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## Implementation Level of Knowledge Management of Medium Cluster Cooperatives in Malaysia

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### Abstract

Knowledge management (KM) is a process of managing explicit knowledge assets, potentially explicit and implicit, owned by an organisation. The implementation of effective and efficient knowledge management will allow and help the cooperatives to achieve their established goals. Nevertheless, the implementation level of knowledge management in cooperatives is not known clearly due to limited research on the implementation of knowledge management in cooperatives. The intention of this study is to observe the KM implementation level by identifying Cultural (Human Resource), Governance Structure (Process) and Technological factors. Based on the records of the Malaysian Cooperative Commission (SKM), there were 545 cooperatives under the category of medium cluster selected as the study population. A purposive sampling technique was used in choosing the samples. 230 samples were obtained for this research using the Raosoft formula. Therefore, 230 completed copies, targeting the top management of the cooperatives, were collected and used for analyse. The data then analyse using partial least squares-structural equation modelling (PLS-SEM) SmartPLS 3.2.9. This study found that, the level of implementation of all KM practice factors is high with Cultural (Human Resources) having the most significance towards the effectiveness of cooperative governance. Cultural factors include interaction, dialogue, relations, contacts, perspectives, self-management, corporate visions, vision statements, organisational values, corporate values, value statements, trust, and openness. The research results can be used to support the KM initiatives in cooperatives to carry out good KM practices. The implementation of this study will provide an opportunity for further research to explore the level or state of knowledge management practices in cooperatives other than medium cluster.

**Keywords:** Implementation Level of Knowledge Management, Medium Cluster Cooperatives, Cultural Factor, Technological Factor, Governance Structural Factor

### Introduction

Research on Knowledge Management of Medium Cluster Cooperatives Practice in Malaysia aims to attain current information on the situation, level, and emphasis on knowledge management (KM) practice in cooperatives. This practice is measured based on the identified

factors to provide some impact on cooperative effectiveness when knowledge management is run well and efficiently. KM factors that are measured, are related to human resource culture in sharing knowledge, governance, or the process of implementing when ensuring the knowledge is spread within the cooperatives and the use of technology in supporting the shared knowledge.

Knowledge Management (KM) is a process of managing explicit knowledge assets, that are potentially explicit and tacit within an organisation. There are many concepts and definitions in knowledge management asserted by previous researchers (Davenport & Prusak, 1998, 2000; Duhon, 1998; King, 2009; Salisbury, 2003). They define KM as a discipline that highlights a unified method in identifying, capturing, evaluating, retrieving, and sharing all organisational informative assets. More definitions of knowledge management are navigated towards specific factors and contexts as hoped by researchers in the field related to knowledge management.

Knowledge management that adapts processes (Girard & Girard, 2015; King, 2005; King, 2009; Kucza, 2001), technology (Kankanhalli & Wei, 2005; Massey & Montoya-Weiss, 2006) and other factors help an organisation achieve its objectives. It can also improve individual roles and organisational achievements (Newman & Conrad, 2000) in line with the established goals of that organisation. This statement means that if an organisation can benefit from the source of knowledge that is within the organisation optimally by adhering to the process, strategies and relevant technology, the organisation will be more successful and competitive. Realising the role of KM in empowering individual and organisational achievements, many organisations, globally and locally, are applying the knowledge management concept, practice, and system in their organisations.

As an entity that is driven by the economy, a cooperative has the potential in contributing significantly toward the development of the economy of a country (Safawi et al., 2017). In the Malaysian context, cooperatives help in the nation's economic development through welfare activities and business and business profits that are run by the cooperative (Noraslinda et al., 2016, 2018). To remain to help the nation's economic development via the economic upturn of cooperative members, an organisation should thrive and improve its achievements from time to time.

