

BOARD CAPITAL, ORGANIZATIONAL CAPITAL AND ORGANIZATIONAL PERFORMANCE OF AGRICULTURAL AND NON-AGRICULTURAL CO-OPERATIVES IN THAILAND

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Abstract

Co-operatives in Thailand have played an important role in promoting self-reliance and financial advantages for their members. However, these co-operatives have also encountered their own technical and financial performance issues. This study asks whether a co-operative's board capital (i.e., human capital and social capital) can positively influence that co-operative's organizational performance via the mediating role of organizational capital (i.e., structural capital and financial capital). Data were collected from 133 co-operatives in several regions in Thailand, with the population sample comprising 133 managers and 529 employees of Thai co-operative businesses. Structural equation modeling (SEM) analysis of aggregated employee data ($n = 529$ [board capital]) and organizational-level data ($n = 133$ [organizational capital and organizational performance]) provided full support for the proposed hypotheses ($\chi^2/df = 1.827$, RMSEA = .079, CFI = 0.911, TLI = 0.901, SRMR = 0.053). In particular, the board capital of the co-operatives was found to positively influence organizational performance via the mediating role of organizational capital. Furthermore, the results showed that agricultural co-operatives were rated significantly lower in terms of their board capital and organizational performance in comparison to non-agricultural co-operatives. These findings highlight the importance of different types of capital and the discrepancies that exist between agricultural and non-agricultural co-operatives, which deserves further attention from researchers.

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Keywords: Co-operatives; Board capital; Organizational capital; Organizational Performance; Resource Dependence Theory.

1. INTRODUCTION

Co-operatives have long played an active role in promoting economic and social health for their members. In particular, co-operatives provide their members with access to financial capital and markets for their products and produce while helping alleviate poverty issues based on principles of 'self-reliance' and 'mutual help' (Kaplan & Mc Cay, 2004). Unfortunately, Thai co-operatives are not without their unique problems. According to the Co-operatives Promotion Department of Thailand (2020), the rate of co-operative termination in Thailand is high and occurring at an increasing rate, whereby, for every newly registered co-operative, 2.2 co-operatives are liquidated. Laidlaw (1978) pointed to at least six potential obstacles to the development of co-operatives: 1) a lack of tangible support; 2) a lack of member collaboration and involvement; 3) members' resistance or opposition; 4) legal and administrative challenges; 5) a lack of funding sources; and 6) a lack of sacrifice and dedication from personnel. To date, there is a dearth of research, that seeks to understand the factors that affect co-operatives' performance, especially in the Thai context.

This research draws attention to the role of board committee members (hereafter referred to as board

members) in the success of co-operatives in Thailand. According to the extant literature, boards serve as an important catalyst for the achievement of co-operatives' organizational performance goals (Gertler, 2001). Boards are essential because they are instrumental in determining the strategic choices of their business operations and transactions, i.e., where to invest their capital and whether to provide loans to the borrowers. Past research has examined the influence of various characteristics of corporate boards; for example, board size has been shown to be positively and significantly related with organizational performance (Afzalur, Anura, Sudhir, & Kathy, 2010; Arora & Sharma, 2016; Augustine, 2012; Haniffa & Hudaib, 2006; Kiel & Nicholson, 2003; Muhammad, Rehman, & Waqas, 2016). The main reasoning is that having many executives with diverse expertise can lead to more knowledge sharing and integration of know-how, in turn providing a competitive advantage over other organizations. Other studies have shown that board gender compositions, i.e. the proportion of female board members, can positively affect firm performance because women's innate qualities can have a beneficial effect on the organization's performance as women are able to understand stakeholders' needs better (Bonn, Yoshikawa, & Phan, 2004;

Peni & Vahamaa, 2010).

