



# The influence of intangible resources on the performance of agricultural cooperatives



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## ABSTRACT

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The purpose of this study is to investigate the relationship between intellectual capital (IC), which is represented by structural capital (SC), relational capital [RC], and human capital (HC), and member participation (MP) and performance within the context of agricultural cooperatives. This study employs a survey technique involving 104 palm oil smallholders' cooperatives in Peninsular Malaysia, and the data are analyzed through the partial least squares (PLS) technique. The results indicate that MP and RC have a significant direct relationship with cooperatives' financial performance. Simultaneously, MP also has a direct and significant relationship with the cooperatives' non-financial performance. This proves that MP is the most important intangible resource that determines the cooperatives' financial and non-financial performance. Members' cooperation contributes through active involvement and sharing of constructive ideas, while RC contributes to the competitive advantages in cooperatives' business dealings. Meanwhile, SC and HC have non-significant relationships with cooperative performance. The findings confirm the postulation of the RBV that internal resources are useful to gain superior performance in the marketplace. Therefore, management of agricultural cooperatives must maintain good relationships with their members and relevant constituencies to ensure sustainable performance.

**Contribution/Originality:** The originality of this study lies in its attempt to explore the performance determinants within the context of palm oil smallholder cooperatives, which is scarce in current literature. Thus, the study enriches the current knowledge pertaining to the performance behaviors of agricultural cooperatives from the RBV theoretical perspective.

## 1. INTRODUCTION

Cooperatives have a major role in mitigating poverty and promoting the well-being of the people, especially their members. Additionally, cooperatives serve as catalysts for promoting inclusive and sustainable growth, and they provide employment for local people. The contributions occur through engagement in various economic activities that create employment, business and income opportunities for the local people (Esim, 2014). Moreover, the agricultural cooperatives have contributed to a relatively better quality of life and the empowerment of small farmers (Esham, Kobayashi, Matsumura, & Alam, 2012; Kumar, Wankhede, & Gena, 2015; Kurimoto, 2004). According to Esham et al. (2012) and Kurimoto (2004), Japanese agricultural cooperatives have become major catalysts for resilience and innovation in Japan's agricultural sector. Meanwhile, the Indian cooperative movement

has also contributed significantly to the development of the Indian agricultural and rural sectors, which have been largely dominated by small and marginal farmers since 1904 (Kumar et al., 2015). The cooperative movements benefit the members by improving their crop productivity and income generation through various programmes related to sustainable agriculture activities. As far as Malaysian palm oil smallholders are concerned, similar cooperatives have also helped the smallholders in terms of enhancing relationships among community members, expanding community participation in palm oil agricultural activities, monitoring agricultural activities, providing jobs for the local people and improving smallholders' skills and local facilities. Despite the importance of cooperatives, studies pertaining to performance behaviors within these organizations are relatively unexplored compared to the investor-owned setting. Therefore, a specific study should be carried out that examines the issue within the cooperative setting.

Cooperative development is shaped by several factors, such as the prevailing economic conditions, farmers' organizations, and public policies (Ortmann & King, 2007). The emergence of the 'new generation cooperatives' (NGCs) in 1988 has imposed an influential force that has brought various performance issues in the field of agricultural cooperatives. According to Ortmann and King (2007), NGCs have heightened the competition among cooperatives through relatively strategic and value-added activities. Thus, agricultural cooperatives are forced to be more performance-oriented. However, the nature of a cooperative's identity may become a barrier to the effective adoption of new management perspectives. For example, one of the cooperatives' strengths that could be a potential disadvantage within the current environment is having 'homogeneous owner-members'. In the past, this feature created advantages for cooperative movements as it allowed members to fight against deprived conditions and unjust treatment by having control over an organization's decisions and supply chain process. In the current environment, cooperatives may be trapped in a dilemma of protecting members' interests in relation to their distinct but concurrent roles as the owners and the customers. In order to be competitive, a cooperative must make decisions in line with the market trends (e.g., sell agriculture inputs at a lower price to customers who are also cooperative members). Nevertheless, these decisions may jeopardize the entire cooperative performance and members' interests in terms of their position as cooperative owners. Therefore, given the critical role of cooperatives' performance, more empirical studies should be conducted in parallel with their contribution to the recent development agenda.

The current study extends a recent work by Ishak, Omar, Sum, Othman, and Jaafar (2020), who explored the cooperative performance concept using a qualitative approach based on the point of view of cooperatives' top management. Furthermore, the current study expands the understanding of cooperative performance through a quantitative approach, with the aim of validating the relationships between potential independent variables and the smallholders' cooperative performance. Specifically, this study uses the resource-based view (RBV) as the underlying basis to test the relationships between various intangible resources and cooperative performance. The RBV argues that internal resources and capabilities are powerful resources that enable superior performance in the marketplace (Barney, 1991; Wang, 2014). The RBV proponents suggested that strong competitive advantages are best created through strategic resources, such as the core distinctive competencies and strategic assets (Barney, 1991; Madhani, 2010; Wang, 2014). Therefore, it is necessary to integrate the intangible resources, namely member participation (MP) and structural capital (SC), human capital (HC) and relational capital (RC), as potential variables in explaining performance within the cooperative setting.