The development and improvement of cooperative welfare and economic achievements should also be linked with the initiative of knowledge management. Similar to the success of a company that depends on its ability to utilising the knowledge and producing values from the knowledge source (Ichijo & Nonaka, 2007), a cooperative should also own such knowledge assets (other than a human resource, finance, building, vehicles) that need to be managed and utilised to digest new values of working cultures and arrangements as well as products and services that are offered. Working cultures, products and services that are improved can soar the achievements of a cooperative and subsequently, this enables the cooperative to remain competitive in competition and generate revenues to be distributed among cooperative members and eventually, increase the cooperative sector contribution to the nation's economy.

To remain competitive and generate revenue, substantive knowledge management should be practised. However, in the Malaysian cooperative context, many aspects concerning the

practice of knowledge management remain questionable. Some of the questions that are frequently asked are how far has the implementation of knowledge management practice been carried out in a cooperative? The identified issues are cooperative managerial and administrative worker turnover and the frequent change of the Members of Cooperative Board appointments. These have resulted in the knowledge owned by these people being taken along as they leave the cooperative if there are no efforts to manage their knowledge using effective knowledge management. Hence, research on knowledge management practice in cooperatives should be carried out to observe the implementation of knowledge management human resources, process, and technological factors to increase cooperative effectiveness.

### **Literature Review**

The need for and importance of knowledge management is undeniable. Knowledge management can assist an organisation in increasing the effectiveness and efficiency, market positioning, communication, and synergy among employees, and enables the learning to be more effective and efficient (Beijerse, 1999). A study by Muthuveloo et al (2017) states that the importance of creating and managing knowledge, particularly tacit knowledge can help in increasing organisation achievement to function and produce a better return on investment.

KM concept enables cooperative movement using information and shared ideas in assisting the cooperative management and administration when making exact decisions. According to Davenport and Prusak (1998), knowledge management is related to "an organisational exploitation and development of knowledge asset aim to continue the organisation objectives". The knowledge that needs to be managed is explicit knowledge (documented knowledge) and tacit knowledge (implied knowledge such as experience and skills). The successful organisation in managing knowledge normally sees knowledge as an asset to develop organisational norms and values which support knowledge creation and sharing (Ichijo & Nonaka, 2007).

Based on a study conducted by Rehman et al (2015), stating the KM practice that is implemented in an organisation will give an overall impact on the achievement of the organisation.

### ***The Implementation of Knowledge Management in a Cooperative***

Previous studies on knowledge management practice in cooperatives in Malaysia are still scarce. Knowledge management practice that is related to competitiveness and helping the development of the nation's economy is still undiscovered. Thus, empirical studies concerning the implementation level of knowledge management which includes Human Resources, Processes and Technology should be carried out. Such research can be the basis for cooperatives to implement KM based on the suggestions made by this research.

### **Knowledge Management Factors in a Cooperative**

Three main factors are used in creating the Knowledge Management (KM) Model in cooperatives for this study. They are Governance Structure (Process), Technology and Culture.

#### **a) *Technological Factor***

Technological factors in knowledge management can aid information integration to be more systematic, easy, and quickly obtained (Abualoush et al., 2018; Argyris & Schon, 1978; Duncan, 1972; Teece, 1998). This integration can reduce natural communication

barriers among different departments within an organisation. Since technology is in many forms, an organisation should invest in developing a comprehensive infrastructure to support various critical knowledge and communication.

b) Governance Structure Factor (Process)

The organisational Governance Structure factor is closely related to the technological factor because governance and work processes are executed with the assistance of technological equipment. The complex organisational structure may hinder or affect the process of collecting and sharing knowledge within an organisation. Fundamentally, the organisational structure should encourage information sharing and ongoing cooperation optimally among the employees who cover each unit and department within the organisation. Together with the policy and the process, the organisational reward and incentive system can determine where the knowledge is being accessed and how the knowledge is channelled to others (Leonard, 1995). Organisational leaders should attempt to obtain support from the higher management and convince the cooperation of subordinates in establishing a good governance system in an organisation (Tang, 2017).

c) Cultural Factor (Human Resource)

