



CEOs versus members' evaluation of cooperative performance: Evidence from China

Xiao Peng , Qiao Liang , Wendong Deng & George Hendrikse

To cite this article: Xiao Peng , Qiao Liang , Wendong Deng & George Hendrikse (2020) CEOs versus members' evaluation of cooperative performance: Evidence from China, The Social Science Journal, 57:2, 219-229, DOI: [10.1016/j.soscij.2019.01.006](https://doi.org/10.1016/j.soscij.2019.01.006)

To link to this article: <https://doi.org/10.1016/j.soscij.2019.01.006>



Published online: 27 Jan 2020.



Submit your article to this journal [↗](#)



Article views: 16



View related articles [↗](#)



View Crossmark data [↗](#)



CEOs versus members' evaluation of cooperative performance: Evidence from China

Xiao Peng^{a,b}, Qiao Liang^c, Wendong Deng^d, and George Hendrikse^a

^aRotterdam School of Management, Erasmus University, Rotterdam, The Netherlands; ^bInternational Business, Faculty Business, Finance and Marketing, The Hague University of Applied Sciences, The Netherlands; ^cChina Academy for Rural Development, School of Public Affairs, Zhejiang University, China; ^dBreda University of Applied Science, The Netherlands

ABSTRACT

Cooperatives are special because the members not only own the cooperative, but also patronize it. CEO's decision has an impact on the overall members' interests. Understanding how CEOs differ from members regarding their evaluations on cooperative performance and what causes the differences, is valuable for CEOs to best serve the members. This paper evaluates the difference between CEO and member evaluation regarding their cooperatives, based on a set of first-hand data containing Chinese agricultural cooperatives (240 CEOs and 543 members). Cooperative performance is measured by three indicators: member profitability, social influence in the local community, and overall performance. The results show that members have higher scores than CEOs regarding member profitability and overall performance, while CEOs have a higher evaluation regarding social influence.

ARTICLE HISTORY

Received 4 April 2018
Revised 12 January 2019
Accepted 14 January 2019

KEYWORDS

Farmer cooperative;
Performance; Evaluation;
Governance

1. Introduction

Developments in market competition, consumer demand, industry consolidation, and policy bring challenges for cooperatives. An important aspect in the response of modern cooperatives to these developments is the separation between management and the society of members (Bijman, Hendrikse, & Van Oijen, 2013; Chaddad & Cook, 2004; Hind, 1999). In this separation, decision rights have been shifted to the professional management in order to be more responsive to market competition and/or to reduce the costs of collective decision-making. This may create increasingly autonomous management and reduce the influence of members in the decision-making process and outcome (Bhuyan, 2007; Bijman et al., 2013). Therefore, the communication and understanding between members and the management serve as a key factor influencing the performance and the sustainability of cooperatives (Cook & Burrell, 2013; Meador, 2016).

The principal-agent problem in cooperatives is more complex than a standard principal-agent relationship (Cook, 1994; Cook & Iliopoulos, 2016; Grashuis & Su, 2018; Royer, 1999). Cooperatives are special because the members not only own the cooperative, but also patronize it. Members have therefore an ownership as well as a transaction relationship with the cooperative. This feature is expected to have an impact on how the cooperative is evaluated by the members as well as the manager(s) (Liang & Hendrikse, 2013a). Members expect better prices, an assured market, and also reliable services from the cooperative (Nilsson & Hendrikse, 2011). This dual role of a cooperative member makes management of a cooperative difficult. Iliopoulos and Valentinov (2018) argue that conflictual relation between members and management is one of the main issues caused by member heterogeneity, which poses a severe risk to member commitment and sequentially have effects on

cooperative performance. It therefore is important to understand these differences and conflicts, in order that members and the management work together productively.

Cooperatives in China emerged in 2000s and the number has reached 2,102,000 by the end of July, 2018. Around 48.3% of households in China joined cooperatives.¹ In Chinese cooperatives, there is also a separation between the management and the members. They differ from cooperatives in the Western world by a heterogeneous membership in terms of core and common members (Liang & Hendrikse, 2013a). Core members refer to entrepreneurial farmers who initiated a cooperative or are in charge of the management and product marketing. Among them, the CEOs are elected and they are the most important core members. Common members are farmers who buy a small amount of capital shares or pay an entry fee to join a cooperative. Therefore there is a difference in terms of the tasks performed. Liang and Hendrikse (2013a) characterize the difference as “a member CEO has multiple roles: a member or supplier of the cooperative, a member of the management, a member of the board of directors, and/or a member of the board of supervisors of the cooperative, while other members are mainly producers, inputs suppliers, and residual claimants of the cooperative”. That is to say, most Chinese cooperatives have one of the members as a CEO, rather than employing an outsider. In this situation, the CEO in a cooperative has dual identities, an agent and meanwhile a principal. Most cooperatives in China have members as their CEOs, very few cooperatives in China employ outside CEOs (Liang & Hendrikse, 2013a). The multiple roles of a CEO are likely to result in a different evaluation regarding the performance of the cooperative compared to the members.

