A common understanding of collective orientation and missions by members contributes to the economic performance of farmer cooperatives, which supports the positions of many scholars (Rudd 2000, Ole Borgen 2001, Chow and Chan 2008, Pearson et al. 2008). A collective orientation is one of the most important preconditions of the genesis and development of farmer cooperatives (Lin and Wang 2002, Wang 2010).An understanding of goals provides an incentive for members to pursue and achieve these goals. Chinese farmer cooperatives typically feature a few core members who dominate. Common members must be sufficiently informed and trained to understand the collective orientation and mission of cooperatives. Management teams must develop clear goals and deliver information to members. Thus, general meetings are quite important.

Nowadays most cooperatives adopt professional management (Bijman et al. 2013). This contributes to the innovation and market orientation of cooperatives (Kyriakopoulos et al. 2004). However, the distance between the management and members is getter larger and members' collective orientation may be drained. Besides, members are more heterogeneous in terms of production size and products due to consumers' demand variance. A series of methods, such as constructing the homepages of the cooperative and electing member representatives who may attend important meetings, may be adopted by cooperatives to keep members informed of the status of the cooperatives. In addition, a proper culture of an organization may help members understand the collective orientation (La Porta et al. 1997). In addition, having a proper culture in an organization helps members understand the collective orientation (La Porta et al. 1997).

Conclusion and Future Research

This study investigates the impact of social capital on member participation in collective activities and on the economic performance of Chinese farmer cooperatives, in particular. It adds to the literature, both theoretically and empirically, regarding the composition, measurement, and role of social capital pertaining to farmer cooperatives. Social capital is indicated by three dimensions, i.e., the external, relational, and cognitive dimensions. These dimensions are interpreted as external networks, trust, and a common understanding of goals and mission, respectively, in this empirical study. The empirical results show the following: 1) members' participation in technical training and general meetings is more active in cooperatives with a higher level of relational and cognitive social capitals, and 2) all three dimensions of social capital positively influence the economic performance of cooperatives.

Social capital is given greater value in organizations characterized by collective action and is also denser when trust and norms being more greatly emphasized (Granovetter 2005). Small groups have denser social capital because people have closer spatial and emotional contacts. Although the creation and benefits of social capital are related to individuals, it is bound to groups and produces goods that are collective (Uphoff and Wijayaratna 2000). The current study, based on data from Chinese farmer cooperatives, confirms the beneficial role of social capital.

Like physical capital and human capital, the creation of social capital requires a sustainable investment of time and effort (Ostrom 1994). It is produced through interactions between individuals and organizations and systems (Gillies 1998).A long-term and focused commitment is required to develop social capital, and its creation is even more difficult than that of physical or human capital due to the commitment required to develop long-term interpersonal relations and the collective participation of all members. As the size and/or member heterogeneity of a group expand, maintaining and growing social capital become increasingly difficult (Coulter et al. 1999, Markelova et al. 2009).Nevertheless, social capital is a resource thatgrows the more it is used (Powell 1996, Gillies 1998). The stock of social capital increases, rather than decreases, with use. Moreover, social capital is characterized by idiosyncrasy or specificity, i.e., it is strongly connected to the personal identity of its bearers and cannot be transferred to other groups without losing value or bearing a cost (Valentinov 2004).

There are various possibilities for future research. We interviewed only chairpersons, used chairpersons' social networks as those of the cooperatives, and took chairpersons' evaluation of trust and members' understanding of collective orientation to roughly measure the relational and cognitive dimensions of social capital, which may be limitations of this study. It would be of value to try an alternative method of measurement, e.g., interviewing members of each cooperative to measure social capital from their perspective.

The volume of social capital may be influenced by sectors (Li and Zuo 2013). We did not examine the impact of social capital on the economic performance of cooperatives among different sectors. It would be helpful to evaluate the impact of social capital on the performance of farmer cooperatives in different product sectors. Cooperatives producing high value added products such as vegetables and fruits of may be more dependent on inter-organizational social capital due to the need for a broad marketing network, while bulk products mostly are provided via wholesale market.

It is logical to argue that social capital provides an incentive for members to participate in collective activities, but members' active participation also helps create social capital (Wollebaek and Selle 2002). Lin (1999) also states that, all scholars remain committed to the view that it is the interacting members who contribute to the maintenance and building of social capital. It would contribute to the current study by investigating the interaction between social capital and member activities.