The culture that is practised in an organisation is the organisation's central potential in managing the knowledge effectively (Davenport & Prusak, 1998). The creation of new ideas through individual or group interaction, formally or informally, is seen as having the potential to create knowledge (Arrow, 1962). Such interaction and collaboration are important when a person tries to convey explicit knowledge or change tacit to explicit knowledge (Nonaka, 1998).

d) The Effectiveness of an Organisation

The effectiveness of an organisation refers to how far can an organisation, as one social system with certain sources and potentials, achieve its establishment goals without jeopardising the sources and potentials (Georgopoulos & Tannenbaum, 1957). It also refers to the productivity level and/or organisational revenues (Goodman et al., 1983). The effectiveness and success of an organisation from the productivity and revenue perspectives have become a yardstick for the success of organisational governance.

### Theoretical Framework

The model that was adapted from Gold et al (2001) was chosen because it is suitable and practical in the context of measuring the effectiveness of KM implementation in a cooperative. This model consists of three infrastructural potential factors namely Technology, Organisational Structure and Culture (Gold et al., 2001). Therefore, this research measures KM Technology in the cooperative from the aspects of Information and Communications Technologies, Business Intelligence Technologies, Collaborative Technologies, Distributed Learning Technologies, Knowledge Discovery Technologies, Knowledge Mapping Technologies, Opportunity Generation Technologies, and Safety Technologies. On the other hand, an organisational structure is measured from the aspects of regulations, procedures, report sequence, relations, incentive systems and scope of governance of a department in a cooperative. As for the cultural variable, its measurement includes interactions, dialogues, relations, contacts, perspectives, self-management, corporate visions, vision statements,

organisational values, corporate values, value statements, trust, and openness. Thus, these three factors have the potential to affect the effectiveness of knowledge management in cooperatives.

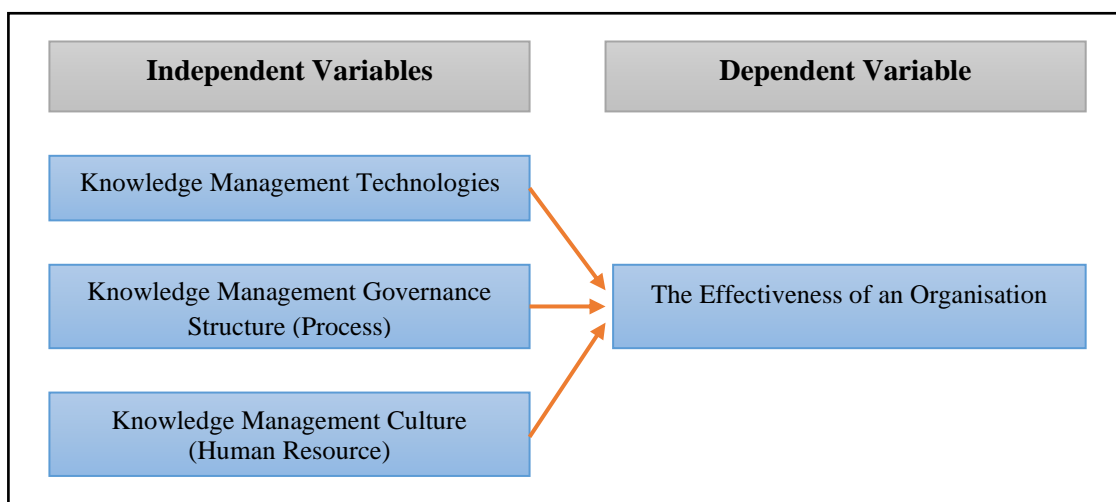


Diagram 1: Theoretical Framework of Knowledge Management in Malaysia

As a result of the theoretical framework discussed in this research, the following hypotheses on the implementation of KM practice were formulated:

- H1 - The implementation level of culture in medium cluster cooperatives is high
- H2 - The implementation level of governance in medium cluster cooperatives is high
- H3 -The implementation level of technology in medium cluster cooperatives is high
- H4 -The implementation level of knowledge practice affects the effectiveness of medium cluster cooperatives

### Research Methodology

This research employed a quantitative method. The data were gathered through an adapted questionnaire from Gold et al (2001) and the secondary data, the cooperatives' yearly reports, were obtained from SKM. The instrument validity was carried out through a pre-test and the reviews of skilful and experienced experts in the knowledge management field. There were 545 cooperatives under the category of medium cluster based on the SKM definition. A purposive sampling technique was used in choosing the samples. 230 samples were obtained for this research using the Raosoft formula. The samples were divided into a few fragments based on the functions of each state with the highest earnings. Samples from these segments are purposive samplings. The respondents are among the Members of the Cooperative Board, General Manager, Managers and chosen Executives. Partial Least Square – Structural Equation Modelling (PLS-SEM) of SmartPLS 3.2.9 software is utilised for this research.

### Analysis and Findings

This research focuses on knowledge management practice among medium cluster cooperatives in Malaysia. The analysis shows that the KM practice among medium cluster cooperatives in Malaysia is reasonably high from Governance Structure, Culture and Technology aspects which have given an impact on the effectiveness of the organisation. This shows that effective knowledge management practice in cooperatives is one of the important

aspects to increase cooperatives' performance. Good knowledge management can produce a lineup of efficient management and administration in knowledge retention which is an asset of the organisation. The importance of knowledge management can be utilised effectively and optimally in improving cooperatives' performance.

Three variables that are measured to review the level of implementation are Culture (Human Resource), Governance Structure (Process) and Technology in knowledge management in cooperatives. The findings of this research discover that many cooperatives cultivate good KM practices and own a good governance structure in supporting knowledge management. The use of technology in assisting the transferring, sharing, and creating knowledge among ALK and the cooperative management lineup also helps in increasing the effectiveness of cooperative management. Therefore, this research proves that all Cultural, Governance Structural and Technological factors are variables in implementing KM in cooperatives.

The researchers use the average min scores for each main section in the questionnaire to identify the implementation level of human resources, process, and technology in terms of knowledge management in the cooperatives. The measurement level of min scores is divided into three main levels based on the min score interpretation in Table 1.

Table 1

*The Tendency Level Based on Min Scores*

Min Scores	Tendency Level
1 – 2.33	Low
2.34 – 4.66	Medium
4.67 – 7.00	High

The descriptive analysis of all four Technological, Governance Structural, Cultural and Organisational Effectiveness factors is obtained. Referring to Table 2, the min values of all factors are 5.56 (Technology), 5.33 (Governance Structure), 5.89 (Culture) and 5.54 (Organisational Effectiveness). The min value tendency shows that the implementation of KM practice in the cooperatives is positive.

Table 2

*Min Values for Four Factors*

Factors	Min
Technology	5.5558
Governance Structure	5.3257
Culture	5.8943
Organisational Effectiveness	5.5394

Other than using min scores for the tendency level, the implementation level is analysed using SMartPLS to prove the findings of this research can be accepted and utilised. Identifying the factors that can improve cooperatives' performance, can be achieved by analysing the value of every variable that contributes to Predictive Relevance ( $Q^2$ ) using the performance-importance analysis method. As depicted in the diagram or Cross Validated Communality

technique findings and Blindfolding analysis below,  $Q^2$  value for Culture = 0.561, Organisational Effectiveness = 0.617, Governance Structure = 0.506 and Technology = 0.402. These values are used as inputs in creating performance-importance analysis using Scatter Plot.

Table 3

*Blindfolding Analysis for Every Factor*

	<b>SSO</b>	<b>SSE</b>	<b><math>Q^2(=1-SSE/SSO)</math></b>
Culture	2990.000	1312.844	0.561
Organisational Effectiveness	3220.00	1233.684	0.617
Governance Structure	2070.000	1023.358	0.506
Technology	1610.000	963.573	0.402

The  $Q^2$  values for every factor are plotted on the Scatter-plot chart to view the importance and implementation of certain factors in organisational effectiveness contexts. Diagram 1 shows the Scatterplot that maps the importance-implementation of involved factors.