The investigation enables top management and policymakers within cooperatives to improve performance in line with strategic management trends, which emphasize the role of intangible assets. To date, intangible resources have been relatively ignored in organizational performance discussions. According to Shahzad, Hussain Baig, Rehman, Latif, and Sergi (2020), this is largely due to the treatment of conventional accounting standards that hinder the disclosure of intangible assets in the balance sheets. Nevertheless, in recent years, intangible resources have gradually become critical elements to ensure superior performance compared to the ordinary tangible assets in

the modern environment (Sardo & Serrasqueiro, 2017). Although many investigations on the link between intangible resources and performance have been conducted based on the RBV argument, the empirical evidence within cooperative settings is relatively scarce. Hence, our study provides additional value to organizational behavior practitioners by establishing such relationships within the context of the palm oil smallholder cooperatives in Malaysia.

## 2. LITERATURE REVIEW

### 2.1. Uniqueness of Cooperatives

The contributions of cooperatives to the socio-economic well-being of their members have been highlighted in numerous studies, such as those by Dorgi and Gala (2016); Ojiagu and Uchenna (2015); Mahazril'Aini, Hafizah, and Zuraini (2012); Kumar et al. (2015); Ortmann and King (2007) and Ahmad (2005). Furthermore, cooperatives are considered as significant development agents that facilitate employment opportunities and economic and social development for countries, especially in rural areas (Ahmad, 2005; Esham et al., 2012). Despite their important contributions, studies on cooperative performance remain relatively scarce. Thus, the current study enables the testing of the RBV argument, particularly the influence of intangible resources within a different type of organizational setting (i.e., cooperatives).

Cooperatives are unique entities established around a simple business proposition by a group of homogeneous member-users (Boland, Hogeland, & McKee, 2011). The members typically share a common background profile and serve concurrently as both owners and customers (Limnios, Mazzarol, Soutar, & Siddique, 2018). Through a jointly-owned and democratically controlled organization, the members' interests are better protected and served compared to investor-owned entities, which are largely concerned with profit maximization and the accumulation of wealth for the owners (Dobre-Baron, 2015; Ishak et al., 2020). Cooperatives work differently from investor-owned companies as the former adhere to a different set of principles, including the following (Dobre-Baron, 2015):

1. The cooperative's activities must be based on the mutuality principle, and all benefits granted to the members should be proportional to their contributions to the organization.
2. The members must be actively involved in the cooperative activities through various roles, such as employees, customers or suppliers.
3. The basis of exercising control by the members of the organization must be on the 'one man, one vote' principle to ensure equality of control among all cooperative members.
4. If there are investor-members, their right to vote should be limited, if allowed, so that the control is granted to the member-users.
5. The profits must be distributed to the members in a limited way according to the transactions with the cooperative or retained to serve the needs of the members.
6. There is no discrimination in the admission of members within the cooperative following the specific rules regarding membership, resignation and exclusion.

Generally, cooperatives can be classified into a few major types according to the way they satisfy members' needs based on relevant criteria, such as the type of activity, members' backgrounds, the geographical spread of activity or the benefits provided to the members. As such, the main types of cooperatives that operate in countries around the world include consumer, worker, producer, marketing, housing, credit, social and agricultural (Dobre-Baron, 2015). These different types of cooperatives are meant to meet the needs of the members regarding their particular problems or concerns.

Agricultural cooperatives can be further split into three sub-categories according to their main activities: (1) marketing, (2) manufacturing and sale of farm produce, and (3) service (Ortmann & King, 2007). Marketing agricultural cooperatives aim to help members gain reasonable trading values related to activities such as bargaining for fair or better prices and handling the marketing process. Meanwhile, the manufacturing and sale of

farm produce include activities such as purchasing bulk farm produce and manufacturing as well as formulating and distributing farm supplies and inputs (e.g., seeds, fertilizers, chemicals and farm equipment). The agricultural service cooperatives deal with activities such as transportation, storage, grinding and drying, and providing credit, utilities and insurance facilities to members. Within the scope of agricultural cooperatives, there is a gap in the research regarding the study of agricultural cooperatives according to the types of commodities traded by the members. Thus, the current study seeks to evaluate factors that potentially influence the performance of palm oil smallholders' cooperatives.

## *2.2. Intangible Resources and Business Performance*

The RBV advocates a different angle in creating competitive advantages (Galati, Tulone, Tinervia, & Crescimanno, 2019). It deviates from the typical perspective by recognizing the value of intangible assets (resources) and internally driven competencies as influential determinants of organizational performance. Among the plausible intangible resources that can affect business performance are internal marketing (Vrontis, Thrassou, & Zin, 2010), intra-firm resources and capabilities (Galati et al., 2019), human resource management (HRM) practices (Bresciani, Thrassou, & Vrontis, 2012), organizational structure (Maduenyi, Oke, & Fadeyi, 2015), and intellectual capital (Ahmed, Guozhu, Mubarik, Khan, & Khan, 2020; Maditinos, Sevic, & Tsairidis, 2010). Vrontis et al. (2010) explored the effects of internal marketing as the solution to maintaining high-quality services for businesses that rely on their employees to deliver value to customers. By treating employees as internal customers of the business, the company can ensure higher employee satisfaction, which can lead to the development of a more customer-conscious, market-oriented and sales-minded workforce. Eventually, highly motivated and customer-oriented employees create a positive effect on the company's performance. Bresciani et al. (2012) also relate intangible resources to business performance in the services industry, particularly the hotel sub-sector. They examined the role of the formal HRM practices in improving hotel performance and found that higher performance exists wherever HRM is introduced as a strategic part of the individual hotel's business strategy.

