

Research Article

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Director-Generals’ Human and Social Capital, and Management Performance of Farmers’ Cooperatives: Evidence from China’s Fujian

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Abstract: Purpose – This study aimed to assess the impact of director-generals’ human and social capitals on the organizational performance of farmers’ cooperatives in Fujian Province.

Design/Methodology/Approach – Questionnaire survey data of 303 standard cooperatives in nine cities of Fujian Province were statistically analyzed.

Findings – We identified that director-generals’ human and social capitals affect all four dimensions of cooperative performance, through the mediating role of management effectiveness.

Practical Implications – We offer suggestions and measures for improving cooperatives’ performance by enhancing the human and social capitals of director-generals. Based on China’s national conditions, we propose measures to improve director-generals’ human and social capitals by the Internal trust, Government policy support, and Business network (IGB) model, which emphasizes establishing a social network of cooperatives’ director-generals, accumulating social capital, and promoting cooperative development through internal members, government departments, and commercial organizations.

Keywords: Farmer cooperatives, Director-general, Human capital, Social capital, Operational performance

JEL codes: Q13, J24

1 Introduction

Professional farmers’ cooperatives represent a new form of agricultural production and management formed through the voluntary organization, management, and cooperation of farmers. In the management of cooperatives, the central director-general plays a key role in operational and decision-making processes, in addition to being closely tied to organizational performance [Bond, 2009; Xu and Zhang, 2016].

An enterprise is a combination of related resource elements, of which the most important resources are tangible capital and intangible human capital [Stigler and Friedland, 1983]. Entrepreneurs have obvious advantages in market transactions, as well as information acquisition and utilization [Lewin, 2002]. Studies have shown that entrepreneurs with greater human capital are more likely to discover opportunities and mobilize resources [Ucbasaran et al., 2008; Bhagavatula et al., 2010]. Another intangible capital is social capital, which was first defined from the perspective of enterprise organization [Nahapiet and Ghoshal, 1998]. Scholars have regarded social capital as the social resources or social competence of an enterprise, whose networking resources may be relevant to enterprise behavior, thus affecting the business outcomes [Wyrwa, 2014]. The effect of social capital on organizational performance has been investigated in the context of enterprise organization, mainly analyzing the types of social capital existing in enterprises and their influence.

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Recently, the relationship among individual human capital, social capital, and organizational performance was discussed. For example, the interaction of chief executive officers' (CEOs') social capital and Western experience of entrepreneurs has a positive effect on the survival likelihood of Internet firms, whereas the interaction of social capital and startup experience of entrepreneurs has a negative effect on firm performance [Batjargal, 2007]. Industry-specific managerial experience and firm-specific founding experience of outside directors have strong additive effects on firm growth [Kor and Sundaramurthy, 2009]. A study on small- to medium-sized enterprises found that general managers' cognitive ability affects organizational performance [Felício et al., 2014]. However, due to differences in conditions between different nations, studies on the relationship between human capital, social capital, and performance under different cultural environments can have different outcomes [Schneider et al., 2000]. The "acquaintance trust", unique to rural China, restricts the development of cooperatives [Zhao and Li, 2007]. Moreover, there are relatively few research reports on the relationship between social capital and cooperative performance, and the literature on the social capital of cooperatives' director-generals is inadequate. A study of the irrigation cooperatives found that successful rural cooperatives relied on leaders with good reputations or deep social connections [Zhao and He, 2007]. In addition, the influence of core members on the development of cooperatives from the social capital perspective was investigated [Lv and Gong, 2012]. However, research on the association of director-generals' human capital, social capital, and farmers' cooperative performance has not been reported.

For this study, we analyzed the compositions of the human capital and social capital of director-generals, who are the key figures in farmers' cooperatives in China, and studied their effect on organizational performance. In terms of research methods, we used normative analysis, empirical investigation, and quantitative statistical analysis. We constructed a Human Capital, Social Capital, Efficacy, and Performance (HSCEP) research model for director-generals' human resources and social capital against cooperative performance, and we proposed the relevant theoretical assumptions. Briefly, we developed a questionnaire, "Research on the Impact of Director-Generals' Human Capital and Social Capital on the Performance of Farmers' Professional Cooperatives". We statistically analyzed the sample data obtained from the questionnaire surveys of 303 cooperatives that met the standards for model cooperatives in nine cities in Fujian Province of China. We obtained the relevant factors regarding the influence of human and social capitals on the operational performance of cooperatives using factor analysis, structural equation modeling, and other methods. In this way, we empirically analyzed the data and tested the assumptions contained in the model. Lastly, based on the findings, we suggested measures for improving the human and social capitals of cooperative director-generals.

2 Literature Review

2.1 Human Capital

For human capital, some scholars focused on the relationship between business performance and the personal characteristics of entrepreneurs, such as age, education, personality, remuneration, and professional background. For example, researchers studied 508 telecommunications companies in the USA [Karami et al., 2006]. They found that entrepreneur education and work experience, but not age, affected business performance. However, earlier studies found that an entrepreneur's age was negatively correlated with business performance, and another study suggested that formal education does not seem to be a determining factor of cooperative success [Bantel and Jackson, 1989; Davidsson and Honig, 2003]. A relationship also exists between business performance and entrepreneur's personal background and ability. For example, researchers argued that work experience, management experience, and prior entrepreneurial experience are related to firm activity, and that entrepreneurial experience is a prerequisite for starting a company and ultimately affects organizational performance [Cooper et al., 1994; Dimov and Shepherd, 2005]. In addition, directors' human capital, including prior experience and education, benefit firm performance because human capital is likely to make them more effective at monitoring management

and providing advice [Khanna et al., 2014]. It is suggested that entrepreneurial competencies include both innovation and management abilities [Chandler and Hanks, 1994]. Management abilities are linked to economic performance by boosting corporate profits and market share [Becker and Gerhart, 1996]. Skills, such as computer skill, have a significant impact on human capital [Eicher, 1996]. Research found that stronger leadership through enhanced relational skills underlines communication skills as an element of individual competency [McCallum and O'Connell, 2009]. Moreover, honor and rewards are thought to be able to create human capital [Coleman, 1988]. Survey data from several hundred US companies proved that the remuneration level of managers had an obvious influence on the performance of organizations [Hall and Liebman, 1998]. Thus, we propose three constructs for human capital, as shown in Section 3.2 and Table 1. The hypotheses (H1a)–(H3d) about the relationship between human capital and performance are proposed in Section 4.2 and Table 2.