A sustainable and successful cooperative requires a stable membership and high member commitment (Fulton & Adamowicz, 1993; Mojo, Fischer, & Degefa, 2017). This includes members' willingness to patronize the cooperative processor, invest in risky equity, and participate in the governance of the cooperative (Österberg & Nilsson, 2009). There are several empirical studies addressing members' evaluation of their cooperatives as well as predictors of the evaluation level (Misra, Carley, & Fletcher, 1993). Arcas-Lario, Martín-Ugedo, and Mínguez-Vera (2014) find that high member satisfaction increases the members' intention to continue their membership. However, the separation between the management and the members may result in dissatisfied members. Marcos-Matás, Hernández-Espallardo, and Arcas-Lario (2013) have the similar argument that a positive evaluation of the cooperative makes it more likely that members stay with their cooperative than when the evaluation is low. Members' evaluation of performance should address the dual objective nature of the organization (Franken & Cook, 2015). The theoretical literature has associated a number of behaviors with unsatisfied members. First, unsatisfied members are not willing to participate in the governance of the cooperative (Birchall & Simmons, 2004). Second, unsatisfied members do not trust the long-run perspective of the cooperative and thus will be reluctant to invest (Nilsson, Svendsen, & Svendsen, 2012). Finally, unsatisfied members may even exit and cause the dissolution of the cooperative (Cotterill, 2001; Hendrikse, 2011; Sykuta & Cook, 2001).

However, the question regarding whether the perception of the CEOs aligns with that of the members, which is an important indicator of principal-agent problem, remains unexplored. In addition, factors causing the difference of performance evaluation between CEOs and members are not clear. Some scholars argue the governance such as voting policies and the format of member meeting has an essential role in determining the ability of managers to obtain member feedback (Cook & Burress, 2013). Understanding how CEOs differ from members regarding their evaluations, in which way, and what causes the differences, brings insights that are valuable about how CEOs can best serve the members. Specific research questions are: How CEOs and members evaluate their cooperatives in term of various aspects of performance? Whether the evaluation of CEOs and members on performance differs?

The paper is organized as follows. **Section 2** formulates the motivation for the hypotheses. **Section 3** introduces the methodology of this study. **Section 4** presents the analyses and results. Finally, **Section 5** presents the conclusions.

¹Data source: Authors' summary based on the statistical data published by the State Administration of Industry and Commerce.

2. Hypotheses

Cooperative performance is measured by three indicators: member profitability, social influence in the local community, and overall performance (Franken & Cook, 2015). This section formulates the motivation for the hypotheses regarding overall performance (2.1) and financial and social performance (2.2).

2.1. CEO versus member evaluation of cooperatives

The evaluation by members and the CEO of a cooperative are influenced by the different incentives faced by them and their different cognition regarding the objectives of the cooperative. Many authors argue that there is a divergence of interests between the membership and the management, which results a more complex principal-agent problem than in investor-owned-firms (IOFs hereafter) (Royer, 1999; Sykuta & Chaddad, 1999). First, members in a cooperative are more heterogeneous than shareholders in an IOF in terms of common interests and goals (Staatz, 1987). The management of the cooperative has to take the interests of all the members into account. Second, sometimes a CEO in a cooperative has dual identities, an agent and meanwhile a member (a principal) (Liang, Huang, Lu, & Wang, 2015). A member CEO not only devotes attention to member interests and enterprise value, but also dedicates effort to his individual farm. It gives cooperative managers discretion to operate, and therefore the possibility to pursue their own interest. Moreover, it is unlikely that the incentives of the CEO can be perfectly aligned with the interests of the members by incentive contracts due to the measurement limitations and difficulties in cooperatives (Feng & Hendrikse, 2012). As such, the different interests between the membership and the management cause different opinions of cooperatives' performance.

In Chinese cooperative, CEOs who are core members operate the cooperatives and make a lot of decisions, while common members hardly participate in decision-making. This leads to different behavior between core and common members (Liang & Hendrikse, 2013a). Core members who hold asymmetric control over decision making and benefits naturally have more information than that common members have. They may hide the true profits of cooperatives from common members and reap the profits (Ma & Meng, 2018). This observation aligns with the incentive difference between management and members in the literature. Moreover, the CEOs are elected because of their superior knowledge and experience. Their different cognitive representation causes different perceptions compared to the members. Hypothesis 1 summarizes these observations by stating that there is a difference between the CEOs and members' evaluation regarding the overall performance of Chinese cooperatives.