Galati et al. (2019) examined the relationship between internal resources and global competitiveness among the small and medium-sized Sicilian wine enterprises. Their findings reiterate the notion that internal resources, which are unique and firm-specific, are the determining factors that ensure successful market internationalization. The factors comprise firms' experience in the international market, the characteristics of the entrepreneur owners and the implementation of voluntary certifications. Meanwhile, Maduenyi et al. (2015) examined the relationship between organizational structure and organizational performance. In their work, they referred to 'organizational structure' as the formal configuration between individuals and groups concerning the responsibilities, allocation of tasks and authority in the organization, which define how people, positions and jobs are divided and coordinated. Their results indicate that organizational structure has an impact on organizational performance (Maduenyi et al., 2015). This finding reiterates the significant role of intangible resources as determinants of business performance.

Based on the literature review, the relationship between intangible resources and organizational performance is interesting to explore in various contexts. However, one context that has been relatively understudied is the cooperative setting, particularly those that are agricultural. Thus, the current study on the determinants of palm oil cooperatives' performance within the scope of intangible resources adds value to the contemporary literature and cooperative management practices. The next section provides further details on the RBV and the concept of cooperative performance.

## *2.3. Determinants of Cooperative Performance*

Mubirigi, Shukla, and Mbeche (2016) examined the effect of internal and external factors, such as cooperative structure, governance structure, managerial skills, training, and government policies, on cooperative performance and found that 'cooperative structure' has a significant influence on the performance of agricultural cooperatives. In

addition, membership intentions and diversity contribute to the lack of commitment among members and the subsequent disruptive performance. It has been shown that some members tend to join a cooperative merely to gain access to certain facilities or to obtain favorable dividend returns and are not interested in the purpose of the cooperative. In addition, poor policy implementation has also been found to disrupt cooperative performance (Mubirigi et al., 2016).

Competitive advantages can be developed from the possession of physical assets, financial capital and the effective use of intangible assets, which are unique and firm-specific (Kamukama, Ahiauzu, & Ntayi, 2011). The intangible resources can be represented by two independent variables – organizational restructuring and strategic attributes (Benos, Kalogeras, Verhees, Sergaki, & Pennings, 2016). Thus, the cooperatives' choices in terms of organizational restructuring and strategic attributes will influence their performance within the context of dynamic markets or transition periods. The intangible assets represent all resources used in the creation of enterprise value, which are not disclosed in a traditional balance sheet. Intangible assets can be used to create sustainable advantages for the company owners (Ahmed et al., 2020; Barkat & Beh, 2018; Kamal, Mat, Rahim, Husin, & Ismail, 2012; Sardo & Serrasqueiro, 2017). The benefits of intangible assets, however, are not restricted to investor-owned entities. For example, Liang, Huang, Lu, and Wang (2015) showed that the intangible resources in the form of social capital and member participation can influence cooperatives' economic performance. Liang et al. (2015) defined 'social capital' as the network that facilitates interactions among individuals. They also distinguished three dimensions of social capital – external, relational and cognitive. External social capital refers to 'inter-organizational' networks to which a cooperative belongs. Meanwhile, the relational and cognitive dimensions are classified as 'intra-organizational'. The relational dimension captures the elements of trust among members and between member-managers, while the cognitive dimension refers to the collective orientation of members within the cooperative. Therefore, social capital refers to a beneficial network that facilitates cooperative processes and influences cooperative performance.

Intellectual capital (IC) is among the intangible assets explored by contemporary strategic management scholars and practitioners, respectively. Many studies have highlighted the relationship between IC and firm performance (Ahmed et al., 2020; Barkat & Beh, 2018; Hashim, Osman, & Alhabshi, 2015; Kamal et al., 2012; Kamukama et al., 2011; Maditinos et al., 2010; Rajaratnam, Noordin, Said, Juhan, & Mohd Hanif, 2009; Sharabati, Jawad, & Bontis, 2010; Wang & Cao, 2015). The IC concept can be decomposed into structural capital (SC), human capital (HC) and relational capital (RC), which are all used to create value and superior cooperative performance (Kamal et al., 2012; Scafarto, Ricci, & Scafarto, 2016; Wang & Cao, 2015). Structural capital refers to the exclusive knowledge of a cooperative, such as an effective database, an excellent organizational culture and efficient procedures. Relational capital includes the benefits that arise from cooperative relationships with customers, suppliers and other constituencies that enable cooperatives to perform certain tasks/transactions more efficiently and effectively. Meanwhile, human capital refers to the knowledge, skills and commitment of the workers to perform the necessary tasks on behalf of the cooperative. Based on previous findings, we argue that each component of IC is expected to have an effect on the performance of cooperatives.

Member participation (MP) refers to the members' involvement in the activities of a particular society (Dorgi & Gala, 2016). Active members are vital for an effective cooperative movement. Taiwo and Okafor (2011); Grauvilardell (2013) and Ismail, Zainol, Yusoff, and Rusuli (2019) have all found a significant relationship between MP and cooperative performance. In contrast, Huang, Zazale, Othman, Aris, and Ariff (2015) found an insignificant relationship between MP and cooperative performance, which could be due to the member participation indicator used in that particular study. In their work, Huang et al. (2015) measured member participation based on the board of directors' attendance rates. Therefore, it may not sufficiently capture the element of member participation, which encompasses various involvements in the cooperative's activities. Meanwhile, a study by Mahazril'Aini et al. (2012) revealed a positive relationship between MP and cooperative performance. In contrast to Huang et al. (2015),

Mahazril'Aini et al. (2012) used a broader concept to capture MP by including member attendance at general meetings and their patronage of the cooperatives' products and services.