2.2 Social Capital

Social capital refers to the assembly of relationships, context, trust, and norms that encourage suitable behavior for knowledge sharing [Anklam, 2002]. Affection relationships, and the diversified relationships that help to build bridges between agents, are sources of social capital [Davidsson and Honig, 2003]. Scholars have argued that social capital is generated from the internal networks of organizations through which tangible and intangible capital can be obtained and used to help organizations achieve their goals [Leenders and Gabbay, 2013]. Actually, social networks are heterogeneous due to member diversity and associational type [Stolle and Rochon, 2001; Ruben and Heras, 2012]. Both internal and external social capitals provide a basis for the creation of organizational advantage [Yli-Renko et al., 2002]. It has been shown that social capital building was associated with enhanced business, knowledge, and innovation performance [Cooke and Wills, 1999]. Furthermore, the use of social capital by organizational managers can play an active role in productive activities, improvement of the organizational environment, and optimization of the organization's relationships with business institutions, the public sector, and customers [Westlund and Bolton, 2003]. Social capital developed from managerial networking and social relationships with top managers at other firms, government officials (political leaders and bureaucratic officials), and community leadership enhance organizational performance [Acquaah, 2007]. Trust relationships based on strong and weak bonds lead to the creation of cognitive social capital, contributing to entrepreneurial learning and exploration of opportunities [Lechner and Dowling, 2003]. Moreover, commercial relations of social capital improve the business performance of startups [Bosma et al., 2004]. Consequently, four constructs for social capital are proposed in Section 3.2 and Table 1. The hypotheses (H4a)–(H7d) about the relationship between social capital and performance are proposed in Section 4.2 and Table 2.

3 Experimental Design

3.1 Research Objects

To avoid deviations that may be caused by the areas and industries of the cooperatives, we chose farming cooperatives in Fujian Province as the research objects. Referring to the evaluation standards for model farmers' cooperatives, we selected as the study objects those cooperatives listed in the 2014 roster of model cooperatives announced by the Agriculture Department of Fujian Province.

3.2 Scale Design Principles and Procedures

Data were collected using the questionnaire method. The measurement scale and questionnaire were designed according to the rules proposed by Hinkin [1998]. We prepared the initial questionnaire based on literature review. Following discussion with industry experts, we then selected an appropriate measurement scale and descriptions for the questionnaire. After exploratory and confirmatory factor analysis, we tested

the validity and reliability of the questionnaire, then deleted any unscientific measurement scale. Once the scales were finalized, it was presented as a formal questionnaire, and a large-scale survey was conducted. The questionnaire included the human and social capitals of farmers' cooperatives' director-generals and business performance. The questionnaire had five parts: basic information, human capital, social capital, management effectiveness, and cooperative performance. There were 45 items related to the relevant variables, and a five-point measurement method was adopted.

Table 1. Human capital, social capital, and performance survey items

Constructs	Variables (codes)	References
<i>Human capital</i>		
Knowledge	Education (ZSRL1)	[Schultz, 1961], [Blundell et al., 1999], [Arvanitis and Loukis, 2009], [Lazear, 2009], [McCallum and O'Connell, 2009]
	Training times (ZSRL2)	
	Agricultural skills (ZSRL3)	
	Computer skills (ZSRL4)	
	Internet communication skill (ZSRL5)	
Ability	Working experiences before the farmer cooperative work (NLRL1)	[Xu and Zhang, 2014]
	Working years in cooperative (NLRL2)	
Motivation	Shareholding ratio (JLRL1)	[Xu and Zhang, 2016]
	Honor and reward gained (JLRL2)	
<i>Social capital</i>		
Internal relations	Trust between directors and supervisory board members (NBSH1)	[Putnam, 1993], [Lv and Gong, 2012], [Ju, 2014]
	Trust from cooperative members (NBSH2)	
	Networking with cooperative members (NBSH3)	
Commercial relations	Trust from financial institutions (SYSH1)	[Uzzi, 1999], [Yao et al., 2016], [Adler and Kwon, 2002]
	Networking with financial institution members (SYSH2)	
	Networking with other cooperatives or cooperative managers (SYSH3)	
	Networking with agricultural product wholesalers or buyers (SYSH4)	
Political relations	Networking with government departments (ZZSH1)	[Faccio, 2006], [Wu et al., 2008]
	Trust from village cadres (ZZSH2)	
	Trust from government leaders (ZZSH3)	
Innovative relations	Networking with technical services/research institutes (CXSH1)	[Siomkos and Kurzbard, 1994], [Tsai and Ghoshal, 1998]
	Networking with social media or reporters (CXSH2)	
<i>Performance</i>		
Financial	Operating income can make ends meet (CWJX1)	[Kaplan and Norton, 1995], [Chibanda et al., 2009]
	Annual distributable surplus (CWJX2)	
	Cooperative profit (CWJX3)	
Customer-focused	Market share (GKJX1)	
	Increased cooperative farmer number (GKJX2)	
	Satisfaction of cooperative members (GKJX3)	
Internal process	Proportion of production sale (NBJX1)	
	Proportion of production purchased and distributed (NBJX2)	
	Technical guidance for cooperative members (NBJX3)	
	Council meeting times (NBJX4)	
Learning and growth	Training times for members (CZJX1)	[Carlucci et al., 2004], [Liang et al., 2015]
	Members can actively offer advices (CZJX2)	
	Brand development (CZJX3)	
	Number of certificated brands (CZJX4)	

3.3 Data Acquisition

We selected 400 cooperatives as survey candidates based on geographic area and business scope. The completed questionnaires were then collected and screened. Incomplete questionnaires and those with obvious errors were regarded as invalid and excluded. Of the 400 questionnaires administered, 356 were collected. Excluding invalid questionnaires, 303 questionnaires were obtained (85.1%).

3.4 Scale Evaluation Method

Reliability and validity are metrics for evaluating whether the structure of a theoretical model, the design of the indexes for each variable, and the observation data are reliable and accurate. Reliability refers to consistency within the scale, measuring the deviations caused by different measurement items. Cronbach's alpha is a tool for assessing the reliability of scales [Santos, 1999]; generally, reliability is high when Cronbach's alpha is >0.7 .

Human capital, social capital, management effectiveness, and operational performance comprise several dimensions. Since each dimension contains different measurement factors, it is necessary to analyze its structural validity. When Bartlett's test of sphericity is significant, factor analysis is recommended. In that case, no further analysis is needed for Kaiser–Mayer–Olkin (KMO) values <0.6 . For KMO values ranging from 0.6 to 0.7, theoretical analysis is used as the basis to decide whether to perform factor analysis according to the actual situation. For KMO values >0.7 , factor analysis is conducted [Ferguson and Cox, 1993]. In this study, SPSS 17.0 and AMOS 17.0 were used for factor analysis.

3.5 Confirmatory Factor Analysis of the Measurement Models

To verify the degree of consistency between the factor model of the scale and the data collected from the questionnaire, i.e., the fitness of using the index variable to measure the latent variable, construct reliability was further checked. We verified whether the variables fit well by validating the structural equation modeling (SEM)-based measurement model.