Hypothesis 1. The CEOs' evaluation of the overall cooperative performance differs from the members' evaluation.

2.2. Financial and social performance of cooperatives

Soboh, Lansink, Giesen, and van Dijk (2009) review the literature regarding the performance of agricultural marketing cooperatives. They argue that theory distinguishes member benefits and firm profitability, and assume multiple objectives. However, the empirical research failed to address the cooperatives' objectives as represented by the theoretical literature, i.e. in practice only firm profitability is used to address the performance of cooperatives. The authors suggest that "a meaningful empirical evaluation of the cooperative's performance should address the dual objective nature of the organization". Franken and Cook (2015) advance the description of cooperative performance from a solely financial perspective to multiple dimensions. They delineate the overall performance of a cooperative into financial performance and social performance. Factor analysis supports the claim that the overall performance is reflected not only by financial performance but also by patron

services. In this paper, we examine the evaluations of the cooperative performance with the perspective developed by Franken and Cook (2015).

We distinguish two components in the evaluation of the performance of a cooperative: financial and social performance. First, cooperatives are formed to advance members' financial interests. Karantininis and Zago (2001) claim that the members of cooperatives focus mainly on the price that the processing firms pay for their products. Maximizing patronage returns is the members' main goal rather than maximizing the profits of the cooperative enterprise (Chaddad, 2001; Franken & Cook, 2015). The capacity of the cooperative to enhance members' financial well-being depends on the cooperative's financial performance. Therefore, whether members are satisfied with their cooperative is directly linked to the cooperative's ability to increase members' incomes. However, the different understanding between the CEOs and the members generates different evaluations regarding the cooperative's financial performance. Specifically, due to the CEOs' superior marketing and management background, they are able to include more and different information in the evaluation of the financial performance than the members (Biek, Wood, & Chaiken, 1996). The members are less informed due to a lack of knowledge. Moreover, CEOs in Chinese cooperatives are high performers, i.e. they are elected to be the CEOs because they are leaders of the community.² The CEOs therefore expect a higher return from the cooperatives compare to common members. However, the pooling payment feature of the cooperatives does not favor CEOs' expectations regarding the financial return.³ Common members benefit equally with the CEOs from the pooling payment scheme. Consequently, compared to the members, the CEOs have a lower evaluation of the financial performance. These observations are summarized in Hypothesis 2.

Hypothesis 2. CEOs' evaluation of the cooperative's financial performance is lower than the members' evaluation.

Second, cooperatives often have social objectives to promote cooperation, rural development, and community services, such as education, training, and information services, collective voice to talk to the government, and members' sense of belonging, and so on. Although nowadays some social elements of cooperatives are becoming less important than the financial functions of cooperatives (Fulton, 1995; Karantininis & Zago, 2001), members' evaluation of their cooperative's social activities and the contribution to public goods may still play a role in some farmers' decisions (Fulton, 1999; Franken and Cook, 2015). If a cooperative could no longer satisfy the members' social needs, it may lead to a lower evaluation of the cooperative by the members. This in turn makes the members identify less with the cooperative and thus negatively influence their participation in collective actions.

The CEOs in Chinese cooperatives have not only large individual firms, but also a substantial network and a high social status (Liang & Hendrikse, 2013a). Their contribution regarding the social aspect of cooperatives is recognized better by themselves because their belief structures leads to a defensive attitude bias regarding social performance, i.e. the CEOs use their knowledge and experience to evaluate an outcome according to their beliefs (Biek et al., 1996). Members enjoy the cooperatives' social services most, and therefore they are more sensitive to the social aspects than the CEOs. When the CEOs evaluate the cooperative's social performance as satisfactory, members may disagree. Nilsson and Hendrikse (2011) present a case of a Swedish agricultural cooperative.

²In Chinese cooperatives, a member CEO is usually the main initiator of a cooperative and also one of the leaders of the village (Liang & Hendrikse, 2013b). He/she becomes the CEO at the foundation of the cooperative, under the support of other initiators, but probably without the voting of all the members. Exceptions are possible. A member joining the cooperative after its founding may also become a core member because of distinct capabilities. This happened in only one farmer cooperative in a survey of 37 Chinese cooperatives (Liang & Hendrikse, 2013b).