The dependent nature of cooperatives on social capital causes limitations as well. Zhao (2003) specifies that the presence of social capital may restrain the entry of outsiders, limit members' business motivation and innovation, and delay the promotion of some talented individuals. Studies concerning the negative influence of social capital on the development of farmer cooperatives, such as the impact of social capital on agricultural firms' product innovation, would be interesting.

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References

Adler, P.S., and S. Kwon. 2002. Social capital: Prospects for a new concept. *Academy of Management Review* 27 (1): 17-40.

Allison, P.D. 1977. Testing for interaction in multiple Regression. *American Journal of Sociology* 83: 144–153.

Andersson, U., M. Forsgren, and U. Holm. 2002. The strategic impact of external networks: subsidiary performance and competence development in the multinational corporation. *Strategic Management Journal* 23 (11): 979-996.

Arrow, K.J. 1972. Gifts and exchanges. *Philosophy & Public Affairs* 1(4):343-362.

Beugelsdijk, S. and T. Van Schaik. 2005. Social capital and growth in European regions: an empirical test. *European Journal of Political Economy* 21 (2): 301-324.

Bijman, J., G. Hendrikse, and A.van Oijen.2013. Accommodating two worlds in one organisation: changing board models in agriculturalcooperatives. *Managerial and Decision Economics* 34(3-5): 204-217.

Bingen, J., A. Serrano, and J. Howard. 2003. Linking farmers to markets: Different approaches to human capital development. *Food Policy* 28 (4): 405-419.

Brown, L.D., and D. Ashman. 1996. Participation, social capital, and intersectoral problem solving: African and Asian cases. *World Development* 24(9): 1467-1479.

Bowles, S., and H. Gintis. 2002. Social capital and community governance. *EconomicJournal* 112: 419-436.

Chloupkova, J.G., L.H. Svendsen, and G.T. Svendsen.2003. Building and destroying social capital: The case of cooperative movements in Denmark and Poland. *Agriculture and Human values* 20 (3): 241-252.

Chow, W.S., and L.S. Chan.2008. Social network, social trust and shared goals in organizational knowledge sharing. *Information & Management* 45 (7): 458-465.

Coleman, J.S. 1988. Social capital in the creation of human capital. *American Journal of Sociology* 94: 95-120.

Cook, M.L. 1995. The future of US agricultural cooperatives: A neo-institutional approach. *American Journal of Agricultural Economics* 77(5): 1153-1159.

Cooke, P., and N. Clifton. 2004. Spatial variation in social capital among UK small and medium-sized enterprises. In *Entrepreneurship and Regional Economic Development: A Spatial Perspective*, edited by P. Nijkamp, R. Stough, and H. de Groot. Edward Elgar: Cheltenham.

Cooke, P., N. Clifton, and M. Oleaga. 2005. Social capital, firm embeddedness and regional development. *Regional Studies* 39 (8): 1065-1077.

Coulter, J., A.Goodland, A.Tallontire, and R.Stringfellow. 1999. Marrying Farmer Cooperation andContract Farming for Service Provision in Liberalising Sub-Saharan Africa. ODI Natural ResourcePerspectives, Number 48.

Dunn, J.R. 1988. Basic Cooperative Principles and Their Relationship to Selected Practices. *Journal of Agricultural Cooperation* 3: 83-93.

Dyer, J.H., and H. Singh.1998. The relational view: cooperativestrategy and sources of inter-organisational competitiveadvantage. *Academy of Management Review* 23: 660-679.

Feng, L., J. Nilsson, P. Ollila, and K. Karantininis. 2011. The human values behind farmers' loyalty to their cooperatives. Paper presented at the 5th international conference on Economics and Management of Networks, Limassol, Cyprus,December.

Fu, Y. 2013. Study on the Efficiency of Agricultural Cooperatives: The Static and Dynamic Analyses based on the Objective Function. Ph.D. diss., Zhejiang University, China.

Gillies, 1998. Effectiveness of alliances and partnerships for health promotion. *Health Promotion International* 13(2): 99-120.

Granovetter, M. 1985. Economic action and social structure: Theproblem of embeddedness. *American Journal of Sociology* 91: 481-510.

Granovetter, M. 2005. The impact of social structure on economic outcomes. *The Journal of Economic Perspectives* 19 (1): 33-50.