3.6 SEM Analysis

The SEM model integrates regression analysis, confirmatory factor analysis, and path analysis, which are often used to construct, evaluate, and test causal relationship models. In our study, the exogenous latent variables included knowledge, ability, and motivation with regard to human capital; internal, commercial, political, and innovative social capital; resource acquisition ability and management ability in management effectiveness. The endogenous latent variables included financial performance, customer-focused performance, internal performance, as well as learning and growth performance in the overall operational performance.

4 Experimental Results

4.1 Scale Reliability and Validity Test

4.1.1 Reliability Analysis

A reliability test was used to analyze all subscales. The results showed that while the reliability of innovative social capital was slightly low (0.71), all others had high reliability, with values >0.75 . Therefore, the measurement terms for all variables, including human capital, social capital, management effectiveness, and cooperative performance, met the requirements.

4.1.2 Validity Analysis

The structural validity of the scale was tested by factor analysis. When the KMO value is >0.7 , and the load coefficient of each item is >0.5 , each index item of the same variable is integrated into one factor by factor analysis. According to our results, Bartlett's test of sphericity is all significant, and KMO values were all >0.6 , except for innovative social capital (0.57). These indicators were suitable for the following factor analysis.

4.1.3 Confirmatory Factor Analysis of the Measurement Models

To verify the degree of consistency between the factor model of the scale and the data collected, the validity of the constructs used in the scale were verified for separate subscales and scales. The confirmatory factor analysis for human capital measurement model, social capital measurement model, management effectiveness measurement model, and cooperative operational performance measurement model all showed a relative chi-squared of <5 , root mean square error of approximation (RMSEA) <0.01 , goodness of fit index (GFI) >0.90 , comparative fit index (CFI) >0.90 , suggesting that the measurement models for variables are reasonable.

4.2 Relationships among Human Capital, Social Capital, and Operational Performance

4.2.1 Modified Model for the Impact of Human and Social Capitals on Operational Performance

We used the relationship between the three factors of human capital, four factors of social capital, and operational performance to analyze the theoretical models and obtained the model-fit results. In the process of testing the theoretical models, the final test model was obtained. Among them, five hypotheses (H1a, H1b, H1c, H2b, and H3b) for human capital did not have data support, and the corresponding five paths were deleted. There was a large error covariance between the knowledge human capital items ZSRL1 and ZSRL4, between ability human capital item NLRL1 and motivation human capital item JLRL2, and between internal performance item NBJX3 and growth performance item CZJX2. Therefore, the corresponding error term was defined as the correlation. Finally, the modified version of the theoretical model was obtained (Figure 1). All parameter estimates were revealed to be statistically significant at $P < 0.05$ in the final model of SEM estimation. The fit measures indicate an acceptable model fit, with relative chi-squared of <5 (3.86) and values of CFI, GFI, and Tucker–Lewis Index (TLI) >0.9 . Table 2 summarizes the hypotheses and the test results for human capital, social capital, cooperative management effectiveness, and operational performance proposed in this study.

4.2.2 Mediating Role of Cooperative Management Effectiveness in the Influence of Human and Social Capitals on Operational Performance

To further explore the mechanism of the influence of human and social capitals on operational performance, we analyzed the mediating role of cooperative management effectiveness in the influence on operational performance. We used the Sobel test to check the mediating effect for the path of human and social capitals affecting operational performance [MacKinnon et al., 2012]. The results are shown in Table 3. Resource acquisition ability mediates the influence of ability and motivation human capital on financial, internal process, as well as learning and growth performance. Resource acquisition ability also mediates the influence of internal, commercial, political and innovative social capital on financial, customer-focused, internal process, as well as learning and growth performance. Thus, resource acquisition ability plays mediating roles in the influence of human and social capitals on performance. Moreover, management ability mediates the influence of ability and motivation human capital on financial, internal process, as well as learning and growth performance. Management ability also mediates the influence of internal,