³Pooling payment scheme is a characterizing attribute of cooperatives (Menard, 2004). Pooling entails that the allocation of revenues as well as costs that a cooperative pay to its members is (partially) independent of quality and/or quantity delivered by the members.

Although a cost cutting program improves the payment to the members, it cuts some of the connections between the members and the cooperative which are highly valued by the members.⁴ The members are therefore not satisfied. Therefore, we hypothesize that the members have lower evaluations regarding their cooperative's social performance compared to the CEO.

Hypothesis 3. CEOs' evaluation of the cooperative's social performance is higher than the members' evaluation.

3. Methodology

This section presents the methodological aspect of the study in terms of the sample, the data extraction method, the data aggregation, and the variables and measurements.

3.1. Sampling

We collect the data from three provinces, i.e. Zhejiang, Sichuan, and Heilongjiang, based on the location, product varieties, and cooperative development level. First, the three provinces are located in the southeastern, southwestern, and northeastern part of China respectively. Second, among all the cooperatives in China in 2015, 20.67%, 9.55%, and 8.13% of them are in grain, vegetables, and hog industries, in which sectors cooperatives have the largest numbers.⁵ Zhejiang specializes in high value-added products such as vegetables and fruits, Sichuan is the largest province in hog industry, and Heilongjiang is the main production area of grain. Third, the cooperative development levels in all the three provinces are medium to top in terms of both quantity and quality, which is important to control for the heterogeneity of performance evaluation due to the location.

Two to five cooperatives from each county of the three provinces were selected randomly from the list of cooperatives provided by the agricultural departments of the three provinces. Moreover, more than three members of a cooperative were interviewed in order to enhance the representativeness of the performance evaluation by the members. In each cooperative, we chose more than three members randomly to evaluate their cooperative.

3.2. Data collection

Data is collected regarding personal demographic information and performance evaluations of members and CEOs of cooperatives in China. Field work was carried out in the summer of 2011 by selected students from Zhejiang University. The students collected the data when they were back home during the summer holiday. Before their interview work they had training to be objective regarding the data collection. The interviewers are outsiders, i.e. not part of either the cooperatives or the research group. An important reason is to avoid the social desirability bias. In addition, professors of Zhejiang University collected some of the CEO data via the cooperative training meetings. All the questionnaires were filled in by the interviewers in order to raise the quality of the data. Multiple pre-tests were conducted in Lishui and some other cities of Zhejiang province, in April and June, 2011, in order to revise questionnaires to be clear and easy to the respondents. Among all the 266 cooperatives, 543 members and 240 CEOs responded the survey.⁶

⁴This Swedish cooperative carried out the cost cutting program in order to save costs and thereby improve members' financial benefits. However, the program results in the loss of various social dimension services for members, such as the demise of retail outlets and the decrease of silos, which are highly valued by members as local connections to the cooperative.

⁵Data source: Annual Statistical Report on China's Rural Operation Management (2015).

⁶Data is accessible upon request to the authors.

Table 1. Basic information of cooperatives in the sample.

		Frequency
Location	Zhejiang	60
	Sichuan	36
	Heilongjiang	37
	Grain	34
	Vegetable	27
Product variety	Fruit	34
	Chicken	20
	Hog	15
	Others	3

3.3. Data aggregation

We cleaned the data in the following way. We first removed the observations with no response on all the evaluation questions. Then we sorted the data with the same cooperative name. We match one CEO with one member of one cooperative, same CEO with another member of the cooperative. We do this match because we think it is more reasonable to compare members' evaluation of cooperative performance with the CEO's evaluation from the same cooperative, than to compare members' and CEOs' evaluation in general, to control for cooperative level heterogeneity. Finally, an aggregated dataset with 133 cooperatives and 496 matched data remained. In this dataset, a response of the CEO matched with a response of one member. We use this aggregated data for testing the differences between CEOs and members. An overview on the basic information of the 133 cooperatives is presented in Table 1.

3.4. Measurement

Cooperative performance is measured by three indicators, i.e. member profitability, social influence in the local community, and overall performance, representing financial, social, and combination of the two aspects of performances. They are measured by the Likert scale, ranging from 1 (very bad) to 7 (very good) (see Table 2).⁷ The subjective measurement method is used due to a couple of reasons. First, the financial performance is relatively easy to be measured by variables such as profit and ROA, yet the non-economic performance cannot be quantitatively measured. We have to choose the second-best method by measuring performance via subjective evaluation. Although economic performance can be measured by a quantitative indicator, we measure it by the Likert scale (from 1 to 7) in order to distinguish between alternative performances. Second, the financial performance of different products may be not comparable. We therefore use the subjective evaluation of CEOs and members, rather than profits, to measure performance, which to a large extent alleviates the problem.