Gulati, R., N. Nohria, and A.Zaheer. 2000. Strategic networks. *Strategic Management Journal* 21:203-215.

Guo, H., and D. Lou. 2009. Factors influencing the development of farmer cooperatives: Based on cases from Zhejiang. *Chinese Rural Economy* 8: 24-31.

Hagedoorn, J. 2006. Understanding the cross-level embeddedness of interfirm partnership formation. *Academy of management review* 31 (3): 670-680.

Hansen, M.H., J.L. Morrow Jr., and J.C. Batista. 2002. The impact of trust on cooperative membership retention, performance, and satisfaction: an exploratory study. *The International Food and Agribusiness Management Review* 5 (1): 41-59.

Hansmann, H. 1996. *The Ownership of Enterprise*. The Belknap Press of Harvard University Press, Cambridge, MA.

Hayami, Y. 2009. Social Capital, Human Capital and the Community Mechanism: Toward a Conceptual Framework for Economists. *Journal of Development Studies* 45: 96-123.

Hazell, P., C. Poulton, S. Wiggins, and A. Dorward. 2006. The future of small farms: synthesis paper. Based on Research Workshop organized by IFPRI, ODI and Imperial College, Wye.

Hendrikse, G.W.J. 2007. Boards in cooperatives versus corporation: Irrelevance and incentives. In *Vertical Markets and Cooperative Hierarchies*, edited by K. Karantininis and J. Nilsson, 137-150. Elsevier: Amsterdam.

Hind, A.M. 1997. The changing values of the cooperative and its business focus. *American Journal of Agricultural Economics*79(4): 1077-1082.

Hogeland, J.A. 2006. The economic culture of US agricultural cooperatives. *Culture & Agriculture* 28(2): 67-79.

Huang, X. 2009. Performance of farmer cooperatives. Ph.D. Diss., Sichuan Agricultural University, China.

Huang, S., J. Lin, and X. Xu. 2008. Governance mechanism and performance of farmer cooperatives. *Chinese Rural Economy* 3: 65-73.

Huang, S. and X. Xu. 2008. Analysis on member heterogeneity and organizational structure of farmer cooperatives. *Journal of Nanjing Agricultural University (Social Science Version)* 8(3): 1-7, 43.

Knack, S. and P. Keefer. 1997. Does social capital have an economic payoff? A cross-country investigation. *The Quarterly Journal of Economics* 112 (4): 1251-1288.

Kyriakopoulos, K., M. Meulenberg, and J. Nilsson. 2004. The impact of cooperative structure and firm culture on market orientation and performance. *Agribusiness*20 (4): 379–396.

La Porta, R., F.Lopez-de-Silanes, A.Shleifer, and R.W. Vishny. 1997. Trust in large organization. *American Economic Review* 87: 333-338.

Lang, K.A. 2006. Cognition, agency theory and organizational failure: A Saskatchewan wheat pool case study. Master Thesis, University of Saskatchewan, Saskatoon, Canada.

Lee, R. 2009. Social capital and business and management: Setting a research agenda. *International Journal of Management Reviews* 11(3): 247-273.

LeVay, C., 1983. Agricultural co-operative theory: A review. *Journal of Agricultural Economics* 34(1): 1-44.

Li, J., and Y. Zheng. 2008. Rural elite, social capital, and trends of rural cooperatives. *Social Science Studies* 2: 82-85.

Li, C., and T. Zuo. 2013. Building the survival space of cooperatives under the perspective of 'embeddedness': Based on a farmer cooperative in Yanchi. *Issues in Agricultural Economy* 6: 30-36.

Liang, Q. 2011. The Impact of Cooperatives on Famers'Production Income and Scale Efficiency: Based on a Theoretical Model and Empirical Analyses. Ph.D. diss., Zhejiang University, China.

Liang, Q., and G. Hendrikse. 2013. Core and common members in the genesis of farmer cooperatives in China. *Managerial and Decision Economics* 34(3-5):117-361.

Liang, Q., G. Hendrikse, Z. Huang, and X. Xu. Governance structure of Chinese Farmer Cooperatives: Evidence from Zhejiang Province. *Agribusiness*, Forthcoming.

Lin, N. 1999. Building a network theory of social capital. *Connections* 22 (1): 28-51.