This research differs from past research by focusing on the role of the co-operatives' board capital (CBC). In particular, the conceptualization of CBC presented in this paper, is based on two specific dimensions of capital, namely, human capital and social capital. Board human capital refers to the extent to which board members are competent and proficient in their working roles in terms of knowledge, competence, education, skills, and professional experience (Certo, 2003; Dalziel, Gentry, & Bowerman, 2011; Devos, Prevost, & Puthenpurackal, 2009; Hillman & Dalziel, 2003; Hillman et al., 2011; Jensen & Zajac, 2004; Stuart & Yim, 2010). Meanwhile, board social capital refers to the extent to which the co-operatives' board members are able to establish and foster positive relationships, connections and networking with important external stakeholders (e.g., other co-operatives, banking institutions and government agencies) (Flanigan & Sutherland, 2016; Kale, Singh, & Perlmutter, 2000). Indeed, the knowledge and skills of the co-operative board members, and the solid contacts with external organizations that they help to form, can play an important role in generating credibility and trust with external stakeholders, while also granting co-operatives greater access to necessary financing, e.g., deposit funds or loans from other co-operatives or mainstream financial organizations (De Clercq, Fried, Lehtonen, & Sapienza, 2006; Dimov

& Shepherd, 2005; Pratch, 2005). This is in line with the Resource Dependence Theory (RDT) (Pfeffer & Salancik, 1978), which postulates that an organization's ability to acquire and maintain external resources is critical to its existence and survival.

This research also draws from RDT, in proposing that co-operatives' organizational capital (COC) will mediate the relationship between CBC and the co-operatives' performance. In particular, the conceptualization of COC is based on two specific dimensions, namely, structural capital and financial capital. Structural capital refers to the extent to which co-operatives are equipped with proper operating procedures, infrastructure, databases, information technology and internal management systems (Ray, Xue, & Barney, 2013; Youndt, Subramaniam, & Snell, 2004). Meanwhile, financial capital refers to the extent to which co-operatives are able to obtain financial resources from external sources and to sustain their financial liquidity (Mamouni Limnios, Joannides, Watson, Mazzarol, & Soutar 2016). To date, no previous research has attempted to understand the role of boards, which is an important omission from the corporate governance literature.

Finally, this research aims to explore whether the two co-operative types of agricultural and non-agricultural co-operatives may differ in their mean levels of board and organizational capital as well as organizational performance.

According to the Co-operative Act, 1999, there are 7 types of co-operatives in Thailand including (1) agricultural co-operatives, (2) fishery co-operatives, (3) land settlement co-operatives, (4) consumer co-operatives, (5) service co-operatives, (6) thrift and credit co-operatives, and (7) credit union co-operatives. The first three are characterized as agricultural co-operatives, which have played a vital role in the development of the Thai agricultural industry, including crop production, fisheries, and product processing. The remaining types of cooperatives constitute the non-agricultural co-operatives, which have continued to support the growth of non-agricultural businesses by taking care of their financial deposits and providing them with much-needed loans. Indeed, these small businesses are the backbone of the Thai economy, which depends significantly on the continued success of Thai co-operatives. While both types of co-operatives have been instrumental in the development of the Thai economy, it is important to note that they may differ in terms of their internal capital and performance. For example, a recent report by the Thai Cooperative Auditing Department (2018) showed that non-agricultural co-operatives generated 51.56% more profit than agricultural co-operatives. However, research has yet to examine whether this is due to differences in the internal capital of these different types of cooperatives. The knowledge from this present research can inform government agencies about whether

specific types of co-operatives will require additional external assistance (in the form of training, education, consulting services, etc.) to overcome their organizational and management problems.

2. LITERATURE REVIEW

2.1 Theoretical Foundation: Resource Dependency Theory (RDT)

Resource Dependency Theory (RDT) is based on the premise that organizations rely on external resources to accomplish their objectives (Pfeffer & Salancik, 1978). Internal resources such as effective management systems are important for carrying out an organization's operations; there is also a need to rely on external resources, for example, via partnerships, mergers and acquisitions (M&A), cross-shares, and executive committee crossovers (Aldrich & Pfeffer, 1976; Thompson, 1967). According to this perspective, corporate board members serve as an important link between their organizations and the external environment, which may unfortunately generate uncertainty and external dependencies. In order for the business to survive, they must learn to cope with such uncertainty and resource-dependencies, which can ultimately lead to an increased likelihood of survival (Pfeffer & Salancik, 1978; Thompson, 1967). However, board members are not only instrumental in reducing uncertainty and dependencies on the external

environments, they also play an important role in acquiring critical resources, such as information, skills, and access to key stakeholders and support the organization's legitimacy, which can result in more investment from external organizations. Overall, RDT helps to shed light on the roles of co-operative boards in managing the co-operatives' activities, which are dependent upon a variety of internal and external resources. The section below provides a discussion of the role of a co-operative's board capital (CBC) in terms of its influence on the co-operative's organizational capital (COC) and organizational performance.