4. Analysis

This section starts with the descriptive statistics regarding personal information of CEOs and members, and the cooperative performance evaluations by CEOs and members. Next the hypotheses are tested.

Table 2. Measure of the dependent variables.

	Variables	Measurements
Cooperative Performance	Member profitability	Likert scale: 1 (very bad) to 7 (very good)
	Social influence	Likert scale: 1 (very bad) to 7 (very good)
	Overall performance	Likert scale: 1 (very bad) to 7 (very good)

⁷A seven-item offers a higher variance in the measure than five-item Likert scale. Symonds (1924) was the first to suggest that reliability is optimized with seven response categories, Lewis (1993) found that seven-item Likert scale results in stronger correlations with t-test results.

Table 3. Descriptive statistics.

	No. of CEO	Percentage of CEO	No. of members	Percentage of members
Education level:				
-No education	1	0.01	10	0.02
-Primary school	5	0.04	82	0.17
-Junior high school	31	0.24	227	0.46
-Senior high school	62	0.47	131	0.27
-College or university	32	0.24	40	0.08
Total	131	1	490	1
Working experience				
-Having working experience other than farming	118	0.9	303	0.62
-Otherwise	13	0.1	188	0.38
Total	131	1	491	1

Numbers of the observations vary because there is missing data regarding these two variables.

Table 4. Descriptive statistics of performance evaluation by CEOs and members.

Variables	Identity	Mean	Std. Dev.	Min	Max
Member profitability	CEOs	4.84	1.35	1	7
	Members	5.27	1.41	1	7
Social influence	CEOs	6.20	0.96	3	7
	Members	5.95	1.08	2	7
Overall performance	CEOs	5.63	0.89	3	7
	Members	5.84	1.07	1	7

The data show that the average age of the CEOs and members are similar, i.e. 47.92 and 47.90 respectively. Education level and working experience of both CEOs and members are delineated and compared in Table 3. The education of the CEOs is obviously higher than the education of the members. Almost a half of the CEOs have senior high school education and one fourth of the CEOs have college or university education, while around a half of the members have junior high school education and 27% of the members have senior high school education. The working experience of the CEOs and the members seems different as well. Around 90% of the CEOs ever had working experience other than farming before they became CEOs of cooperatives. However, this figure for members is 62%.

The evaluations of the CEOs and members are presented in Table 4. The results show that the mean evaluation of both CEOs and members regarding their cooperatives are quite high (mean > 4). The CEOs and the members are similar in their evaluations that cooperatives are successful in member profitability, social influence and overall performance, i.e. the mean value is higher than 4 on the Linkert scale. However, there are differences between CEOs and members. Social influence receives the highest score, followed by overall performance. Member profitability displays the lowest score. Members evaluate their profitability and overall performance of cooperatives better than CEOs do, whereas CEOs have a higher evaluation of cooperatives' social influence.

We examine whether the evaluation of the cooperative performance evaluation is significantly different between CEOs and members by a paired t-test. The results regarding the variances of the three aspects of the evaluation of CEOs and members on a sample of 496 observations are presented in Tables 5–7. The test results show that the difference in the evaluations of the CEOs and members regarding all three performance aspects is statistically significant.

Results of the paired t-test regarding the difference in member profitability evaluation between CEOs and members are illustrated in Table 5. CEOs score the member profitability of their cooperatives with 4.84 ± 1.35 , while the members score it with 5.27 ± 1.41 . The difference between these two scores is significant, i.e. $\Pr(|T| > |t|) = 0.0000$. Specifically, a statistically significant decrease of .42 (95% CI, $-.56$ to $-.29$, $t(495) = -6.06$, $p < .05$) is found. Hence, the CEOs' evaluation of the cooperative's member profitability is significantly lower than that of members. Hypothesis 2 therefore is supported.

Table 5. Paired t-test regarding CEOs versus members evaluation of member profitability.

Variable	Mean	Std. Err.	Std. Dev.	[95% Conf. interval]	
Memberprofitability_CEO	4.84	.06	1.35	4.72	4.96
Memberprofitability_member	5.27	.06	1.41	5.14	5.39
Memberprofitability_difference	-.42	.07	1.56	-.56	-.29

mean(diff) = mean(Memberprofitability_CEO – Memberprofitability_member) t = -6.06
 Ho: mean(diff) = 0 degrees of freedom = 495
 Ha: mean(diff) < 0 Ha: mean(diff) ≠ 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0040 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 1.000

Table 6. Paired t-test regarding CEOs versus members evaluation of social influence.