As far as theoretical basis is concerned, the RBV is the most relevant in justifying the underlying framework. Many strategic management researchers have used the RBV to examine the differences in performance, suggesting that performance largely results from the ownership of unique resources that have differential productivity values (Nath, Nachiappan, & Ramanathan, 2010). Moreover, the RBV analyzes and interprets organizational resources to understand firm performance resulting from the presence of a sustainable competitive advantage. As such, RBV emphasizes the internal resources and capabilities of a firm to help formulate a strategy to gain a superior competitive advantage in the marketplace (Barney, 1991; Madhani, 2010; Wang, 2014). Furthermore, the internal resources and capabilities can determine a firm's strategic choices while competing with its external environment. Thus, the RBV fits our discussion of cooperative performance in relation to the prescribed antecedents, as depicted in Figure 1.

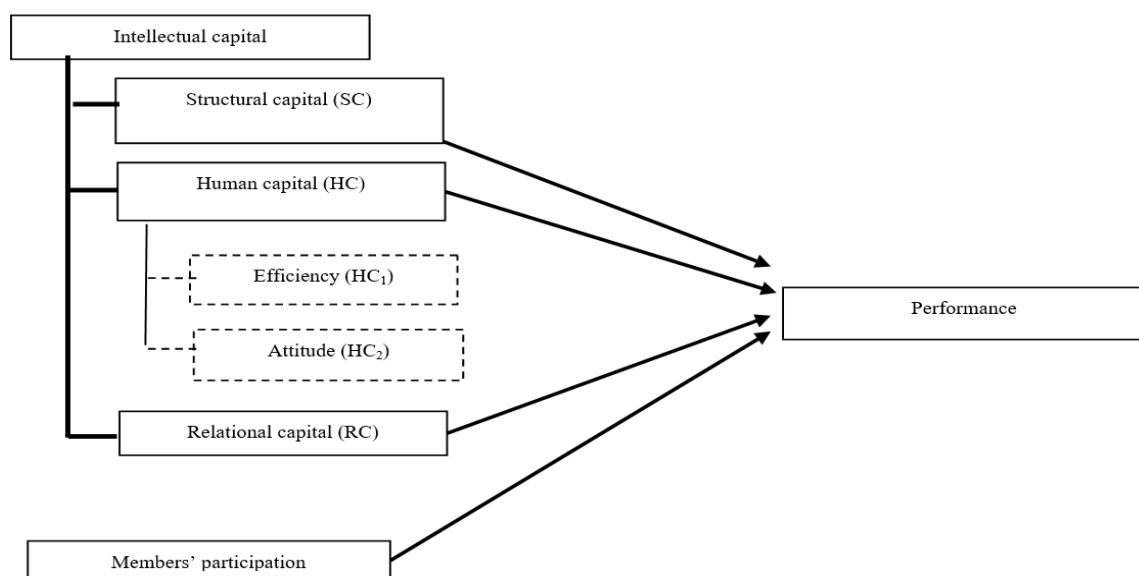


Figure 1. Research framework.

According to Khan and Quaddus (2018), there are at least two classes of HC dimensions that influence firm performance – demographic and psychographic. As a result, employees' attitudes and efficiency were selected as the operational dimensions for HC. 'Attitude' represents the psychographic dimension, which reflects employees' affective or emotional states that can influence the attainment of organizational performance. Meanwhile, 'efficiency' represents the demographic dimension, which is connected to the skills and knowledge that are beneficial to the attainment of organizational performance. The hypotheses are posited as follows:

*Ha1: A relationship exists between structural capital (SC) and cooperative performance.*

*Ha2: A relationship exists between human capital (HC) and cooperative performance.*

*Ha3: A relationship exists between relational capital (RC) and cooperative performance.*

*Ha4: A relationship exists between member participation (MP) and cooperative performance.*

### 3. METHODS

#### 3.1. Research Design

The sample was drawn from the list of palm oil smallholder cooperatives provided by the Malaysia Cooperative Societies Commission official database. The sampling frame consists of a total of 234 palm oil smallholders' cooperatives in Peninsular Malaysia, and 104 (44%) questionnaires were returned. The respondents who answered

the questionnaires are board members (Chairman, Secretary or Treasurer) as they are assumed to be more familiar with cooperative business and performance issues. Table 1 presents the demographic profiles of the respondents.

Table 1. Respondents' profiles.

Respondents' profiles: N = 104	Frequency	Percentage (%)
Parent agency:		
MPOB	17	16
FELDA	57	55
FELCRA	30	29
Number of managerial employees:		
1-5 People	76	73
6-10 People	7	7
11-15 People	2	2
16-20 People	-	-
21-25 People	-	-
26-30 People	1	1
No information	18	17
Number of operational (Site) employees:		
1-5 People	36	35
6-10 People	12	12
11-15 People	7	7
16-20 People	2	2
21-25 People	1	1
26-30 People	3	3
31-35 People	1	1
36-40 People	-	-
41-45 People	2	2
46-50 People	1	1
51-55 People	-	-
56-60 People	1	1
No information	38	36

Note: MPOB is the Malaysian Palm Oil Board; FELDA is the Federal Land Development Authority; FELCRA is the Federal Land Consolidation and Rehabilitation Authority.