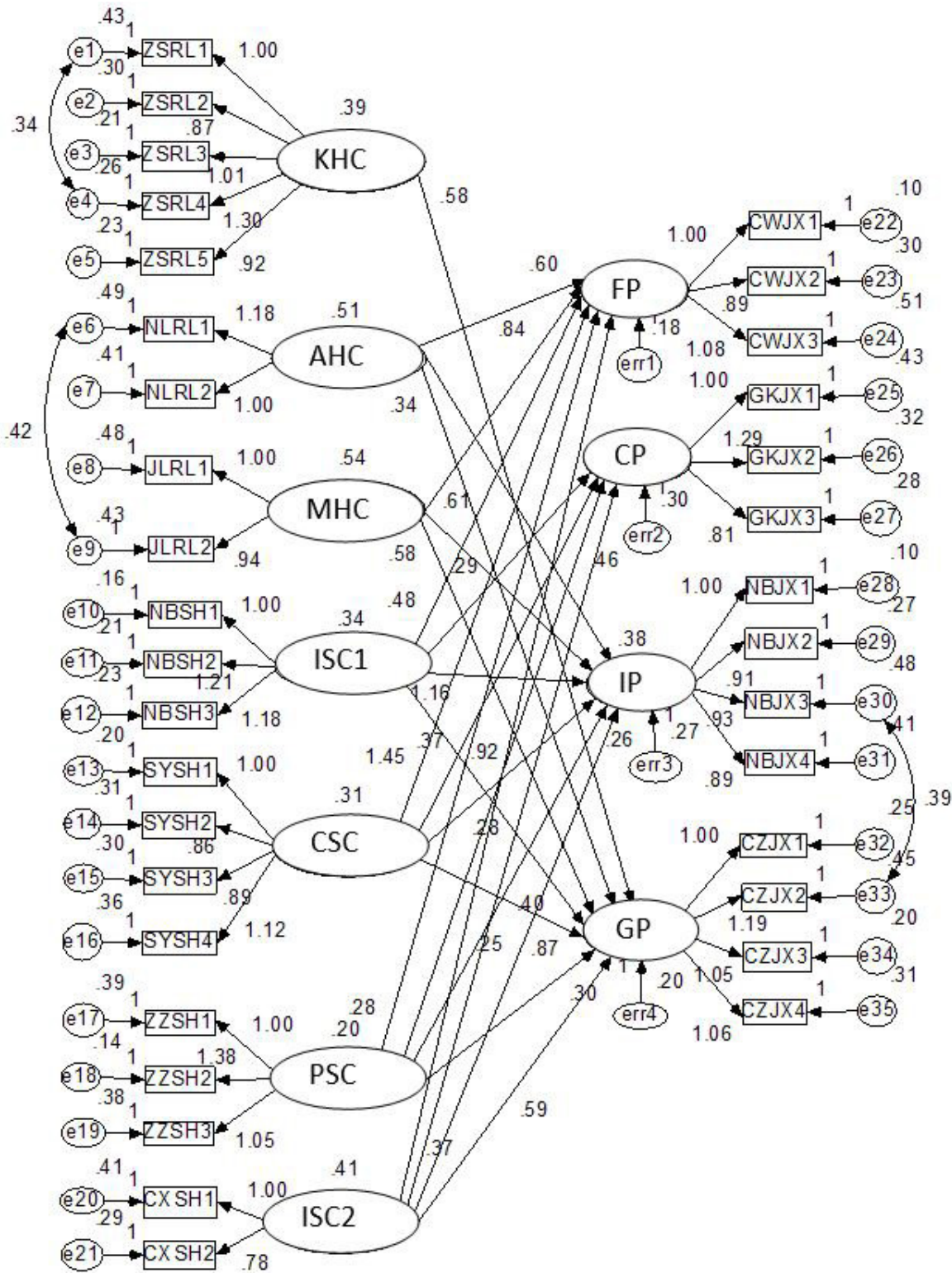


Figure 1. Corrected model path coefficient diagram for the relationship between human capital, social capital, and performance. KHC: knowledge human capital; AHC: ability human capital; MHC: motivation human capital; ISC1: internal social capital; ISC2: innovative social capital; CSC: commercial social capital; PSC: political social capital; FP: financial performance; CP: customer-focused performance; IP: internal process performance; GP: learning and growth performance.

Table 2. Summary of test results for the proposed hypotheses

No.	Hypothesis	Result
H1a	Positive correlation between knowledge human capital and financial performance	×
H1b	Positive correlation between knowledge human capital and customer-focused performance	×
H1c	Positive correlation between knowledge human capital and internal process performance	×
H1d	Positive correlation between knowledge human capital and learning and growth performance	√
H2a	Positive correlation between ability human capital and financial performance	√
H2b	Positive correlation between ability human capital and customer-focused performance	×
H2c	Positive correlation between ability human capital and internal process performance	√
H2d	Positive correlation between ability human capital and learning and growth performance	√
H3a	Positive correlation between motivation human capital and financial performance	√
H3b	Positive correlation between motivation human capital and customer-focused performance	×
H3c	Positive correlation between motivation human capital and internal process performance	√
H3d	Positive correlation between motivation human capital and learning and growth performance	√
H4a	Positive correlation between internal social capital and financial performance	√
H4b	Positive correlation between internal social capital and customer-focused performance	√
H4c	Positive correlation between internal social capital and internal process performance	√
H4d	Positive correlation between internal social capital and learning and growth performance	√
H5a	Positive correlation between commercial social capital and financial performance	√
H5b	Positive correlation between commercial social capital and customer-focused performance	√
H5c	Positive correlation between commercial social capital and internal process performance	√
H5d	Positive correlation between commercial social capital and learning and growth performance	√
H6a	Positive correlation between political social capital and financial performance	√
H6b	Positive correlation between political social capital and customer-focused performance	√
H6c	Positive correlation between political social capital and internal process performance	√
H6d	Positive correlation between political social capital and learning and growth performance	√
H7a	Positive correlation between innovative social capital and financial performance	√
H7b	Positive correlation between innovative social capital and customer-focused performance	√
H7c	Positive correlation between innovative social capital and internal process performance	√
H7d	Positive correlation between innovative social capital and learning and growth performance	√
H8a	Positive correlation between resource acquisition ability and financial performance	√
H8b	Positive correlation between resource acquisition ability and customer-focused performance	√
H8c	Positive correlation between resource acquisition ability and internal process performance	√
H8d	Positive correlation between resource acquisition ability and learning and growth performance	√
H9a	Positive correlation between management ability and financial performance	√
H9b	Positive correlation between management ability and customer-focused performance	√
H9c	Positive correlation between management ability and internal process performance	√
H9d	Positive correlation between management ability and learning and growth performance	√

Note: “√” in the results column indicates that the hypothesis is supported by data.

commercial, political and innovative social capital on financial, customer-focused, internal process, as well as learning and growth performance. Thus, management ability plays mediating roles in the influence of human and social capitals on performance.

Table 3. Summary of the test results for mediating effect

Mediator	Dimension	Financial performance	Customer-focused performance	Internal process performance	Learning and growth performance
Resource acquisition ability	Knowledge human capital	N	N	N	N
	Ability human capital	Y	N	Y	Y
	Motivation human capital	Y	N	Y	Y
	Internal social capital	Y	Y	Y	Y
	Commercial social capital	Y	Y	Y	Y
	Political social capital	Y	Y	Y	Y
	Innovative social capital	Y	Y	Y	Y
Management ability	Knowledge human capital	N	N	N	N
	Ability human capital	Y	N	Y	Y
	Motivation human capital	Y	N	Y	Y
	Internal social capital	Y	Y	Y	Y
	Commercial social capital	Y	Y	Y	Y
	Political social capital	Y	Y	Y	Y
	Innovative social capital	Y	Y	Y	Y

Note: "Y" indicates mediator role supported by our data.

5 Discussion

Based on the empirical test, the initial theoretical model was modified, and the modified model was reasonable. Among the 36 hypotheses regarding the relationship between a director-general's human capital, social capital, cooperative management effectiveness, and cooperative operational performance, five hypotheses were proved null (Table 2). These included H1a, H1b, H1c, H2b, and H3b. The remaining hypotheses were verified. According to the test results, different factors that comprise a director-general's human and social capitals have different effects on the operational performance of a cooperative.

Regarding the mediating role, two hypotheses were verified. It was confirmed that management effectiveness plays a mediating role between the director-general's human and social capitals and cooperative operational performance. The results also verified the HSCEP theoretical model for cooperative operational performance (Figure 2).

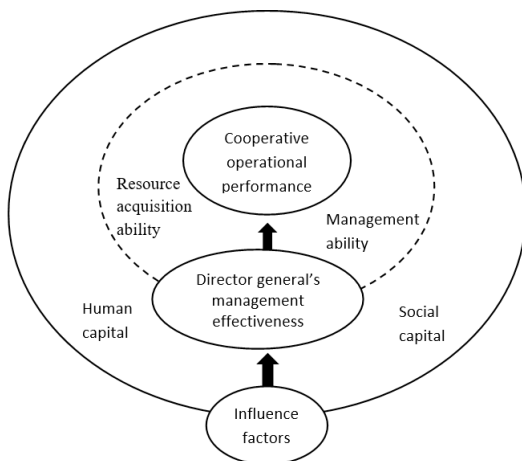


Figure 2. Human capital, Social capital, Efficacy, and Performance (HSCEP) theoretical model.

5.1 Effects of Types of Human Capital on Cooperatives' Operational Performance

First, in terms of the impact on financial performance, motivation human capital had the greatest impact, with an impact coefficient of 0.43. This indicates that director-generals' motivation human capital, composed of the material and spiritual awards received, has a great impact on the financial performance of cooperatives. In particular, the higher the shareholding ratio of the director-general, the more the director-general is concerned with the cooperative's financial performance, which may result in higher levels of performance.