Variable	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Socialinfluence_CEO	6.20	.04	.96	6.11	6.28
Socialinfluence_member	5.96	.05	1.08	5.86	6.05
Socialinfluence_difference	.24	.06	1.27	.13	.36

mean(diff) = mean (Socialinfluence_CEO – Socialinfluence_member) t = 4.29
 Ho: mean(diff) = 0 degrees of freedom = 495
 Ha: mean(diff) < 0 Ha: mean(diff) ≠ 0 Ha: mean(diff) > 0
 Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Table 7. Paired t-test regarding CEOs versus members evaluation of overall performance.

Variable	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Overallperformance_CEO	5.63	.04	.89	5.55	5.71
Overallperformance_member	5.84	.05	1.07	5.75	5.94
Overallperformance_difference	-.21	.05	1.22	-.32	-.11

mean(diff) = mean(Overallperformance_CEO – Overallperformance_member) t = -3.91
 Ho: mean(diff) = 0 degrees of freedom = 495
 Ha: mean(diff) < 0 Ha: mean(diff) ≠ 0 Ha: mean(diff) > 0
 Pr(T < t) = 0.0001 Pr(|T| > |t|) = 0.0001 Pr(T > t) = 0.9999

Results of the paired t-test regarding the difference in social influence evaluation between the CEOs and the members are displayed in Table 6. CEOs score the social influence of their cooperatives with 6.20 ± 0.96 , while the members score it with 5.95 ± 1.08 . The difference between these two scores is significant, i.e. $\Pr(|T| > |t|) = 0.0000$. Moreover, a statistically significant increase of .24 (95% CI, .13–.36, $t(495) = 4.29$, $p < .05$) is found. Hence, CEOs' evaluation of the cooperative's social influence is significantly higher than that of members. Hypothesis 3 is therefore supported.

Results of the paired t-test regarding the overall evaluation of performance between CEOs and members are illustrated in Table 7. CEOs score the overall performance of their cooperatives with 5.63 ± 0.89 while the members score it with 5.84 ± 1.07 . The group means are significantly different as the p-value in the $\Pr(|T| > |t|)$ row (under Ha: $\text{diff} \neq 0$, i.e. difference is not equal to 0) is less than 0.05 (i.e., $p = 0.0001$). A statistically significant decrease of .21 (95% CI, -.32 to -.11, $t(495) = -3.91$, $p < 0.05$) is found. Hence, CEOs' evaluation of the cooperative's overall performance is significantly lower than that of members. Hypothesis 1 is therefore supported.

The results show that the evaluation of overall performance from CEOs significant differs from the members, and it is a negative difference. This can be explained by the combination of the financial performance evaluation and social performance evaluation. CEOs evaluate financial performance of the cooperative lower than the members due to that the CEOs expect a higher return and the CEOs benefit less than the members from the pooling scheme. While CEOs evaluate social performance of the cooperatives higher than the members due to that the CEOs contribute to the cooperatives from their networks and social status, and the self-perception bias leads to a higher evaluation by themselves than by the members. Combining the evaluation of financial and social performance, the CEOs evaluate the cooperative

performance overall lower than the members. This may be due to different weights of financial and social elements. From the results, financial element seems to have a higher weight than the social element and the exact weights can be checked in a future study.

5. Conclusions

5.1. Implications for cooperative governance

This study provides evidence of Chinese cooperatives regarding the different evaluations between CEOs and members. Hypotheses regarding the differences between CEOs' and members' evaluation of their cooperative performance are established and tested. The results show that although both CEOs and members provide a high evaluation of their cooperatives' performance, their degree of satisfaction differs significantly. First, CEOs' evaluation is significantly different from the members' evaluation of overall performance which is a combination of both financial and social performances, and the difference is negative. Second, CEOs' evaluation is lower than the members' evaluation regarding financial performance of their cooperatives which is indicated by member profitability. Lastly, CEOs' evaluation is higher than the members' evaluation regarding social performance which is indicated by social influence of cooperatives.

A couple of policy recommendations are drawn out from the empirical results. First, CEOs need to balance between the economic goals and the non-economic pursuit of members. For example, if the cooperative recognizes that the CEO has higher expectations regarding financial performance rather than the social performance, social performance of the cooperative can be added and higher weighed as one task of the CEO's responsibilities, and as one measurement of CEO's performance.

Second, trainings regarding the governance characteristics of cooperatives should be provided to CEOs. A CEO has to have an accurate understanding of organization characteristics and members' interests in order to operate the cooperative enterprise well. Therefore, knowledge of members' evaluation of cooperatives, as well as how members' evaluation differs from that of their own, can help cooperative CEOs to formulate strategies that best serve the membership and keep the cooperative successful. It is beneficial to increase the communication between the CEO and members, which narrows the gap between the CEO's and members' evaluation of their cooperative. Moreover, the organizing of general meetings is an effective way to narrow the gap between CEOs' and members' perceptions.