Lin, J., and Y. Ma. 2006. The boundary between farmer cooperatives and IOFs: From the perspective of transaction cost and organizational cost. *Agricultural Economics Issue* 3: 16-20.

Lin, J., and N.Wang.2002. Equality and efficiency: Principles and institutional arrangement of farmer cooperatives. *Issues in Agricultural Economy* 9:46-49.

Luo, Q., and Z. Wang. 2010. Social capital and governance of collective action dilemma in farmer cooperative economic organization. *The Chinese Cooperative Economic Review* 10: 107-114.

Lyon, F., 2000. Trust, networks and norms: the creation of social capital in agricultural economies in Ghana. *World Development* 28 (4): 663-681.

Markelova, H., R. Meinzen-Dick, J. Hellin, and S. Dohrn. 2009. Collective action for smallholder market access. *Food policy* 34 (1): 1-7.

Misztal, B.A. 1996. *Trust*. Cambridge: Polity Press.

Nahapiet, J., and S.Ghoshal. 1998. Social Capital, Intellectual Capital, and the Organizational Advantage. *The Academy of Management Review* 23 (2): 242- 266.

Narayan, D., and L.Pritchett. 1997. Cents and sociability: Household income and social capital in Rural Tanzania. World Bank Research Working Paper No. 1796, Washington: The World Bank.

Nilsson, J., and G.W.J. Hendrikse. 2011. Gemeinschaft and Gesellschaft in Cooperatives. In *New Development in the Theory of Networks: Franchising, Alliances and Cooperatives*, edited by M. Tuunanen, J. Windsperger, G. Cliquet, and G. Hendrikse, 339–352. Springer-Verlag: Berlin Heidelberg.

Nilsson, J., G.L.H.Svendsen, and G.T. Svendsen. 2012. Are Large and Complex Agricultural Cooperatives Losing Their Social Capital? *Agribusiness* 28 (2): 187–204.

Novkovic, S. 2013. Reflections on the International Symposium of Co-operative Governance. *Journal of Co-operative Organization and Management* 1: 93-95.

Ole Borgen, S. 2001. Identification as a TrustGenerating Mechanism in Cooperatives. *Annals of Public and Cooperative Economics* 72 (2): 209-228.

Ostrom, E. 1994. Constituting Social Capital and Collective Action. *Journal of Theoretical Politics* 6 (4): 527-562.

Ouchi, W.G. 1980. Markets, bureaucracies, and clans. *Administrative Science Quarterly* 1(25): 129-141.

Pearson, A.W., J.C. Carr, and J.C. Shaw. 2008. Toward a theory of familiness: A social capital perspective.*Entrepreneurship Theory and Practice* 32 (6): 949-969.

Powell, W.W. 1996.Trust-based forms of governance, In*Trust in Organisations*, edited by R.M. Kramer and T.R. Tyler. Thousand Oaks, CA: Sage.

Putnam, R.D. 1993. The prosperous community: Social capital and public life. *American Prospect* 13: 35-42.

Putnam, R.D. 1995. Bowling alone: America's declining social capital. *Journal of Democracy* 6 (1): 65-78.

Robison, L.J., A.A. Schmid, and E.S. Marcelo. 2002. Is social capital really capital? *Review of Social Economy* 60 (1): 1-21.

Royer, J.S., and D.B. Smith. 2007. Patronage Refunds, Producer Expectations, and Optimal Pricing by Agricultural Cooperatives. *Journal of Cooperatives* 20: 1-16.

Rudd, M.A. 2000. Live long and prosper: collective action, social capital and social vision. *Ecological Economics* 34 (1): 131-144.

Shao, K. 2014. The Analysis on the Behaviors of Member Participation in Farmer Specialized Cooperatives. PhD dissertation, Zhejiang University.

Teorell, J. 2003. Linking Social Capital to Political Participation: Voluntary Associations and Networks of Recruitment in Sweden1. *Scandinavian Political Studies* 26 (1): 49-66.

Tribl, C. 2009. Spatial competition of food processing cooperatives in a mixed market–the case of uniform delivered pricing. Working paper, Federal Institute of Agricultural Economics, Austria.

Tsai, W., and S. Ghoshal. 1998. Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal* 41 (4): 464-476.

Uphoff, N. 1992. *Learning from Gal Oya: Possibilities for Participatory Development and Post-Newtonian Social Science*. Ithaca, N.Y: Cornell University Press.