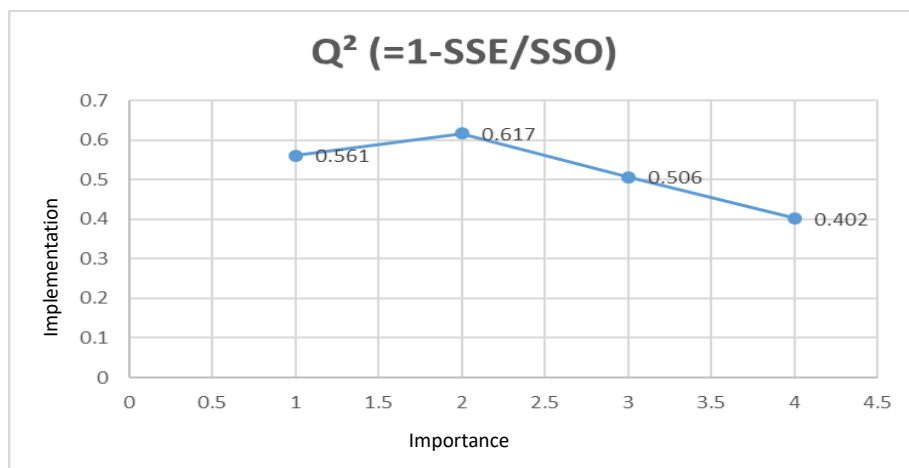


Diagram 2: The Importance-implementation of Involved Factors

By setting aside the organisational effectiveness factor, the relevance interpretation which is the importance-implementation of every factor is simplified in the following table:



Table 4

*The Importance-implementation of Every Factor*

Factor	Comparison of the Importance Level	Comparison of the Implementation Level
Culture	Not important compared to Governance Structure and Technology in the context of Organisational Effectiveness	Practised and given the highest attention compared to Governance and Technology
Governance Structure	More important than Culture but less important than Technology in the context of Organisational Effectiveness	Similar priority with Culture and is given more priority compared to Technology
Technology	The most important in the context of Organisational Effectiveness	Not given priority (low priority) compared to Governance Structure and Culture

The conclusion that can be derived from the predictive relevance ( $Q^2$ ) analysis is if cooperatives want effectiveness in management and next competitiveness, emphasis on the aspect of implementation (investment) should be done in line with KM Technology. The  $Q^2$  analysis discovers that KM Culture is insignificant but is given the highest priority. The governance structure of the cooperative knowledge management is on the track accordingly and is considered and implemented as it was supposed to be.

To find out the effectiveness of the implementation level of knowledge management in cooperatives, a few analyses are carried out using Partial Least Squares (PLS) analysis software. This software (Ringle et al., 2007) is to evaluate Cultural (Human Resource), Governance Structural (Process) and Technological implementation levels in knowledge management in cooperatives. As discussed, the validity and reliability of the implementation level are evaluated using the following analyses:

- i) internal consistency reliability,
- ii) indicator reliability,
- iii) convergent validity
- iv) discriminant validity.

*The following subtopics will present the findings for every analysis that was used to evaluate the validity of the measurement model.*

**Internal Consistency Reliability**

The effectiveness of the implementation level has satisfactory internal consistency reliability when Composite Reliability (CR) for every item is more than the threshold value of 0.7. Table 4.1 shows that the CR of every item in this research is between 0.843 and 0.962 where Technology = 0.843, Governance Structure = 0.916 and Organisational Effectiveness = 0.962. Hence, the result shows that all items that are used to represent the variable have satisfactory internal consistency reliability.