5.2. Future research

This study has various limitations. First, the data is collected in Chinese cooperatives in 2011. A future study could have a sample from the Western world, to test if different cooperative structures lead to different results. Also, a test based on more recent data can be conducted to see whether the difference in CEOs and members' evaluation on performance changes along with the life cycle of cooperatives. Second, this study applies the measurements of the literature. However, confirmatory factor analysis is lacking. In a future study, a confirmatory factor analysis should be considered to avoid validity and reliability problems of the measurements. Third, omitted variables and common method bias are not tested in this study. Also, one of the weaknesses is the measurement of social performance. A more specific conceptualization of social performance is needed. A future study can test other variables and to examine if there is a bias in the current model. For example, social activities, social services can be examined and added to the social performance of cooperatives, to develop the measure of cooperatives' social performance. Lastly, the exploration of associated factors is only a start for finding the relevant influential factors that may have an impact on the evaluations. Future studies need to be designed to further investigate this issue.

Declarations of interest

None.

Acknowledgements

This research was supported by the Zhejiang Philosophy and Social Science (Grant No. 17NDJC193YB), National Natural Science Foundation of China (Grant No. 71573227), and National Planning Office of Philosophy and Social Science (Grant No. 14CJY042).

References

- Arcas-Lario, N., Martín-Ugedo, J. F., & Mínguez-Vera, A. (2014). Farmers' satisfaction with fresh fruit and vegetable marketing Spanish cooperatives: An explanation from agency theory. *International Food and Agribusiness Management Review*, 17(1), 127–146.
- Bhuyan, S. (2007). The people factor in cooperatives: An analysis of members' attitudes and behavior. *Canadian Journal of Agricultural Economics*, 55(3), 275–298.
- Biek, M., Wood, W., & Chaiken, S. (1996). Working knowledge, cognitive processing, and attitudes: On the determinants of bias. *Personality and Social Psychology Bulletin*, 22(6), 547–556.
- Bijman, J., G.W.J.Hendrikse, & Van Oijen, A. (2013). Accommodating two worlds in one organisation: Changing board models in agricultural cooperatives. *Managerial and Decision Economics*, 34, 204–217.
- Birchall, J., & Simmons, R. (2004). What motivates members to participate in cooperative and mutual businesses?. *Annals of Public and Cooperative Economics*, 75(3), 465–495.
- Chaddad, F. R. (2001). *Measuring the economic performance of cooperatives: An evaluative survey of the literature. Working Paper AEWP 2001-1*. Department of Agricultural Economics, University of Missouri.
- Chaddad, F. R., & Cook, M. L. (2004). Understanding new cooperative models: An ownership-control rights typology. *Review of Agricultural Economics*, 26(3), 348–360.
- Cook, M. L. (1994). The role of management behavior in agricultural cooperatives. *Journal of Agricultural Cooperation*, 9, 42–58.
- Cook, M. L., & Burrell, M. J. (2013). The impact of CEO tenure on cooperative governance. *Managerial and Decision Economics*, 34, 218–229.
- Cook, M. L., & Iliopoulos, C. (2016). Generic solutions to coordination and organizational costs: Informing cooperative longevity. *Journal on Chain and Network Science*, 16(1), 19–27.
- Cotterill, R. W. (2001). Cooperative and membership commitment: Discussion. *American Journal of Agricultural Economics*, 83(5), 1280–1281.
- Feng, L., & G.W.J.Hendrikse (2012). Chain interdependencies, measurement problems, and efficient governance structure: Cooperatives versus publicly listed firms. *European Review of Agricultural Economics*, 39(2), 241–255.
- Franken, J., & Cook, M. Informing measurement of cooperative performance. In J. Windsperger, G. Cliquet, T. Ehrmann, & G. Hendrikse (2015). *Interfirm networks* (pp. 209–226). Switzerland: Springer International Publishing.
- Fulton, M. (1995). The future of Canadian agricultural cooperatives: A property rights approach. *American Journal of Agricultural Economics*, 77(5), 1144–1152.
- Fulton, M. (1999). Cooperatives and member commitment. *The Finnish Journal of Business Economics*, 4, 418–437.
- Fulton, J. R., & Adamowicz, W. L. (1993). Factors that influence the commitment of members to their cooperative organization. *Journal of Agricultural Cooperation*, 8, 39–53.
- Grashuis, J., & Su, Y. (2018). A review of the empirical literature on farmer cooperatives: Performance, ownership and governance, finance, and member attitude. *Annals of Public and Cooperative Economics*, in print.
- G.W.J.Hendrikse (2011). Pooling, access, and countervailing power in channel governance. *Management Science*, 57(9), 1692–1702.
- Hind, A. M. (1999). Co-operative life cycle and goals. *Journal of Agricultural Economics*, 50(3), 536–548.
- Iliopoulos, C., & Valentinov, V. (2018). Member heterogeneity in agricultural cooperatives: A systems-theoretic perspective. *Sustainability*, 10(4), 1271
- Karantininis, K., & Zago, A. (2001). Endogenous membership in mixed duopsonies. *American Journal of Agricultural Economics*, 83(5), 1266–1272.
- Liang, Q., & G.W.J.Hendrikse (2013). Cooperative CEO identity and efficient governance: Member or outside CEO?. *Agribusiness*, 29(1), 23–38.
- Liang, Q., & G.W.J.Hendrikse (2013). Core and common members in the genesis of farmer cooperatives in China. *Managerial and Decision Economics*, 34(3–5), 244–257.
- Liang, Q., Huang, Z., Lu, H., & Wang, X. (2015). Social capital, member participation, and cooperative performance: Evidence from China's Zhejiang. *International Food and Agribusiness Management Review*, 18(1), 49–78.
- Lewis, G. (1993). *The scale invariant generator technique and scaling anisotropy in geophysics (MS thesis)*. Canada: Department of Physics, McGill University.
- Ma, Y., & Meng, C. (2018). The dual-agency relations in farmer cooperatives in China: The problem and improvement ideas. *Agricultural Economic Issue*, 5, 55–60.