2.2 Development of the Research Framework and Hypotheses

The Concept of Capital

The conceptualization of capital in this research is based on the concept of intellectual capital (IC) in the management literature. IC generally refers to the sum of all knowledge that organizations can draw upon to build a competitive advantage (Nahapiet & Ghoshal, 1998; Youndt et al., 2004). At least three prominent aspects of IC have been identified in previous research, namely, (1) human capital, (2) organizational capital (or structural) capital, and (3) social (or relational) capital. Human capital refers to the knowledge, skills, and abilities that reside within individuals (Schultz, 1961), while organizational capital generally refers to the institutionalized knowledge and codified experience that are

manifested in the form of databases, patents, manuals, structures, or systems and processes (Youndt et al., 2004; Stewart, 1997). Finally, social capital generally refers to the knowledge that occurs as a result of the interactions among individuals and their networks of interrelationships (Nahapiet & Ghoshal, 1998). Organizational capital and social capital have also been categorized as structural capital, a core dimension of IC (Edvinsson & Sullivan, 1996). Taken together, different aspects of IC form knowledge-based resources and assets that provide organizations with a competitive advantage, which differentiates them from the competitors (Edvinsson & Sullivan, 1996).

As will be discussed below, we draw upon these concepts to inform our research. In particular, we utilize the insights from the human capital and social capital literature to conceptualize CBC, while structural capital is conceptualized as an important aspect of COC. Financial capital is also included as another important component of COC. According to Edvinsson and Sullivan (1996), financial capital and the range of assets that are valued on the company's balance sheet could be viewed as tangible elements of organizational capital.

Co-operatives' Board Capital (CBC) and Performance

As discussed briefly, in the context of this research, CBC is divided into two specific categories,

namely, human capital and social capital. Board human capital involves the knowledge and skills that board members have developed through their experience and education, which may include general know-how, management know-how and industry-specific-know-how (Certo, 2003; Hillman & Dalziel, 2003; Dalziel et al., 2011; Jensen & Zajac, 2004; Devos et al., 2009; Hillman et al., 2011; Stuart & Yim, 2010). Meanwhile, board social capital is concerned with the significance of relationships and networking capabilities that provide an important basis through which they can access vital resources in their external environment (Hillman & Dalziel, 2003).

Apart from providing control and monitoring over the management of co-operatives, knowledgeable board members also play a crucial role in providing useful advice and counseling to managers and staff regarding how to run co-operatives more effectively (cf. Chen, 2008; Hillman & Dalziel, 2003; Boyd, Haynes, Hitt, Bergh & Ketchen, 2012). In fact, boards have been considered as 'the manager's sponsor' (Carpenter & Westphal, 2001). In this respect, previous research has provided empirical evidence that supports the above arguments. For example, Golden and Zajac (2001) reported that different occupational roles among board members were associated with varied director experiences and expertise, which in turn are positively associated with organizational strategic change.

Khanna, Jones and Boivie (2014) also found that boards with high levels of education are associated with higher firm performance. Other studies have also employed board members' educational levels (Dalziel et al., 2011) and industry-specific experience (Kor & Misangyi, 2008) to predict strategic actions. Furthermore, it has been shown that industry-specific knowledge and abilities can assist board members in evaluating prospective investments and growth paths as well as managing competitive dynamics (Kor & Misangyi, 2008). In fact, it has been indicated that board human capital should be of great concern to shareholders (e.g., members) because poor decisions that originate from the limited abilities or skills of board members can adversely affect their financial health and stability (Reeb & Zhao, 2013).

We further propose that board members' social capital can provide co-operatives with an important edge in obtaining external resources. In particular, it is here argued that social capital can lead to a reduction in cooperatives' transaction costs, which may result from external dependencies (Hillman & Dalziel, 2003). For example, board members who have personal connections with other co-operatives will have a better understanding of how to obtain external funding while also enhancing their co-operative's credibility. Past research has shown that board member relationships with external parties can play a key role in securing support from powerful agents or external stakeholders who are

important to an organization's success (Hillman, Cannella, & Paetzold, 2000; Kiel & Nicholson, 2006).

A recent study by Yousaf, Ullah, Wang, Junyan and Rehman (2021) showed that board members' capital (measured in terms of human capital and social capital) led to an increase in the financial performance of firms in the hotel, air transportation/travel, and catering industries in China. Despite this notable finding, it is unfortunate that no study to date has examined the virtuous impact of board capital in the context of co-operatives. Based on the above arguments and empirical evidence, it is hypothesized that:

Hypothesis 1. Co-operative board capital (CBC) has a positive relationship with organizational performance.