Uphoff, N., and C.M. Wijayaratna. 2000. Demonstrated benefits from social capital: the productivity of farmer organizations in Gal Oya, Sri Lanka. *World Development* 28 (11): 1875-1890.

Valentinov, V. 2004. Toward a social capital theory of cooperative organisation. *Journal of Cooperative Studies* 37 (3): 5-20.

Valentinov, V. 2007. Why are cooperatives important in agriculture? An organizational economics perspective. *Journal of institutional Economics* 3 (1): 55-69.

Wang, Y. 2010. Industry expansion, organization innovation, and farmer cooperative growth. *China Rural Survey* 2: 47-50.

Westlund, H. 2006. *Social Capital in the Knowledge Economy: Theory and Empirics*. Springer: Berlin.

Westlund, H., and F. Adam. 2010. Social Capital and Economic Performance: A Meta-analysis of 65 Studies. *European Planning Studies* 18:6, 893-919.

Wollebaek, D., and P. Selle. 2002. Does participation in voluntary associations contribute to social capital? The impact of intensity, scope, and type. *Nonprofit and Voluntary Sector Quarterly* 31 (1): 32-61.

Wu, W., and A. Leung. 2005. Does a micro-macro link exist between managerial value of reciprocity,social capitaland firm performance? The case of SMEs in China. *Asia Pacific Journal of Management* 22(4): 445-463.

Xu, F., C.Song, and C.Hang. 2013. The influence of social capital on farmer specialized cooperatives. *Theoretic Observation* 12: 82-83.

Xu, X. 2005. Institutional Analysis on Farmer Specialized Cooperatives in China. The Publishing House of Economic Science.

Zaheer, A., B. McEvily, and V. Perrone. 1998. Does trust matter? Exploring the effects of inter-organizational and interpersonal trust on performance. *Organization Science* 9(2): 141-159.

Zhao, Q., and Y. Li. 2007. The cooperative economy ofsocial networks and China's rural society: Based on social capital perspective. *Issues in Agricultural Economy* 8: 40-46.

Zhao, Y. 2003. New trends in social capital theory. *Social Sciences Abroad* 3: 54-59.

Zhang, Q., and H.G. Fung. 2006. China's social capital and financial performance of private enterprises. *Journal of Small Business and Enterprise Development* 13(2): 198 – 207.

Appendix

Table 1A. The impact of social capital on performances (in terms of sale value per member)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Location	0.510**	0.539**	0.321	0.478**	0.245	0.310	0.244	0.222
	(2.59)	(2.32)	(1.37)	(2.40)	(0.95)	(1.19)	(0.97)	(0.88)
Foundation	0.038	0.037	0.025	0.051	0.043	0.038	0.033	0.041
	(0.88)	(0.86)	(0.59)	(1.14)	(1.01)	(0.92)	(0.78)	(0.96)
Gender chairperson	0.263	0.267	-0.058	0.291	-0.047	-0.052	-0.066	-0.059
	(0.87)	(0.87)	(-0.23)	(0.97)	(-0.19)	(-0.22)	(-0.27)	(-0.24)
Education chairperson	-0.034	-0.032	-0.042	-0.042	-0.056	-0.055	-0.059	-0.057
	(-0.67)	(-0.60)	(-0.83)	(-0.83)	(-1.09)	(-1.08)	(-1.17)	(-1.12)
Age chairperson	0.003	0.004	-0.004	0.002	-0.005	-0.004	-0.008	-0.005
	(0.19)	(0.22)	(-0.30)	(0.15)	(-0.34)	(-0.28)	(-0.52)	(-0.35)
Working experience chairperson	-0.351	-0.350	-0.270	-0.299	-0.193	-0.177	-0.249	-0.223
	(-1.66)	(-1.65)	(-1.44)	(-1.38)	(-0.98)	(-0.89)	(-1.27)	(-1.13)
Party membership chairperson	0.143	0.137	0.234	0.154	0.235	0.292	0.188	0.198
	(0.58)	(0.53)	(1.05)	(0.62)	(1.02)	(1.23)	(0.83)	(0.88)
Capital shares chairperson	0.001	0.001	0.003	0.000	0.002	0.001	0.003	0.002
	(0.09)	(0.10)	(0.49)	(-0.07)	(0.28)	(0.23)	(0.60)	(0.33)
External dimension		0.138*			0.148**	0.124**	0.156**	0.139**
		(1.62)			(2.01)	(2.23)	(2.42)	(2.21)
Relational dimension			0.342**		0.424**	0.314*	0.445**	0.425**
			(2.32)		(2.40)	(1.70)	(2.58)	(2.39)
Cognitive dimension				0.348*	0.513**	0.497**	0.474**	0.486*
				(1.73)	(2.04)	(2.02)	(2.04)	(1.78)
External dimension*relational dimension						0.253		
						(1.17)		
External dimension*cognitive dimension							-0.434*	
							(-1.50)	
Relational dimension*cognitive dimension								-0.202
								(-0.72)
_Cons	0.771	0.685	1.529	0.546	1.279	1.119	1.572	1.387
	(0.66)	(0.51)	(1.35)	(0.47)	(1.07)	(0.95)	(1.30)	(1.14)
R²	0.081	0.081	0.131	0.099	0.172	0.188	0.195	0.177