### 3.2. Measurement and Procedures

A questionnaire was developed to measure the independent and dependent variables. IC was measured according to the three separate dimensions of SC, HC and RC. Specifically, the state of cooperatives' internal structures for the implementation of their activities and management is measured by items under the SC section, while cooperative workers' competencies and attitudes are evaluated through items in the HC section. RC was measured by the 'inter-organization' element to evaluate the contribution of external networks in supporting the cooperatives' activities.

Finally, MP is measured by the level of members' involvement in various activities organized by the cooperatives. The cooperatives' performance was measured by both financial and non-financial performance. All the responses were scored based on a 6-point Likert scale, from 1 = strongly disagree to 6 = strongly agree.

The questionnaire development began with an in-depth understanding of the agricultural cooperative context collected through the structured interviews with cooperative management during the preliminary study. The preliminary study was conducted to gain a sufficient understanding of the palm oil smallholders' cooperatives prior to the questionnaire development process (Ishak et al., 2020).

Finally, the questionnaire was pilot-tested in 17 cooperatives with similar backgrounds. The reliability test's alpha values ranged from 0.805-0.979, thus indicating good consistency (see Table 2).

Table 2. Reliability test result.

Subsection	Measure	Number of items	Cronbach's alpha
D1	Structural capital (SC)	8	0.936
D2	Relational capital (With external constituencies) (RC <sub>1</sub> )	7	0.825
D3	Employee efficiency (HC <sub>1</sub> )	4	0.933
D4	Employee attitude (HC <sub>2</sub> )	4	0.968
D5	Member participation	6	0.930
D6	Relational capital (Parent agencies' control) (RC <sub>2</sub> )	4	0.805
E1	Performance (Financial)	8	0.979
E2	Performance (Non-financial)	8	0.932

The hypotheses were tested through the partial least squares (PLS) analysis.

#### 4. ANALYSIS

The first-order reflective latent variables were subjected to the reliability, convergent validity and discriminant validity tests. Table 3 shows the Cronbach's alpha (CA), composite reliability (CR) and average variance extracted (AVE) values for each factor. The CA values that ranged between 0.828 and 0.934, indicate that all factor items were strongly correlated with each other and are thus reliable. Based on the CR and CA values in Table 3, the constructs' reliability are considered acceptable since all values have exceeded the 0.70 threshold (Nunnally, 1978). Convergent validity was assessed by examining the AVE value based on the minimum of 0.50 (Fornell & Larcker, 1981). As shown in Table 3, the CR and AVE values range from 0.616–0.836 and are higher than the recommended threshold. Therefore, the final model is considered satisfactory, and all items are good indicators for their respective latent variables.

Table 3. Model evaluations: Construct reliability &amp; validity.

Factor	Cronbach's alpha (CA)	Composite reliability (CR)	Average variance extracted (AVE)
Employee attitude	0.934	0.953	0.836
Employee efficiency	0.921	0.944	0.809
External relations	0.918	0.936	0.711
Financial performance	0.953	0.961	0.753
Human capital	1.000	1.000	1.000
Parent agency control	0.828	0.885	0.659
Member participation	0.903	0.926	0.678
Non-financial performance	0.911	0.927	0.616
Relational capital	1.000	1.000	1.000
Structural capital	0.921	0.935	0.644

In Table 4, the values of the diagonals are greater than the values of the inter-construct correlations, this shows that the constructs in this study are distinct and offer adequate discriminant validity, indicating a satisfactory level of the measurement model.

Table 5 presents the results of the hypotheses in terms of testing direct relationships. The coefficient of determination ( $R^2$ ), the path coefficient and the t-value of the hypothesized relationships were calculated to evaluate the significance of the relationships. An  $R^2$  value of 0.447 was found for the cooperatives' financial performance, and the  $R^2$  value for non-financial performance was 0.386. In addition, the findings show the existence of significant direct relationships between RC and financial performance ( $\beta = 0.252$ ;  $t = 2.064$ ,  $p = 0.040$ ,  $p < 0.05$ ) and MP and financial performance ( $\beta = 0.417$ ;  $t = 3.032$ ,  $p = 0.003$ ,  $p < 0.05$ ). These results indicate that RC and MP have positive relationships with cooperative financial performance. Additionally, MP has a significant positive relationship with non-financial performance ( $\beta = 0.359$ ;  $t = 2.776$ ,  $p = 0.006$ ,  $p < 0.10$ ).



Table 4. Discriminant validity analysis.

Factor	Employee attitude	Employee efficiency	External relations	Financial performance	Human capital	Parent agency control	Member participation	Non-financial performance	Relational capital	Structural capital
Employee attitude	0.914									
Employee efficiency	0.741	0.899								
External relations	0.648	0.625	0.843							
Financial performance	0.560	0.386	0.451	0.868						
Human capital	0.934	0.832	0.683	0.509	1.000					
Parent agency control	0.343	0.193	0.378	0.487	0.289	0.812				
Member participation	0.720	0.604	0.660	0.635	0.710	0.381	0.823			
Non-financial performance	0.580	0.414	0.399	0.710	0.533	0.403	0.601	0.785		
Relational capital	0.588	0.458	0.744	0.572	0.563	0.883	0.591	0.506	1.000	
Structural capital	0.655	0.604	0.743	0.553	0.676	0.441	0.651	0.513	0.688	0.802

Table 5. Hypothesis testing results (Direct relationship).