The Mediating Role of Co-operatives' Organizational Capital (COC)

The discussion of CBC above would be incomplete without also considering its impact on important organizational factors. To illustrate this point, although skilled board members may come up with business strategies for their co-operatives, without proper supporting organizational resources (e.g., infrastructure and financing), it would be virtually impossible for them to move ahead with their strategic plans.

It is hereby argued that two important aspects of organizational capital—structural capital and financial capital—will mediate the link between CBC and the co-operatives' performance. Structural

capital refers to both tangible and intangible resources that co-operatives develop (Malhotra, 2003; Ray et al., 2013; Youndt et al., 2004), which may include new infrastructure that is up-to-date, the availability of proper accounting systems, clear operating procedures (e.g., flow charts), and effective internal management systems. It is proposed that a co-operative board with high human capital is likely to be knowledgeable about, and exposed to, the best practices, regarding effective co-operative operations, such that their knowledge, skills, and experience, may ultimately affect their co-operative's structural capital.

Financial capital, a more visible aspect of organizational capital, refers specifically to the financial health of co-operatives, resulting from at least three main sources: 1) deposits from members, 2) retained surpluses and 3) external loans. As discussed earlier, RDT indicates that boards with high social capital are adept at garnering external support for their organizations. In the context of co-operatives, it is proposed that co-operative boards that have strong relationships with other co-operatives and banking institutions will gain earlier and faster access to essential resources, and also more timely information, which can help with decision-making processes that result in a superior financial outcome (Carpenter & Westphal, 2001; Kor & Sundaramurthy, 2009).

Past research has shown that organizational capital can positively affect organizational performance.

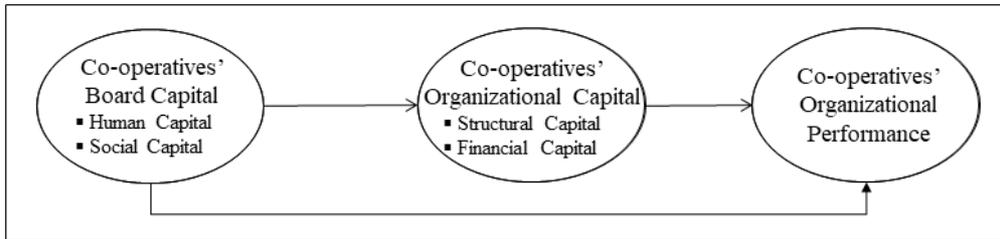


Figure 1: Conceptual model

For example, in a longitudinal study of 1,053 new start-ups, Cooper, Gimeno-Gascon and Woo (1994) found that the amount of initial financial capital contributed positively to the survival and growth of the firms. In another study of 500 manufacturers in Taiwan, Tseng and Goo (2005) showed that organizational capital can affect firm value via an increase in organizational innovation. Furthermore, in a more recent study of 351 Brazilian and 135 Portuguese micro, small and medium enterprises, Oliveira, Curado, Balle and Kianto (2020) showed that organizational capital plays an important role in fostering absorptive capacity and innovation, which in turn leads to higher levels of organizational performance. Based on the above arguments and empirical evidence, it is hypothesized that:

Hypothesis 2. The positive relationship between co-operative board capital (CBC) and organizational performance is mediated by the co-operatives' organizational capital (COC).

Based on the above hypotheses, the proposed theoretical model is summarized and depicted in Figure 1.

3. METHODOLOGY DISCUSSION

3.1 Sample Characteristics and Data Collection

The cooperatives in Thailand that are currently in operation are comprised of 3,345 agricultural co-operatives (51.80%) and 3,112 non-agricultural co-operatives (48.20%) (Co-operatives Promotion Department of Thailand, 2020). To evaluate the study hypotheses, data was collected from 300 co-operatives across Thailand, including those in the agricultural (n = 150) and non-agricultural (n = 150) sectors, based on a proportional stratification sampling frame. In particular, the data were gathered from two different sources, namely, the managers and four employees from each co-operative. The purpose of using two sources of data is to alleviate concerns regarding possible common method variance (CMV) that would have occurred from using a single source of data and a single data collection method (Podsakoff, Mackenzie, Jeong-Yeon, & Podsakoff, 2003).