Second, in terms of the impact on internal process performance, motivation human capital had the greatest impact, with an impact coefficient of 0.31, followed by ability human capital, with an impact coefficient of 0.18. This indicates that a director-general who has a certain shareholding ratio or has received more awards pays more attention to the standardizing of internal processes and maintains normal cooperative operating activities.

Third, in terms of the impact on growth performance, motivation human capital had the greatest impact, with an impact coefficient of 0.31. Knowledge human capital was next, with an impact coefficient of 0.19. Ability human capital also had a certain impact (0.16). These results indicate that the higher the human capital of the director-general, the more emphasis the director-general may place on the ability of cooperative members and the innovation ability of the cooperative. Thus, the training of cooperative members is promoted, and the brand development and product certification of cooperatives are strengthened.

5.2 Effects of Types of Social Capital on the Operational Performance of Cooperatives

First, in terms of the impact on financial performance, the impact coefficient of commercial social capital on financial performance was the greatest, reaching 0.70. Internal social capital was next, with an impact coefficient of 0.25. The impacts of innovative social capital and political social capital were relatively small (0.15 and 0.15, respectively). This shows the importance of commercial social capital in cooperatives' financial performance.

Second, in terms of the impact on customer-focused performance, the impact coefficient of political social capital on the customer-focused performance of cooperatives was the greatest, reaching 0.22. The impact of commercial social capital was second, with an impact coefficient of 0.18. Internal social capital also had an impact, with an impact coefficient of 0.15. This suggests that several types of social capital have certain impacts on the customer-focused performance of cooperatives, but those impacts are low.

Third, in terms of the impact on internal process performance, internal social capital had the greatest impact, with an impact coefficient of 0.56, followed by commercial social capital, with an impact coefficient of 0.45. Political social capital had a small impact, with an impact coefficient of only 0.14. These results suggest that the trust and support that director-generals receive from other members of the organization have a great impact on the operations of cooperatives and the processes of operating activities. Establishing good internal key processes is, therefore, an important precondition for maintaining long-term normal operational activities.

Fourth, in terms of the impact on growth performance, commercial social capital had the greatest impact, with an impact coefficient of 0.43, followed by innovative social capital, with an impact coefficient of 0.29. Internal social capital also had a fairly large impact (0.27), while political social capital had a weak impact (0.16). This suggests that commercial social capital has a significant impact on cooperative members' abilities and cooperatives' innovation abilities.

Lastly, based on these results, we can see that while a certain positive relationship exists between a director-general's political social capital and the cooperative's operational performance, the relationship is weak due to the smaller path coefficient. This suggests that director-generals have inadequate ability to cultivate, accumulate, and exert political and social capital. Thus, the extent of the impact of political social capital on the performance of cooperatives is not significant.

5.3 Test and Analysis of the Mediating Role of Cooperative Management Effectiveness

We have proposed that there may be a mediating effect between a director-general's human and social capitals and the cooperative's operational performance. In other words, the director-general's human and social capitals influence the performance of cooperatives through mediating variables. This assumption is supported by the empirical results.

5.3.1 Mediating Role of Management Effectiveness in the Relationship between Director-Generals' Human Capital and Cooperatives' Operational Performance

Resource acquisition ability and management ability were found to play a mediating role between human capital ability on the one hand and financial performance, internal processes, and growth performance of cooperatives on the other hand. So does human capital motivation. This further suggests that management effectiveness plays a partial mediating role in director-generals' human capital and cooperative's operational performance. The reason for this could be that a director-general's human capital reflects the knowledge and skills he/she possesses for managing cooperatives. Although the knowledge human capital signified by educational level cannot be intuitively reflected in management ability, years of work experience and the director-general's share in the cooperative reflect his/her management desire and ability. To an outside agency, the more competent a director-general is in these two aspects, the higher is his/her credibility. By improving the organizational image of cooperatives, outside organizations can more easily trust and cooperate with them, thus making it easier for them to externally obtain the necessary organizational resources.

5.3.2 Mediating Role of Management Effectiveness in the Relationship between Director-Generals' Social Capital and Cooperatives' Operational Performance

In verifying the path model of the relationships between director-generals' social capital and cooperatives' operational performance, all four variables were entered into the mediating role test. The results showed that resource acquisition ability played a mediating role between internal, commercial, political, and innovative social capital on the one hand and financial performance, customer-focused performance, internal process performance, as well as learning and growth performance on the other hand.

Management ability mainly played a mediating role between four social capital variables (internal, commercial, political, and innovative social capital) and four performance variables (financial performance, customer-focused performance, internal process performance, as well as learning and growth performance). Thus, management ability plays a mediating role between a director-general's social capital and operational performance.

6 Conclusions and Policy Implications

6.1 Influence of Director-General's Human Capital Elements on Cooperative's Performance

1. The impact of knowledge human capital on the performance of cooperatives is mainly reflected in learning and growth but is not significant for financial performance. Higher educational level does not necessarily improve organizational performance. As such, knowledge-based human capital has a relatively small impact on cooperative performance.
2. The impact of ability-based human capital on the performance of cooperatives is mainly reflected in three aspects: finance, internal processes, as well as learning and growth. Among them, the impact on

financial performance is significant. The length of a director-general's work experience is significantly and positively correlated with a cooperative's performance.

3. The impact of motivation-based human capital on the performance of cooperatives is mainly reflected in three aspects: finance, internal processes, as well as learning and growth. Among them, the impact on financial performance is more significant. When a director-general holds a greater share in the cooperative, it is beneficial for the improvement of the cooperative's performance.

6.2 Influence of the Director-General's Social Capital Elements on Cooperative's Performance

1. There is a positive relationship between the director-general's internal social capital and the cooperative's performance in terms of finance, customers, internal processes, as well as learning and growth. Internal performance is more affected by internal social capital. With higher internal social capital, there are increases in agricultural product sales, the procurement and distribution of agricultural products and capital goods, and member satisfaction with the cooperative's services. Thus, the implementation of the system is also relatively good.
2. Commercial social capital has a significant impact on the performance of cooperatives. It has the greatest impact on financial performance, followed by the impact on internal performance, then on learning and growth performance, with the least impact on customer-focused performance. This indicates that the external commercial network owned by the director-general greatly influences the cooperative's operating activities.
3. The director-general's political social capital has a direct influence on the performance of the cooperative, but the influence coefficient is relatively low. This indicates that currently, the accumulation and application of the director-general's political social capital is not sufficient. As a result, its effect on cooperative's performance is not significant.
4. Innovative social capital mainly concerns the director-general's scientific research and media relations. Its overall influence on operational performance is low. To some extent, this reflects deficiencies among current director-generals in terms of grasping technology and media relations. In practice, technology has been proven to bring about advanced productivity. For cooperatives, new technologies have an effect in terms of boosting production and increasing income. Active cooperation with scientific research departments can serve to not only obtain advanced and relevant technologies but also train cooperative members with the aid of teachers from research institutes to promote their growth. Positive media propaganda can help to establish good marketing images for cooperatives and may, in fact, have a positive impact on customer-focused performance.