Relationship	Coefficient	Standard deviation	T statistic	P value	VIF
Employee attitude → Human capital	0.541	0.031	17.350	0.000	2.220
Employee efficiency → Human capital	0.531	0.018	28.780	0.000	2.220
R-squared	1.000				
Adjusted R-squared	1.000				
External relations → Relational capital	0.479	0.033	14.660	0.000	1.167
Parent agency control → Relational capital	0.702	0.047	14.911	0.000	1.167
R-squared	0.976				
Adjusted R-squared	0.975				
Structural capital → Financial performance	0.112	0.115	0.974	0.331	2.573
Relational capital → Financial performance	0.252	0.122	2.064	0.040	2.044
Human capital → Financial performance	-0.005	0.132	0.035	0.972	2.412
Member participation → Financial performance	0.417	0.138	3.032	0.003	2.356
R-squared	0.468				
Adjusted R-squared	0.447				
Structural capital → Non-financial performance	0.073	0.117	0.626	0.532	2.573
Relational capital → Non-financial performance	0.168	0.132	1.267	0.206	2.044
Human capital → Non-financial performance	0.134	0.119	1.129	0.259	2.412
Member participation → Non-financial performance	0.359	0.129	2.776	0.006	2.356
R-squared	0.410				
Adjusted R-squared	0.386				

Note: \*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% levels, respectively.

The structural model from the PLS analysis is summarized in Figure 2, which shows the explained variance of the endogenous variables ( $R^2$ ) and the standardized path coefficients ( $\beta$ ).

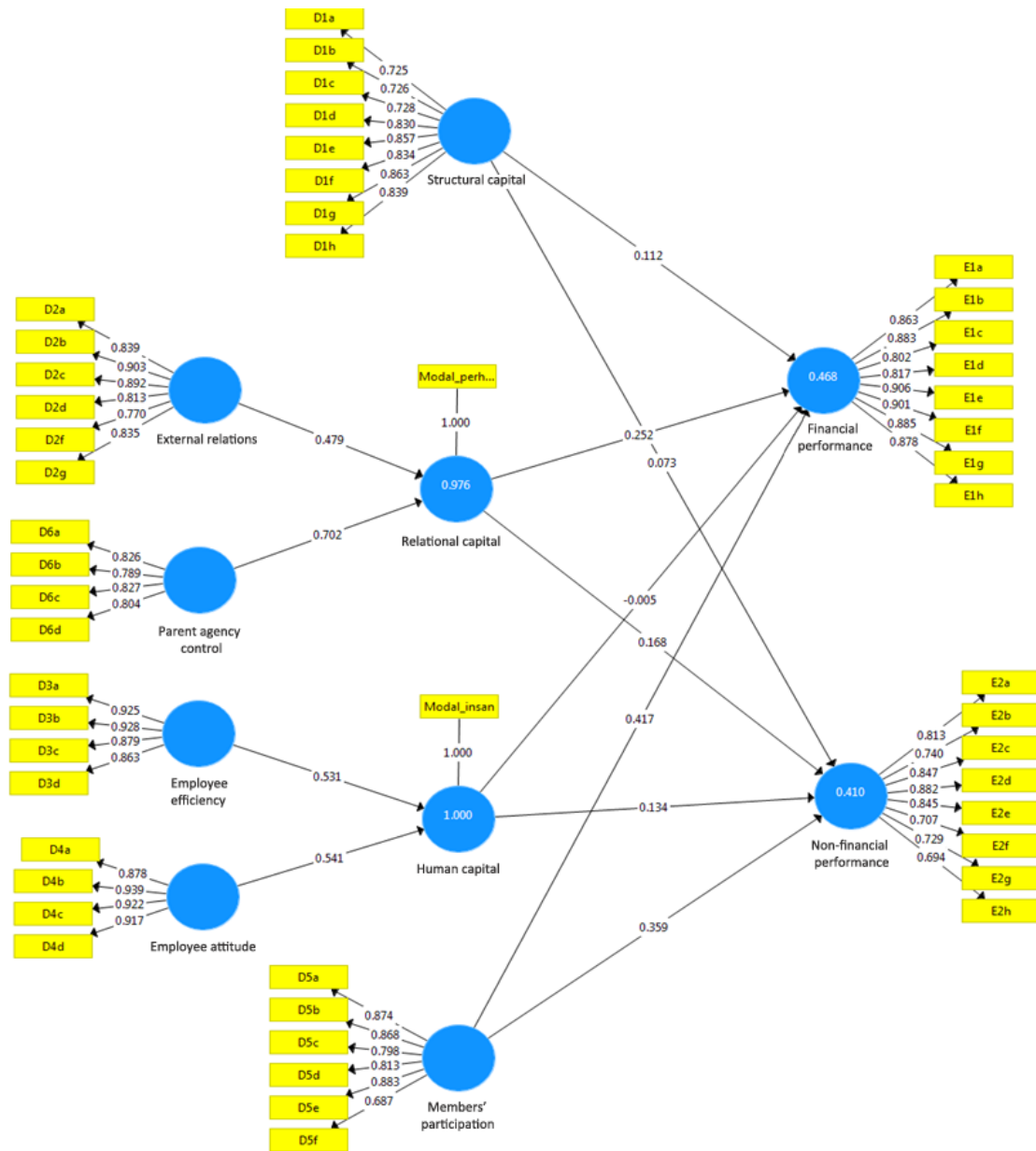


Figure 2. Model development.

Table 6 summarizes the results of the hypothesis testing.

Table 6. Hypothesis test results.