### ***Indicator Reliability (IR)***

The indicator reliability of the implementation level effectiveness is measured based on item loadings. The measurement level is said to have satisfactory indicator reliability when the value of each item loading is at least 0.7 and significant to at least 0.05 level. Based on the analysis, few items (C1 = 0.695, C6 = 0.680, C8 = 0.587, OE14 = 0.692, OE7 = 0.631, S6 = 0.684, S7 = 0.683, T3 = 0.698, T8 = 0.658 dan T9 = 0.696) in the measurement model show values below than 0.7. However, because the P-value for all four variables is 0.000, hence, all items are trusted. Table 4.4 shows loading for each item and t-statistics values for each variable. Based on the result of all items that were used for this research, it shows that the indicator reliability is satisfactory.

### ***Convergent Validity***

In this research, the validity of the implementation level was valued by referring to the average variance extracted (AVE) value. Convergent validity is sufficient when the variables have an average variance extracted (AVE) value of at least 0.5 or more. Table 4.5 shows that Culture = 0.619, Organisational Effectiveness = 0.670, Governance Structure = 0.603 and Technology = 0.553, in which all variables have AVE threshold values more than 0.5. The result shows that the research measurement model portrays sufficient convergent validity.

### ***Discriminant Validity***

In this research, to determine the value of the first level of discriminant validity implementation, the AVE values of each variable using Fornell and Larcker criteria are generated by using the SMartPLS algorithm function. Fornell and Larcker's criteria for cross-loading are considered to determine the discriminant validity of this research. Based on the result, the discriminant value is more than 0.7 off-diagonal value in which Culture (0.787), Organisational Effectiveness (0.818), Governance Structure (0.777) and Technology (0.744) complies with the Fornell-Larcker criteria.

### **Research Implication**

This research proposed few ideas that can be given attention by the stakeholders such as Institut Koperasi Malaysia (IKMa), Suruhanjaya Koperasi Malaysia (SKM), Kementerian Pembangunan Usahawan dan Koperasi (MEDAC) and cooperative sector. The cooperative sector should invest in technology-based infrastructure and equipment whilst Institut Koperasi Malaysia (IKMa) should play an important role in providing training programmes in the knowledge management field to increase cooperative governance effectiveness. Moreover, as the facilitator in developing the Standard Operating Procedure (SOP) of knowledge management in cooperatives, Suruhanjaya Koperasi Malaysia (SKM) can be put responsible for ensuring the implementation of the knowledge management SOP and preparing guidelines related to knowledge management method that can be used by cooperatives in Malaysia. Various initiatives and encouragement can be implemented by the Kementerian Pembangunan Usahawan dan Koperasi (MEDAC) and the ministry can support awareness programmes on knowledge management by increasing the effectiveness of cooperative governance.

### **Conclusion**

This research was carried out to study the implementation level of KM among medium cluster cooperatives in Malaysia. Three variables were measured to observe the implementation

level of KM namely Culture (Human Resource), Governance Structure (Process) and Technology. The findings reveal that cultural factors influence organisational effectiveness the most. Cultural factors include interaction, dialogue, relations, contacts, perspectives, self-management, corporate visions, vision statements, organisational values, corporate values, value statements, trust, and openness. Governance factors, on the other hand, include regulations, procedures, report sequence, relations, incentive systems and scope of governance of a department in a cooperative. Most cooperatives cultivate good KM practices as well as have a good governance structure in supporting knowledge management. Technological factors include Information and Communications Technologies, Business Intelligence Technologies, Collaborative Technologies, Distributed Learning Technologies, Knowledge Discovery Technologies, Knowledge Mapping Technologies, Opportunity Generation Technologies, and Safety Technologies. The use of technology is required to assist in the transferring, sharing, and creation of knowledge among ALK and members of the cooperative management. In addition, this also helps to increase the effectiveness of cooperative management. Hence, this research has proven that all Cultural, Governance Structure and Technological factors are variable factors in implementing KM in cooperatives.

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