6.3 Improvement Measures for Director-Generals' Human and Social Capitals

6.3.1 Improving Director-Generals' Human and Social Capitals Based on a Two-Dimensional Model

In developing cooperatives, the role of the director-general's human and social capitals is increasingly important. Based on our results, a director-general's human and social capitals can be summarized into four types (Figure 3). According to these different types, different measures should be adopted to improve director-generals' ability and promote the growth of cooperatives.

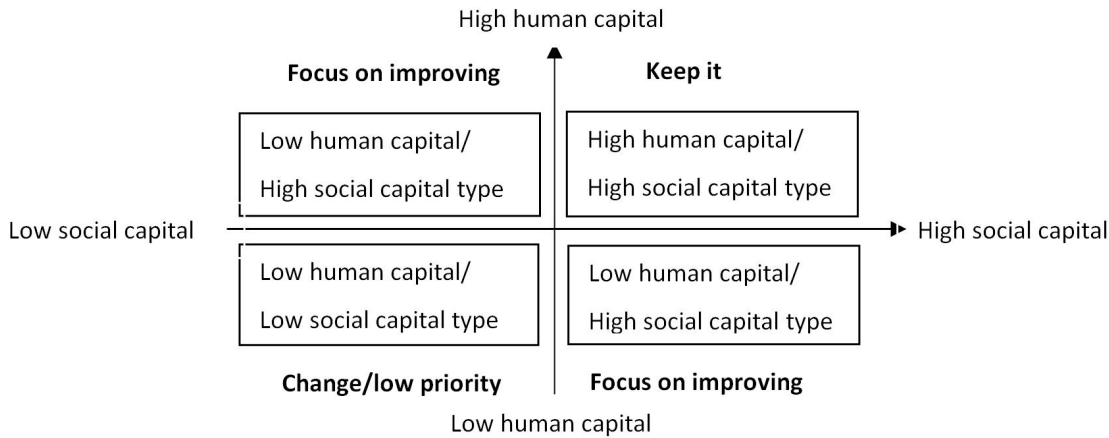


Figure 3. Two-dimensional model formed from director-general's human capital and social capital.

6.3.2 Improving Director-Generals' Human Capital and Promoting Cooperative Development

According to our results, director-generals' current level of human capital is low. This is reflected in the low level of knowledge human capital and the generally low level of education. Director-generals cannot fully grasp cooperative management systems and norms, hindering cooperatives from meeting the government's requirements for normative and long-term sustainable development. Director-generals lack knowledge about Internet tools and have a weak ability to grasp market opportunities. In this regard, government departments and related agencies should give full play to their respective functions and responsibilities, integrate different kinds of resources, and cultivate better personnel for cooperatives. To meet the requirements for cooperative development, multilevel training systems for director-generals, diversified training methods, and practical training courses should be established and improved according to local conditions. Trainings should provide cooperatives with qualified management personnel with management ability, management desire, and a sense of innovation. Training should focus on results and effectiveness. To elevate effectiveness, feedback should also be sought to improve personnel training (Figure 4).

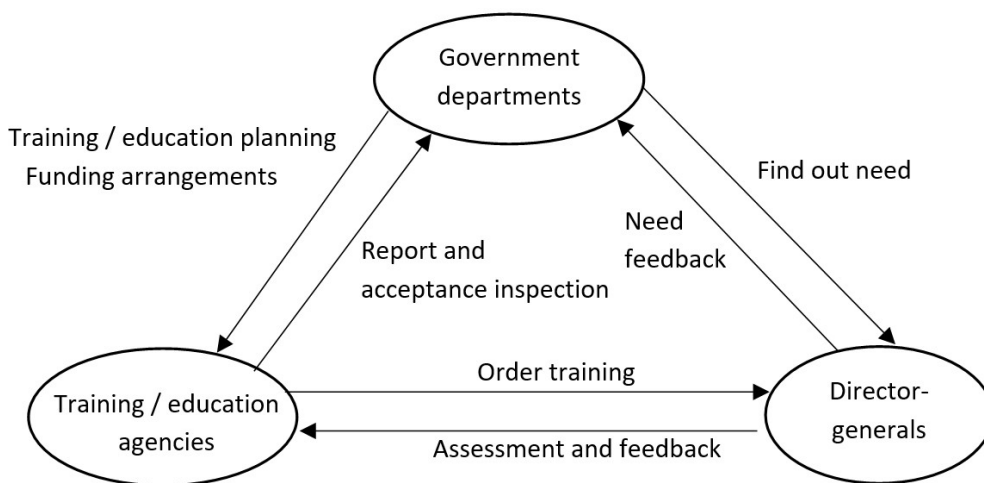


Figure 4. Triangle model for professional training procedure for cooperatives' director-generals.

6.3.3 Improving Director-Generals' Social Capital Based on the Internal Trust, Government Policy Support, and Business Network (IGB) Model

As economic organizations, cooperatives must possess the qualities of internal trust and cooperation. It is only with outside support in terms of fund, talent, and technology that a director-general's human capital function can be fully and effectively demonstrated. In addition to focusing on the director-generals' human capital, we should also focus on improving their social capital elements. Based on our empirical analysis, we propose that the improvement of the director-general's social capital should be based on internal trust, government policy support, and the cultivation of business networks. Director-generals should build an image among internal members to enhance trust and maintain the necessary government contacts to obtain policy support and receive technical support and public support. At the same time, they should broaden their social networks, strengthen business network relations, and create a sound business environment. The improvement path for social capital based on the IGB model is shown in Figure 5.

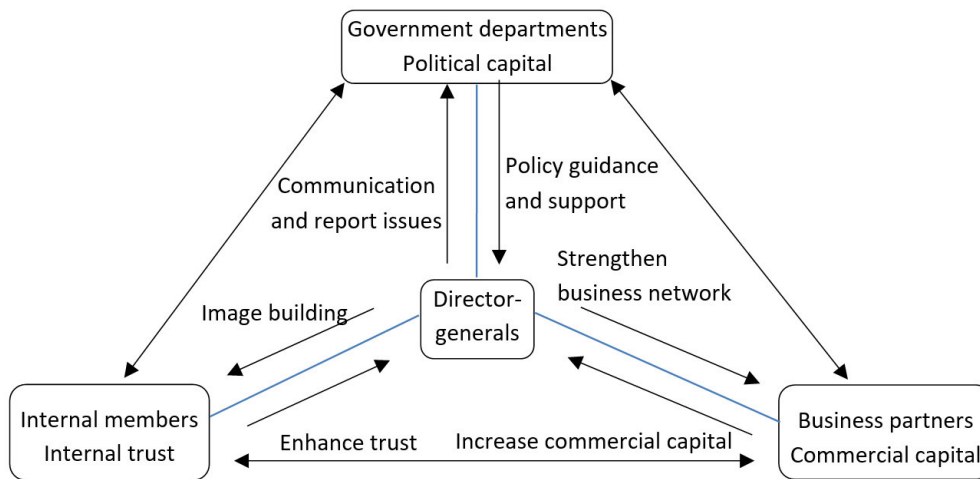


Figure 5. The social capital enhancement pathway for director-generals based on the internal trust, Government policy support, and Business network (IGB) model.