Relationship	Result
Structural capital (SC) → Financial performance (FP)	Not supported
Structural capital (SC) → Non-financial performance (NFP)	Not supported
Human capital (HC) → Financial performance (FP)	Not supported
Human capital (HC) → Non-financial performance (NFP)	Not supported
Relational capital (RC) → Financial performance (FP)	Supported
Relational capital (RC) → Non-financial performance (NFP)	Not supported
Member participation (MP) → Financial performance (FP)	Supported
Member participation (MP) → Non-financial performance (NFP)	Supported

In addition to checking for direct relationships, indirect relationships among the variables were also tested for. The results are presented in Table 7. As can be seen, two significant indirect relationships were identified: ‘external relations → financial performance’ ( $\beta = 0.120$ ;  $t = 2.063$ ,  $p = 0.040$ ) and ‘parent agency control → financial

performance' ( $\beta = 0.177$ ;  $t = 2.009$ ,  $p = 0.045$ ). 'External relations' and 'parent agency control' are dimensions of RC. Based on the results in Table 7, the 'external relation' and 'independence from parent agency control' have an indirect influence on the cooperatives' financial performance. The findings indicate that the cooperatives' external relationship with relevant stakeholders and the independence from parent agency control can influence cooperative's financial performance. The variables also have a direct significant relationship with the cooperatives' financial performance, because the management can be optimized for situations that are favorable for business dealings. In addition, independence from a parent agency's control leads towards decisions that fit with the cooperatives' context and distinct needs. This independence also means that the top-down interference or unnecessary interventions are removed from cooperative management, thus improving organizational performance.

Table 7. Indirect relationship test results.

Relationship	Coefficient	Standard deviation	T statistic	P value
Employee attitude → Financial performance	-0.002	0.071	0.035	0.972
Employee efficiency → Financial performance	-0.002	0.070	0.035	0.972
External relations → Financial performance	0.120	0.058	2.063	0.040
Parent agency control → Financial performance	0.177	0.088	2.009	0.045
Employee attitude → Non-financial performance	0.073	0.064	1.133	0.258
Employee efficiency → Non-financial performance	0.071	0.063	1.128	0.260
External relations → Non-financial performance	0.080	0.062	1.284	0.200
Parent agency control → Non-financial performance	0.118	0.094	1.253	0.211

## 5. DISCUSSION

Our findings prove the RBV argument that intangible capital exerts an influence on the performance of agriculture-based cooperatives. Specifically, the valuable, rare and inimitable intangible resources, which can be optimized by smallholder agriculture cooperatives, include member participation (MP) and relational capital (RC). The results show that MP remains the most important determinant for the attainment of financial and non-financial performance and indicate that cooperative performance requires active participation from the members (Grauvilardell, 2013). This situation is different from investor-owned companies in which the owners are separated from the management and the corporation's main activities. Thus, owner participation is implausible within the corporation context. In this study, we used a broader concept of MP similar to that employed by Mahazril'Aini et al. (2012). The concept includes all acts of taking part in activities conducted by the cooperatives, such as attending general meetings, joining the election process and using the cooperative's services/products. Cooperative members have many roles that run simultaneously (Limnios et al., 2018). For example, members are expected to be loyal users or purchasers of the cooperative's products/services. At the same time, they are required to provide ideas and suggestions to enhance the cooperative's performance via meetings and other relevant platforms. In contrast, Huang et al. (2015) found an insignificant relationship between MP and organizational performance. As far as the measurement of MP is concerned, Huang et al. (2015) used the relatively narrow indicator of members' meeting attendance. However, meeting attendance is insufficient to capture the broader concept of member participation, which should encompass the multiple roles of cooperative members. Based on Limnios et al. (2018), cooperative members are described as 'wearing four hats', which identify them as the patrons, investors, owners and community members of their cooperatives. In addition, the members in the context of this paper are also the suppliers of palm oil and fresh fruit for their own cooperatives.

In terms of intellectual capital (IC), our findings support Hafizah, Mahazril, Hussin, and Siti (2016); Hashim et al. (2015); Barkat and Beh (2018) and Scafarto et al. (2016), who found that IC is important in ensuring good cooperative performance. Nevertheless, our study presents a unique finding in the palm oil smallholders' cooperatives context. In particular, it was revealed that only relational capital (RC) has significant direct and

indirect relationships with financial performance. Within the scope of the RBV, RC has a positive relationship with financial performance because the networks with relevant parties in the industry (e.g., government agencies, processing mills, sub-contractors and the cooperative governing authority in Malaysia) all contribute to creating a competitive advantage in the cooperatives' business dealings. For instance, good relationships with sub-contractors appointed to perform tasks on behalf of the cooperatives can lead to better outcomes in terms of profits and return on investments. The advantage from RC is inimitable and varies across different cooperatives. Thus, the possession of RC adds value to the cooperatives, especially in critical situations. In addition, RC in terms of independence from the parent agency's control provides cooperative management with sufficient autonomy to manage the cooperatives in the best interest of its members and the entire organization. Independence from the parent agency's control demonstrates the ability of the cooperative's management to persuade or influence the parent agency and the latter's confidence in the former's managerial capability. Our finding pertaining to RC is also consistent with the notion of 'social capital' proposed by Liang et al. (2015) and Bandari and Yasunobu (2009). The concept of 'social capital' refers to all beneficial networks that facilitate interactions among the entities, which comprise inter-organizational (the external dimension) and intra-organizational (relational dimensions that involve trust among members and between member-managers as well as the cognitive dimension involving the collective orientation of cooperative members) networks. As far as social capital is concerned, the inter-organizational and intra-organizational networks of the relational dimension are the significant dimensions of social capital that contribute to the performance of the palm oil smallholders' cooperatives. Thus, to a certain extent, RC and social capital represent typical ideas of the 'productive and beneficial networks,' which are interchangeable.