Each manager was asked to evaluate their co-operative's organizational capital and

performance, while employees were asked to evaluate their co-operative's board capital. The surveys were returned from 133 co-operatives after two months (totaling 133 managers and 529 employees), resulting in a response rate of 44.33 % and 44.08 %, respectively. Agricultural co-operatives accounted for 50.40% of all the co-operatives in this sample, which is consistent with the population statistics discussed above. The majority of these co-operatives (73.68 %) had more than 60 million-baht worth of financial capital. Meanwhile, 33.08% of them had 11 to 20 workers, while 36.84 % of them had 2,000 to 3,700 members.

3.2 Measurement

Unless stated otherwise, all measurements were based on a Likert scale (where 1 = *strongly disagree* and 5 = *strongly agree*). Board capital was measured using 10 items that were adapted from previous studies (e.g., Certo, 2003; Hillman & Dalziel, 2003; Dalziel et al., 2011; Jensen & Zajac, 2004; Devos et al., 2009; Hillman et al., 2011; Ruigrok, Peck, Tacheva, Greve & Hu 2006; Stuart & Yim, 2010); these were comprised of two specific dimensions: human capital and social capital. Ten items were also developed for measuring organizational capital; these were also comprised of two specific dimensions, namely, structural capital and financial capital (e.g., Bontis, Chua, & Richardson, 2000; Malone, 1997; Chang, Chen, & Lai, 2008; Riahi-Belkaoui, 2003). Co-

operatives' performance was measured using 7 items developed by Delaney and Huselid (1996). The scale used for this measure was based on a comparison with other co-operatives (1 = *lowest 20%* and 5 = *highest 20%*). All measurement items are shown in Table 3.

Data Aggregation

Since the study variables are intended to be analyzed at the organizational level of analysis, it is important to aggregate the individual-level data assessed by the employees ($n = 529$) bringing it up to the organizational level ($n = 133$). This applies to co-operative board capital (CBC). In contrast, co-operatives' organizational capital and performance were assessed by the managers; thus, there is no need to aggregate these variables to the organizational level. In particular, three indicators were used to justify data aggregation, namely, the Intraclass Correlation Coefficient (ICC) and the Interrater Agreement (IRA) index ($r_{wg}(j)$) (LeBreton & Senter, 2008). As can be seen in Table 1, the results showed significant F -statistics (One-Way Analysis of Variance: ANOVA) for both board human capital and board social capital ($F = 2.19, p < .001$; $F = 2.52, p < .001$, respectively), indicating that there was significant variation across the co-operatives. Furthermore, the results showed that the ICC (1) values for both board human capital and board social capital were 0.23 and 0.28, respectively, indicating that more than 20 percent of the variance

in these variables could be attributed to the differences between the co-operatives. The ICC (2) for both human capital and social capital were 0.54 and 0.60, respectively, indicating sufficient reliability in the variations across the co-operatives. Finally, the r_{wg} (j) values for both human capital and social capital were 0.90 and 0.93, respectively, indicating strong agreement among employees in the same co-operatives.

Analytic Procedures

The main analyses that followed were conducted using Structural Equation Modeling (SEM) in Mplus Version 7.4 using MLR procedure (Muthén, & Muthén, 2012). This statistical analysis is superior to other conventional regression methods, as, for example, SEM takes into account measurement errors and examines multiple paths and correlations between variables simultaneously. Conducting an SEM involves two

specific procedures: (1) establishing a measurement model (i.e., confirmatory factor analysis [CFA]) and (2) testing a structural model. Indirect effects were obtained using 10,000 bootstrapped samples (Kelley, 2016). Indirect effects can be considered significant if the obtained confidence intervals (CIs) do not contain zero.

4. RESULTS

As can be seen from Table 2, the correlation coefficients of the study variables are in the predicted direction and below 0.80 ($r < 0.80$) suggesting that multicollinearity was not a significant concern. Additionally, the square root of the mean-variance of the extracted element for each of the study variables was higher than the relative value of the correlations of the other elements (Fornell & Larcker, 1981), providing evidence of discriminant validity.

Table 1: Aggregation Statistics

Variable	<i>F</i>	ICC(1)	ICC(2)	r_{wg}
Human capital	2.19, $p < .001$	0.23	0.54	0.90
Social capital	2.52, $p < .001$	0.28	0.60	0.93

Table 2: Descriptive Statistics of the Correlation Coefficients, Reliability Estimates, and the Square root of AVE.