- Marcos-Matás, G., Hernández-Espallardo, M., & Arcas-Lario, N. (2013). Transaction costs in agricultural marketing cooperatives: effects on market performance. *Outlook on Agriculture*, 42(2), 117–124.
- Meador, J. (2016). Building sustainable smallholder cooperatives in emerging market. *Sustainability*, 8(7), 15
- Menard, C. (2004). The economics of hybrid organizations. *Journal of Institutional Theory Economics*, 160(3), 345–376.
- Misra, S. K., Carley, D. H., & Fletcher, S. M. (1993). Dairy farmers' evaluation of dairy cooperatives. *Agribusiness*, 9(4), 351–361.
- Mojo, D., Fischer, C., & Degefa, T. (2017). The determinants and economic impacts of membership in coffee farmer cooperatives: Recent evidence from rural Ethiopia. *Journal of Rural Studies*, 50, 84–94.
- Nilsson, J., & G.W.J.Hendrikse (2011). Gemeinschaft and Gesellschaft in cooperatives. In M. Tuunanen, J. Windsperger, G. Cliquet, & G. Hendrikse (Eds.), *New developments in the theory of networks* (pp. 339–352). Heidelberg: Physica-Verlag HD.
- Nilsson, J., G.L.H.Svendsen, & Svendsen, G. T. (2012). Are large and complex agricultural cooperatives losing their social capital?. *Agribusiness*, 28(2), 187–204.
- Österberg, P., & Nilsson, J. (2009). Members' perception of their participation in the governance of cooperatives: The key to trust and commitment in agricultural cooperatives. *Agribusiness*, 25(2), 181–197.
- Royer, J. S. (1999). Co-operative organisational strategies: A neo-institutional digest. *Journal of Cooperatives*, 14, 44–67.
- R.A.M.E.Soboh, Lansink, A. O., Giesen, G., & van Dijk, G. (2009). Performance measurement of the agricultural marketing cooperatives: The gap between theory and practice. *Review of Agricultural Economics*, 31(3), 446–469.
- Staatz, J. M. The structural characteristics of farmer cooperatives and their behavioral consequences (1987). In J. S. Royer (Ed.), *Cooperative theory: New approaches* (pp. 87–107). Washington, DC: U.S. Department of Agriculture. (ACS Service Report No. 18).
- Sykuta, M. E., & Chaddad, F. R. (1999). Putting theories of the firm in their place: A supplemental digest of the new institutional economics. *Journal of Cooperatives*, 14(1), 68–76.
- Sykuta, M., & Cook, M. (2001). Cooperative and membership commitment: A new institutional economics approach to contracts and cooperatives. *American Journal of Agricultural Economics*, 83, 1273–1279.
- Symonds, P. M. (1924). On the loss of reliability in ratings due to coarseness of the scale. *Journal of Experimental Psychology*, 7(7), 456–461.