6.4 Limitations and Future Research

Some limitations of this study should be noted. First, similar research reports about farmers' cooperatives' director-generals are relatively few, so we refer to enterprises for some of the indicators. Thus, our theoretical model may not consider all the potential factors. Second, the performance may be influenced by many other factors, such as policy support, sector type, and business size, apart from director-generals' human and social capitals. Although the criterion for inclusion of standard cooperative samples is introduced, these factors may also work on performance. Therefore, these factors may be taken into account in future research. Third, the farmers' cooperative performance measurement is not mature, so indicators are borrowed from the Balanced Scorecard approach [Kaplan and Norton, 1995]. National conditions and properties of farmers' cooperatives are incorporated into performance measurement items. Although optimized, these measurements may introduce some scholarly described items, which may cause variation in understanding the questionnaire. Finally, the investigated territory is restricted to nine cities of Fujian Province, making our conclusions applicable to limited areas, i.e., similar coastal regions of East China. However, it is not clear whether the imbalance in the development of the regional economy could cause significant differences in performance attributed to director-generals' human and social capitals. Currently, no statistics is available, and no related research has been reported about the differences. Future large-

scale and cross-region investigations should be performed to address the generality of our conclusion. The proposed implications can be absorbed by other country regions, but with caution according to local circumstances. Overall, the outcomes of this study can benefit cooperatives' director-generals and human resource personnel in terms of understanding the influence of director-generals' human and social capitals on organizational performance. The results may also be useful for policymakers to establish a better environment for the development of cooperatives.

References

- Acquaah, M. (2007), Managerial social capital, strategic orientation, and organizational performance in an emerging economy, *Strategic Management Journal*, Vol. 28, No. 12, pp. 1235–1255.
- Adler, P.S., Kwon, S.-W. (2002), Social capital: prospects for a new concept, *Academy of Management Review*, Vol. 27, No. 1, pp. 17–40.
- Anklam, P. (2002), Knowledge management: the collaboration thread, *Bulletin of the American Society for Information Science and Technology*, Vol. 28, No. 6, pp. 8–11.
- Arvanitis, S., Loukis, E.N. (2009), Information and communication technologies, human capital, workplace organization and labour productivity: a comparative study based on firm-level data for Greece and Switzerland, *Information Economics and Policy*, Vol. 21, No. 1, pp. 43–61.
- Bantel, K.A., Jackson, S.E. (1989), Top management and innovations in banking: does the composition of the top team make a difference? *Strategic Management Journal*, Vol. 10, No. 51, pp. 107–124.
- Batjargal, B. (2007), Internet entrepreneurship: social capital, human capital, and performance of Internet ventures in China, *Research Policy*, Vol. 36, No. 5, pp. 605–618.
- Becker, B., Gerhart, B. (1996), The impact of human resource management on organizational performance: progress and prospects, *Academy of Management Journal*, Vol. 39, No. 4, pp. 779–801.
- Bhagavatula, S., Elfring, T., van Tilburg, A., van de Bunt, G.G. (2010), How social and human capital influence opportunity recognition and resource mobilization in India's handloom industry, *Journal of Business Venturing*, Vol. 25, No. 3, pp. 245–260.
- Blundell, R., Dearden, L., Meghir, C., Sianesi, B. (1999), Human capital investment: the returns from education and training to the individual, the firm and the economy, *Fiscal Studies*, Vol. 20, No. 1, pp. 1–23.
- Bond, J.K. (2009), Cooperative financial performance and board of director characteristics: a quantitative investigation, *Journal of Cooperatives*, Vol. 22, pp. 777–780.
- Bosma, N., Van Praag, M., Thurik, R., de Wit, G. (2004), The value of human and social capital investments for the business performance of startups, *Small Business Economics*, Vol. 23, No. 3, pp. 227–236.
- Carlucci, D., Marr, B., Schiuma, G. (2004), The knowledge value chain: how intellectual capital impacts on business performance, *International Journal of Technology Management*, Vol. 27, No. 6–7, pp. 575–590.
- Chandler, G.N., Hanks, S.H. (1994), Founder competence, the environment, and venture performance, *Entrepreneurship Theory and Practice*, Vol. 18, No. 3, pp. 77–89.
- Chibanda, M., Ortmann, G.F., Lyne, M.C. (2009), Institutional and governance factors influencing the performance of selected smallholder agricultural cooperatives in KwaZulu-Natal, *Agrekon*, Vol. 48, No. 3, pp. 293–315.
- Coleman, J.S. (1988), Social capital in the creation of human capital, *American Journal of Sociology*, Vol. 94, pp. S95–S120.
- Cooke, P., Wills, D. (1999), Small firms, social capital and the enhancement of business performance through innovation programmes, *Small Business Economics*, Vol. 13, No. 3, pp. 219–234.
- Cooper, A.C., Gimeno-Gascon, F.J., Woo, C.Y. (1994), Initial human and financial capital as predictors of new venture performance, *Journal of Business Venturing*, Vol. 9, No. 5, pp. 371–395.
- Davidsson, P., Honig, B. (2003), The role of social and human capital among nascent entrepreneurs, *Journal of Business Venturing*, Vol. 18, No. 3, pp. 301–331.
- Dimov, D.P., Shepherd, D.A. (2005), Human capital theory and venture capital firms: exploring “home runs” and “strike outs”, *Journal of Business Venturing*, Vol. 20, No. 1, pp. 1–21.
- Eicher, T.S. (1996), Interaction between endogenous human capital and technological change, *The Review of Economic Studies*, Vol. 63, No. 1, pp. 127–144.
- Faccio, M. (2006), Politically connected firms, *American Economic Review*, Vol. 96, No. 1, pp. 369–386.
- Felício, J.A., Couto, E., Caiado, J. (2014), Human capital, social capital and organizational performance, *Management Decision*, Vol. 52, No. 2, pp. 350–364.
- Ferguson, E., Cox, T. (1993), Exploratory factor analysis: a users' guide, *International Journal of Selection and Assessment*, Vol. 1, No. 2, pp. 84–94.
- Hall, B.J., Liebman, J.B. (1998), Are CEOs really paid like bureaucrats? *The Quarterly Journal of Economics*, Vol. 113, No. 3, pp. 653–691.