VARIABLE	<i>M</i>	<i>SD</i>	1	2	3
1. Co-operatives' board capital (CBC)	3.80	0.52	(0.92)		
2. Co-operatives' organizational capital (COC)	4.16	0.56	.74**	(0.89)	
3. Co-operatives' Organizational Performance	3.82	0.60	.51**	.47**	(0.72)

Notes. *M* = mean; *SD* = standard deviation. ** $p < 0.01$, *** $p < 0.001$; The number in parentheses is the square root of the AVE (\sqrt{AVE}).

Table 3: Confirmatory Factor Analysis Results

Variables	Items	Factor loading
Co-operatives' Boards' Capital: AVE=.88; CR=.94		
Human capital	AVE=.83; CR=.96; α =.96	
	1. This co-operative's board has excellent management skills.	0.91
	2. This co-operative's board is inventive and creative.	0.91
	3. This co-operative's board is continually learning new things.	0.92
	4. This co-operative's board is resilient in the face of adversity.	0.90
	5. This co-operative's board is capable of promptly dealing with crisis situations.	0.90
Social capital	AVE=.69; CR=.92; α =.92	
	1. This co-operative's board has solid relationships with the cooperative's members.	0.82
	2. This co-operative's board is focused on forming relationships with other co-operatives.	0.87
	3. This co-operative's board creates new ventures via cooperative networks.	0.84
	4. This co-operative's board has informal contacts with a number of financial institutions.	0.82
	5. This co-operative's board has informal relationships with government entities.	0.82
Co-operatives' Organizational Capital: AVE=.75; CR=.86		
Financial capital	AVE=.57; CR=.87; α =.86	
	1. This co-operative has enough cash for their operations.	0.70
	2. This co-operative has adequate asset reserves.	0.62
	3. This co-operative has enough cash on hand to meet the demands of its members.	0.79
	4. This co-operative provides liquidity for financial institutions' debt settlement whenever problems emerge.	0.84
	5. This co-operative is able to manage its operating expenses.	0.79
Structural capital	AVE=.69; CR=.92; α =.92	
	1. This co-operative has a cutting-edge and fast-paced operating system that encourages fresh ideas.	0.86
	2. This co-operative has a well-functioning information system that is appropriate for co-operative activities.	0.92
	3. This co-operative includes tools and equipment that are ready to assist employees with their tasks.	0.81
	4. This co-operative has important and updated data and information in the organization's information system.	0.78
	5. This co-operative has a management structure that supports change.	0.78

Table 3: Confirmatory Factor Analysis Results (Continued)

Variables	Items	Factor loading
Co-operatives' Organizational Performance: AVE=.56; CR=.90; α =.90		
	In comparison to other co-operatives, how would you rate the following performance indicators of your co-operative?	
	1. Product and service quality.	0.76
	2. Product and service development.	0.79
	3. The ability to recruit and retain talented employees.	0.73
	4. The capacity to keep top personnel in the co-operative.	0.74
	5. Cooperative members' satisfaction.	0.79
	6. Relationship between employees in the organization (unity).	0.73
	7. Employees and management have a good relationship.	0.69

Notes. CR: composite reliability; AVE: average variance extracted; α = Cronbach's alpha; all factor loadings are significant at $p < .001$ level.

Table 4: Mean Differences

Variables	Agricultural co-operatives (N=67)		Non-agricultural co-operatives (N=66)		t-test
	M	SD	M	SD	
Predictor (CBC)					
Human capital	3.65	0.44	3.82	0.42	-1.62
Social capital	3.88	0.49	3.98	0.41	-2.16*
Mediators (COC)					
Financial capital	4.14	0.68	4.27	0.63	-1.06
Structural capital	4.16	0.58	4.27	0.57	-1.09
Outcome variable					
Organizational performance	3.70	0.59	3.94	0.59	-2.34*

Notes. N=133. M = mean; SD = standard deviation. * $p < .05$.