Meanwhile, structural capital (SC) and human capital (HC) do not have significant relationships with cooperatives' financial and non-financial performance. The findings indicate that internal structure, including the working atmosphere, clarity of procedures, cooperative facilities and organizational structure, are not important determinants of cooperatives' performance within the study context. The findings are justified by the operational nature of the smallholder cooperatives. Most of the cooperatives serve as the agent or sub-contractor for their parent agencies, such as the Federal Land Development Authority (FELDA) and the Federal Land Consolidation and Rehabilitation Authority (FELCRA). Therefore, the major activities of the cooperatives are to accommodate the parent agencies and perform their specific tasks. For example, the main tasks of cooperatives linked with FELCRA are to disseminate information from the FELCRA to the smallholders, and vice versa, and to provide transportation services to move fresh fruit from the plantation site to the processing mills. Furthermore, the parent agencies also appoint the cooperatives to manage certain tasks/projects on their behalf, such as re-plantation projects in mature areas. As most of the tasks handled by the cooperatives are relatively simple and routine, they do not require complex internal structures or standard operational procedures. Furthermore, most cooperatives do not possess specific equipment because they merely act as the intermediaries between the palm oil smallholders and the agencies' processing mills/facilities. Thus, most equipment and facilities are provided by the agencies' mills, which are owned by the parent agencies.

Regarding human capital, the relationship with cooperative performance has been found to be non-significant. The result is derived from the nature of HC persisting within the cooperatives. Based on Table 1, most of the cooperatives only hire a few permanent workers and the majority outsource or sub-contract jobs/projects to other entities. Permanent workers are usually involved in operational tasks at the lower level. As a result, the workers' attitudes and competencies are irrelevant, as they merely assist the cooperatives' daily operations and are in charge of simple routine jobs. Furthermore, outsourcing to external parties leads to a situation wherein the cooperatives have no control over the people involved in the task execution. Based on a relevant study by Barkat and Beh (2018), the significant relationships between intangible capital (HC, SC and RC) and organizational performance occur indirectly through the mediation of knowledge process capability. HC, SC and RC can influence organizational performance only if the knowledge process capacity is available throughout the entire organization. Thus, the

competitive advantages expected to flow from the possession of HC and SC are insignificant to cooperative performance due to the characteristics of HC and the nature of the routine tasks.

Overall, the findings confirm the postulation of the RBV that internal resources and capabilities are useful for formulating strategies to gain a competitive advantage in the marketplace. The internal strengths that should be maximized by the palm oil smallholder cooperatives are member participation (MP) and relational capital (RC). The capability of maximizing MP and optimizing the benefits from RC can help provide competitive advantages for cooperatives because the assets are inimitable and cannot be seized from the cooperatives that own them. For example, a cooperative that enjoys a strong relationship with its parent agencies will have a better chance to seek business opportunities compared to competitors without similar networks. Simultaneously, member participation contributes to cooperative performance through their active involvement and sharing of constructive ideas. Therefore, these factors are considered important performance determinants for the palm oil smallholder cooperatives. Furthermore, the cooperatives must enhance the productive utilization of other forms of IC, such as HC and SC, in order to create long-term value and achieve good organizational performance.

## 6. IMPLICATIONS

The results of this study indicate that MP and RC should be considered as important determinants when studying cooperative performance. In addition, MP and RC are valuable intangible resources that influence the performance of smallholders' cooperatives. These elements are unique to cooperative settings and are different from the ordinary investor-owned context. Cooperative identity consists of self-help, self-responsibility, democracy, equality, equity and solidarity. Therefore, MP and relationships with relevant constituencies are among the necessary elements that can ease the process of upholding the collective needs and expectations. As a result, future studies can expand to other agricultural cooperatives and across different countries in order to test the validity of the proposed model. In addition, the model can be replicated in a comparative study to examine the determinants in the context of agricultural versus non-agricultural cooperatives. This recommendation is due to the nature of the agricultural sectors in developing countries, which are generally dominated by smallholders in rural areas and rely heavily on a 'reliable mediator' to address their socio-economic needs. As a result, RC tends to be higher in the agricultural context compared to the non-agriculture-based cooperatives.

On the practical side, the findings reiterate that MP is necessary in the cooperative context; therefore, cooperatives' management should develop a good relationship with their members and encourage active participation in all cooperative activities. In addition, cooperative management should nurture valuable networks with relevant constituencies in order to ensure sustainability and survival, especially in a volatile industry such as the agricultural sector. One of the most important constituencies is the parent agency related to each cooperative. Nevertheless, the relationship should be maintained on the basis of "client-vendor" (or business delivery partners) relationships rather than "superior-subordinate" relationships. Client-vendor relationships ensure fair and profitable transactions and lead to the sustainable financial performance of cooperatives in the long run.

## 7. CONCLUSION

Intangible resources play a significant role in contemporary performance management. Within the context of cooperatives, IC and MP are among the intangible resources that can potentially influence cooperative performance. IC can be divided into three sub-items: SC, HC and RC. Meanwhile, MP, which refers to the act of taking part in the activities of the cooperative, is vital in ensuring effective cooperative movement. The findings prove that MP has direct and significant relationships with a cooperative's financial and non-financial performance. Finally, RC has been found to have significant direct and indirect relationships with cooperatives' financial performance.

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