- Hinkin, T.R. (1998), A brief tutorial on the development of measures for use in survey questionnaires, *Organizational Research Methods*, Vol. 1, No. 1, pp. 104–121.
- Ju, L. (2014), Studies of the social capital index system of the farmer cooperative's president (in Chinese), *Journal of Qingdao Agricultural University*, Vol. 26, No. 1, pp. 7–10.
- Kaplan, R.S., Norton, D.P. (1995), Putting the balanced scorecard to work, in: *Performance measurement, management, and appraisal sourcebook*, Human Resource Development Press, Amherst, pp. 66–74.
- Karami, A., Analoui, F., Kakabadse, N.K. (2006), The CEOs' characteristics and their strategy development in the UK SME sector: an empirical study, *Journal of Management Development*, Vol. 25, No. 4, pp. 316–324.
- Khanna, P., Jones, C.D., Boivie, S. (2014), Director human capital, information processing demands, and board effectiveness, *Journal of Management*, Vol. 40, No. 2, pp. 557–585.
- Kor, Y.Y., Sundaramurthy, C. (2009), Experience-based human capital and social capital of outside directors, *Journal of Management*, Vol. 35, No. 4, pp. 981–1006.
- Lazear, E.P. (2009), Firm-specific human capital: a skill-weights approach, *Journal of Political Economy*, Vol. 117, No. 5, pp. 914–940.
- Lechner, C., Dowling, M. (2003), Firm networks: external relationships as sources for the growth and competitiveness of entrepreneurial firms, *Entrepreneurship & Regional Development*, Vol. 15, No. 1, pp. 1–26.
- Leenders, R.T.A., Gabbay, S.M. (2013), *Corporate social capital and liability*. Springer Science & Business Media, New York.
- Lewin, P. (2002), Entrepreneurship and the defense of capitalism: an examination of the work of Israel Kirzner, *Journal des Economistes et des tudes Humaines*, Vol. 12, No. 2, pp. 203–212.
- Liang, Q., Huang, Z., Luc, H., Wangd, X. (2015), Social capital, member participation, and cooperative performance: evidence from China's Zhejiang, *International Food and Agribusiness Management Review*, Vol. 18, No. 1, pp. 49–78.
- Lv, C., Gong, F. (2012), Farmers' professional cooperatives' product supply chain and its impact on performance (in Chinese), *Economist*, No. 11, pp. 177–179.
- MacKinnon, D.P., Coxo, S., Baraldi, A.N. (2012), Guidelines for the investigation of mediating variables in business research, *Journal of Business and Psychology*, Vol. 27, No. 1, pp. 1–14.
- McCallum, S., O'Connell, D. (2009), Social capital and leadership development: building stronger leadership through enhanced relational skills, *Leadership & Organization Development Journal*, Vol. 30, No. 2, pp. 152–166.
- Nahapiet, J., Ghoshal, S. (1998), Social capital, intellectual capital, and the organizational advantage, *Academy of Management Review*, Vol. 23, No. 2, pp. 242–266.
- Putnam, R.D. (1993), The prosperous community, *The American Prospect*, Vol. 4, No. 13, pp. 35–42.
- Ruben, R., Heras, J. (2012), Social capital, governance and performance of Ethiopian coffee cooperatives, *Annals of Public and Cooperative Economics*, Vol. 83, No. 4, pp. 463–484.
- Santos, J.R.A. (1999), Cronbach's alpha: a tool for assessing the reliability of scales, *Journal of Extension*, Vol. 37, No. 2, pp. 1–5.
- Schneider, G., Plümper, T., Baumann, S. (2000), Bringing Putnam to the European regions: on the relevance of social capital for economic growth, *European Urban and Regional Studies*, Vol. 7, No. 4, pp. 307–317.
- Schultz, T.W. (1961), Investment in human capital, *The American Economic Review*, Vol. 51, No. 1, pp. 1–17.
- Siomkos, G.J., Kurzbard, G. (1994), The hidden crisis in product-harm crisis management, *European Journal of Marketing*, Vol. 28, No. 2, pp. 30–41.
- Stigler, G.J., Friedland, C. (1983), The literature of economics: the case of Berle and Means, *The Journal of Law and Economics*, Vol. 26, No. 2, pp. 237–268.
- Stolle, D., Rochon, T.R. (2001), Are all associations alike? in: B. Edwards, M.W. Foley, M. Diani, (Eds), *Beyond Tocqueville: civil society and the social capital debate in comparative perspective*, University Press of New England, Tufts University, Hanover and London, pp. 143–156.
- Tsai, W., Ghoshal, S. (1998), Social capital and value creation: the role of intrafirm networks, *Academy of Management Journal*, Vol. 41, No. 4, pp. 464–476.
- Ucbasaran, D., Westhead, P., Wright, M. (2008), Opportunity identification and pursuit: does an entrepreneur's human capital matter? *Small Business Economics*, Vol. 30, No. 2, pp. 153–173.
- Uzzi, B. (1999), Embeddedness in the making of financial capital: how social relations and networks benefit firms seeking financing, *American Sociological Review*, Vol. 64, No. 4, pp. 481–505.
- Westlund, H., Bolton, R. (2003), Local social capital and entrepreneurship, *Small Business Economics*, Vol. 21, No. 2, pp. 77–113.
- Wu, W., Wu, C., Liu, X. (2008), Political connection and market valuation: evidence from China individual-controlled listed firms (in Chinese), *Economic Research Journal*, No. 7, pp. 130–141.
- Wyrwa, J. (2014), Social capital and development of an enterprise, *Management*, Vol. 18, No. 1, pp. 280–300.
- Xu, C., Zhang, C. (2014), Chairman of forestry professional cooperatives ability evaluation in Fujian based on the AHP (in Chinese), *Forestry Economics*, Vol. 36, No. 2, pp. 79–83.
- Xu, C., Zhang, C. (2016), Empirical study on the director-general human capital's influence on specialized farmer forestry cooperatives in Fujian Province (in Chinese), *Issues of Forestry Economics*, Vol. 36, No. 1, pp. 14–18.

- Yao, Z., Zheng, S., Lin, C. (2016), Impact of the social capitals of directors on the business performance of cooperatives – based on the analysis of three typical cooperatives in Fujian (in Chinese), *Taiwan Agricultural Research*, No. 2, pp. 39–42.
- Yli-Renko, H., Autio, E., Tonttic, V. (2002), Social capital, knowledge, and the international growth of technology-based new firms, *International Business Review*, Vol. 11, No. 3, pp. 279–304.
- Zhao, Q., Li, Y. (2007), Relation network and cooperative economy in China's rural society: a perspective of social capital (in Chinese), *Issues in Agricultural Economy*, No. 8, pp. 40–46.
- Zhao, Y., He, A. (2007), Rural cooperative organizations, collective behaviors and public water resources supply – performance analysis of Peasant-Using-Water Association of Weihe River valley in the viewpoint of social capital (in Chinese), *Journal of Chongqing Technology & Business University*, Vol. 17, No. 1, pp. 5–9.