Furthermore, as can be seen from Table 3, confirmatory factor analyses (CFAs) showed that the proposed theoretical model fit the data well, $\chi^2 = 579.194$, $p < 0.000$, comparative fit index (CFI) = 0.91, Tucker-Lewis index (TLI) = 0.90, root mean square error of approximation (RMSEA) = 0.079, and standardized root mean squared residual (SRMR) = 0.053

(Hu & Bentler, 1999). Moreover, each item loaded significantly on its respective construct ($p < 0.001$). The factor loadings were all above 0.60. It was also found that the values of the average variance extracted (AVE) ranged from 0.52 to 0.88, all exceeding the recommended value of 0.50 (Fornell & Larcker, 1981)

Furthermore, as discussed in the

introduction, there was an exploration into whether there were significant mean differences in the main study variables between agricultural and non-agricultural co-operatives. As can be seen from Table 4, the results showed that, in comparison to non-agricultural co-operatives, agricultural co-operatives were rated significantly lower in terms of their boards' social capital ($t = -2.16, p < .05$) and organizational performance ($t = -2.34, p < .05$), while the differences among other variables were not statistically significant (although the means of the agricultural co-operatives were somewhat lower than those of the non-agricultural co-operatives).

The Structural Equation Model (SEM)

As shown in Table 5 and Figure 2, it was found that the co-operatives' board capital (CBC) had a direct influence on the co-operatives' organizational capital (COC), $\beta = 0.338, p < 0.001$, while COC had a direct influence on the co-operatives' organizational performance (COP), $\beta = 0.591, p < 0.001$. Furthermore, CBC still maintained a direct influence on COP, $\beta = 0.194, p < 0.05$. Hypothesis 1 was thus supported.

In terms of the indirect effect, bootstrapping was used to derive the results. As shown in Table 6, CBC was found to significantly influence COP via COC, (.245; 95% CI [0.108, 0.382]), supporting Hypothesis 2.

Table 5: Path Coefficients of the Structural Equation Model.

Constructs	Constructs	Estimate	SE	<i>t</i>	p-value
CBC	-> COC	0.338	0.092	3.683	0.000***
CBC	-> COP	0.194	0.087	2.222	0.026*
COC	-> COP	0.591	0.076	7.762	0.000***

Notes. *** $p < .001$; * $p < .05$.

Table 6: Total influences of direct and indirect influences

Hypothesized Paths	Direct Effect	Indirect Effect	SE	<i>p</i> -value	95% Confidence Intervals (CIs)	
					LLCI	ULCI
CBC -> COC -> COP	-	0.245	0.083	0.003** *	0.108	0.382
CBC -> COP	0.238	-	0.116	0.040*	0.048	0.428
Total Indirect Effect	-	0.245	-	-	0.074	0.527
Total Effect	-	0.483	-	-	0.269	0.697

Notes. LLCI = Lower limit confidence intervals; ULCI = Upper limit confidence intervals; CIs that indicate significance contain no zero; SE = standard errors *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

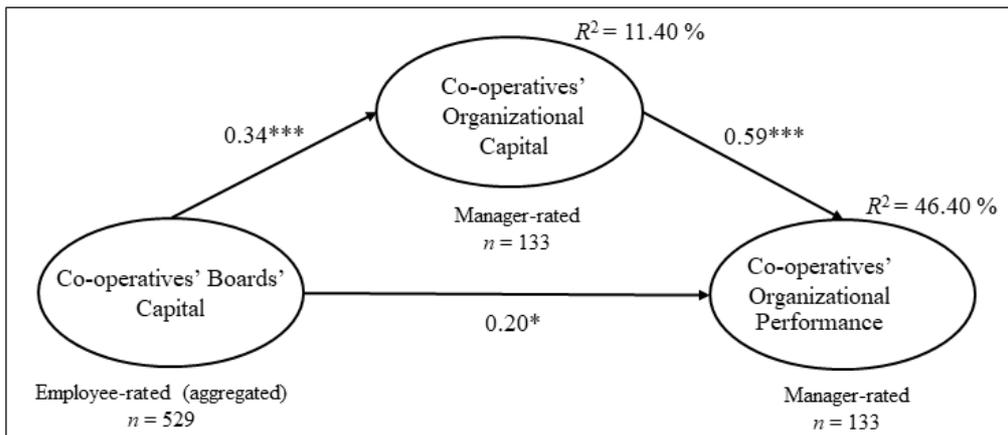
Furthermore, the proposed model was able to explain about 11.4 percent of the variance in organizational capital and 46.4 percent of the variance in organizational performance.