Note. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively, with t-values in parentheses.

Table 5. Cross-product interaction analysis regarding the impacts of the three dimensions of social capital on performance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Location	-0.910***	-0.642***	-1.037***	-0.983***	-0.899***	-0.889***	-0.912***	-0.933***
	(-3.49)	(-2.90)	(-3.85)	(-3.70)	(-3.66)	(-3.66)	(-3.80)	(-3.89)
Size	0.004*	0.003	0.004*	0.004	0.004	0.004	0.004*	0.004*
	(1.76)	(1.61)	(1.82)	(1.58)	(1.61)	(1.62)	(1.73)	(1.69)
Foundation	0.155***	0.147***	0.144***	0.176***	0.154***	0.153***	0.142***	0.149***
	(3.30)	(3.04)	(3.18)	(3.40)	(3.05)	(3.02)	(2.87)	(3.01)
Gender chairperson	0.304	0.356	0.120	0.349	0.171	0.168	0.149	0.153
	(1.02)	(1.22)	(0.39)	(1.23)	(0.60)	(0.60)	(0.51)	(0.52)
Education chairperson	0.003	0.028	-0.009	-0.006	0.001	0.001	-0.003	-0.001
	(0.04)	(0.38)	(-0.12)	(-0.08)	(0.02)	(0.01)	(-0.05)	(-0.01)
Age chairpersons	0.011	0.022	0.006	0.011	0.015	0.015	0.012	0.014
	(0.57)	(0.99)	(0.28)	(0.56)	(0.70)	(0.70)	(0.56)	(-0.69)
Working experience chairperson	-0.251	-0.215	-0.212	-0.162	-0.083	-0.082	-0.145	-0.129
	(-0.82)	(-0.71)	(-0.71)	(-0.54)	(-0.29)	(-0.28)	(-0.49)	(-0.45)
Party membership chairperson	-0.157	-0.194	-0.124	-0.129	-0.176	-0.168	-0.227	-0.237
	(-0.58)	(-0.74)	(-0.46)	(-0.49)	(-0.71)	(-0.66)	(-0.91)	(-0.93)
Capital shares chairperson	-0.006	-0.006	-0.004	-0.008	-0.004	-0.004	-0.002	-0.003
	(-0.59)	(-0.58)	(-0.40)	(-0.77)	(-0.44)	(-0.45)	(-0.24)	(-0.35)
External dimension		0.354**			0.440**	0.428***	0.458***	0.434**
		(2.15)			(2.59)	(2.66)	(2.69)	(2.48)
Relational dimension			0.276**		0.505***	0.481***	0.523***	0.508***
			(2.02)		(3.70)	(3.25)	(3.96)	(3.61)
Cognitive dimension				0.518**	0.561**	0.557**	0.512**	0.515**
				(2.12)	(2.33)	(2.32)	(2.18)	(2.08)
External dimension*relational dimension						0.050		
						(0.35)		
External dimension*cognitive dimension							-0.488*	
							(-1.66)	
Relational dimension*cognitive dimension								-0.345
								(-1.43)
_Cons	4.695***	3.767**	5.287***	4.309**	4.135**	4.116**	4.483**	4.314**
	(2.85)	(2.04)	(3.24)	(2.60)	(2.38)	(2.34)	(2.57)	(2.51)
R²	0.434	0.456	0.437	0.457	0.504	0.504	0.519	0.511

Note. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively, with t-values in parentheses.