5. DISCUSSION AND CONCLUSIONS

This study investigated the relationship between co-operatives' board capital (CBC), co-operatives' organizational capital (COC), and co-operatives' organizational performance. The results indicate that CBC positively impacts co-operatives organizational performance with COC partially mediating this relationship. The main strength of the research lies in the use of multiple sources of data, which helped mitigate concerns regarding common method variance (CMV). Furthermore, the study highlights some of the inherent differences in the management

capacity of agricultural and non-agricultural co-operatives. This has important implications for both theory and practice, which are discussed further below.

The results of the analysis, based on hypothesis 1, reveal that board capital, which includes human capital (e.g., knowledge and skills) and social capital (e.g., relationships with third parties), has a positive impact on an organization's performance. This study is among the very few studies that have investigated these important variables in predicting organizational performance, especially in the context of co-operatives. While previous research in Thailand has examined the role of co-operative board members' motivation in affecting co-operative performance (e.g., Chareonwongsak, K. 2017), in practice, it is impractical for ordinary co-operative members to assess their board members' motivation, which resides in a person



Note: Path coefficients were standardized using STDYX in Mplus; *** $p < 0.001$; * $p < 0.05$.

Figure 2: Structural Equation Model Results

rather than being directly observable. On the other hand, board members' skills and knowledge as well as their relationships with external stakeholders are relatively more easy to observe.

This finding clearly suggests that members of co-operatives should pay special attention to the process of nominating committee members for board positions. In particular, members of agricultural co-operatives should be mindful that social capital of their board members is significantly lower than that of non-agricultural board members. Social capital becomes critical especially when co-operatives urgently need external sources of funding to keep their operations running. Based on informal conversations with managers of some of the agricultural co-operatives, it was found that their board members are generally less-educated than those on non-agricultural co-operatives' boards. This also suggests it may be fruitful for the Ministry of Agriculture and Co-operatives to consider specifying more stringent requirements for co-operatives' board members.

Another important finding is that co-operatives' organizational capital (COC) serves as a mediator in the relationship between CBC and co-operatives' performance. To date, relatively few studies have examined the mediators in the relationship between board characteristics and firm-level outcomes (e.g, Yousaf et al., 2021). Organizational capital in the current research context refers specifically to both co-operatives'

operating procedures and their infrastructure as well as their financial viability. Although this suggests that co-operatives with high structural and financial capital may have better organizational performance, based on conversations with several of the co-operatives' managers, it is important to acknowledge that there is a lack of organizational capital in any type of co-operative. This knowledge should lead to further discussion about what could be done to strengthen the capital of co-operatives that fall below acceptable standards.

Despite these findings, the study has certain limitations that should be accounted for in future research. First, although it was possible to collect data from two sources (i.e., employees and managers), future research should consider collecting objective data to strengthen these findings. Secondly, the research did not consider other potentially important characteristics of the board members, including their ethics levels, which can be critical in the Thai context, where co-operative corruption is rampant (Isranews Agency, 2017). Future research may consider conducting in-depth research on the dynamics within co-operatives' board meetings. For example, it is possible that charismatic chairpersons of co-operatives may have too much influence and power over other board members, such that it undermines their effective and transparent operations. Do other members feel hesitant or 'kreng-jai' to speak up in opposition to the chairperson when it comes to making important decisions that affect members as a whole? Such

a lack of psychological safety among board members would significantly undermine the integrity of the co-operatives in the eyes of stakeholders. According to the Office of the National Anti-Corruption Commission (NACC), in 2015 alone, a total of 277 Thai co-operatives were alleged of engaging in corrupt practices, with an estimated damage of 18,763.55 million baht (Isranews Agency, 2017). This has greatly undermined the trust and confidence of more than 11 million members in the Thai co-operative system (Cooperative Auditing Department, 2020). Finally, although significant differences were found in some of the main variables between agricultural and non-agricultural co-operatives, it is important to note that the response rates were slightly above 44%, suggesting that the information obtained in this study may not be true of the other co-operatives in the population.

CONCLUSION

This research contributes to the literature by shedding light on the role of board capital and organizational capital in the continued success of co-operatives in Thailand. Board capital was found to have both direct and indirect effects on organizational performance, while organizational capital was found to partially explain the influence of board capital. The findings further revealed that agricultural and non-agricultural co-operatives may have different levels of internal capital. Scholars are

therefore encouraged to conduct further research on this important, yet underexplored context.

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