Knowledge Management Process Capability and Organisational Performance of Manufacturing Small and Medium Enterprises in Malaysia: The Moderating Effect of Entrepreneurial Orientation

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Knowledge Management Process Capability and Organisational Performance of Manufacturing Small and Medium Enterprises in Malaysia: The Moderating Effect of Entrepreneurial Orientation

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A thesis submitted

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DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. It is original and is the result of my work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted at Universiti Malaysia Sarawak or to any other academic institution or non-academic institution for any other degree or qualification.

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A special thanks to my family and friends for their support throughout the study. I especially wish to thank my Mum for her motivation and support during this entire process.
In today’s increasingly globalised world, knowledge has become the key source of competitive advantage and organisational performance. Knowledge management (KM) has been acknowledged as an essential process for managing knowledge. Nevertheless, the literature relating to the KM process and performance in small and medium enterprises (SMEs) is rather limited. The competitiveness of an organisation also depends on how likely the organisation to be proactive, risk-taking when facing new opportunities. Entrepreneurial orientation (EO) therefore plays an important role in helping Malaysian SMEs to enhance their organisational performance. The main objective of this study is to investigate and provide empirical evidence on the interrelationships between KM, EO, and organisational performance. This study attempts to examine whether KM dimensions are critical success factors for SMEs performance. This study also attempts to determine the moderating effect of EO on the relationship between KM and organisational performance. To achieve these objectives, the survey was conducted with a sample of 159 Malaysian manufacturing SMEs located in Selangor, Johor, and Sarawak. The analysis of the partial least squares structural equation modeling (PLS-SEM) reveals that KM dimensions are of importance in enhancing the organisational performance of Malaysian SMEs. Three of four KM dimensions: knowledge acquisition, knowledge conversion, and knowledge protection were found to be significantly and positively related to both financial and non-financial performance. Moreover, EO has been found to positively moderate the knowledge conversion and application in their relationships with non-financial and financial performance, respectively. The findings of this study contribute to scholars and practitioners by providing empirical
evidence on the moderating effects of EO, and the impacts of KM dimensions on the organisational performance in the context of SMEs.

**Keywords:** Knowledge management, knowledge acquisition, knowledge conversion, knowledge application, knowledge protection, organisational performance, entrepreneurial orientation, small and medium enterprises
Pengurusan Pengetahuan dan Prestasi Organisasi dalam Perusahaan Kecil dan Sederhana Pembuatan di Malaysia: Pengaruh Penyederhana Orientasi Keusahawanan

ABSTRAK

Dalam era globalisasi ini, ilmu pengetahuan telah menjadi sumber daya yang penting dalam mencapai keunggulan kompetitif dan prestasi organisasi. Pengurusan pengetahuan telah diakui sebagai proses yang penting dalam mengurus pengetahuan organisasi. Walau bagaimanapun, terdapat penyelidikan yang terhad yang menggabungkan amalan pengurusan pengetahuan dan prestasi dalam perusahaan kecil dan sederhana (PKS). Selain itu, daya saing organisasi juga bergantung kepada sejauh mana sesuatu organisasi menjadi proaktif, mengambil risiko apabila menghadapi peluang baru. Oleh itu, orientasi keusahawanan memainkan peranan yang penting dalam membantu PKS Malaysia untuk meningkatkan prestasi organisasi mereka. Objektif utama kajian ini adalah untuk mengenal pasti hubungan antara pengurusan pengetahuan, orientasi keusahawanan dan prestasi organisasi. Kajian ini bertujuan untuk mengenal pasti apakah dimensi-dimensi pengurusan pengetahuan merupakan faktor kejayaan kritikal yang utama bagi PKS. Kajian ini turut mengenal pasti kesan orientasi keusahawanan sebagai faktor penyederhana dalam hubungan antara pengurusan pengetahuan dan prestasi organisasi. Untuk mencapai objektif, model teori telah diuji secara empirik dengan menggunakan data daripada 159 PKS pembuatan Malaysia yang terletak di Selangor, Johor, dan Sarawak. Data daripada tinjauan dianalisis dengan menggunakan partial least squares structural equation modeling (PLS-SEM) dan dapatan kajian menunjukkan bahawa dimensi-dimensi pengurusan pengetahuan adalah penting dalam meningkatkan prestasi organisasi PKS Malaysia. Dapatan kajian menunjukkan tiga daripada empat dimensi pengurusan pengetahuan iaitu pemerolehan pengetahuan, penukaran pengetahuan, dan perlindungan pengetahuan.
berpengaruh signifikan dan positif terhadap prestasi kewangan dan bukan kewangan. Di samping itu, hasil penelitian juga menunjukkan bahawa kesan penyederhanaan orientasi keusahawanan hanya wujud dalam hubungan antara penukaran pengetahuan dengan prestasi bukan kewangan dan aplikasi pengetahuan dengan prestasi kewangan. Penemuan kajian ini telah memberikan beberapa implikasi penting secara teori dan praktikal dengan memberikan bukti empirikal tentang kesan penyederhanaan orientasi keusahawanan dan impak dimensi-dimensi pengurusan pengetahuan terhadap prestasi organisasi dalam PKS.

Kata kunci: Pengurusan pengetahuan, pemerolehan pengetahuan, penukaran pengetahuan, aplikasi pengetahuan, perlindungan pengetahuan, prestasi organisasi, orientasi keusahawanan, perusahaan kecil dan sederhana
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1.1 Background

Industrial Revolution is rapidly changing the ways in which people and organisation create, exchange, and distribute value. The First Industrial Revolution was about steam and water power, the Second Industrial Revolution was about electricity and assembly lines, and the Third Industrial Revolution was about computer and automation. The Fourth Industrial Revolution is the revolution of the current era in which cyber-physical systems and disruptive technologies such as artificial intelligence (AI), robotics, virtual reality (VR), 3D printing and the Internet of Things (IoT) are priorities. Now, everything, from manufacturing plant to smartphones is digital, connected, and producing data. This data connectivity will enable organisations to track and collect all sorts of data on their customers, such as the things they buy, the ways they buy, and the experiences they have.

The opportunities presented by the Fourth Industrial Revolution are huge, but the revolution comes with new technologies and techniques that will disrupt and change the existing business model of all disciplines, economies and industries. The challenge for the manufacturing industry is to keep up with new technologies such as AI, robotics, IoT, and data analytics will change the product design, production process and supply chain. To answer the challenge, organisations must be willing to re-evaluate their business models and invest their time in learning new technology (North et al., 2018). Successful organisations will be those which can evolve themselves and seize the opportunities brought by the digital
economy whereas those unable to adapt and cope with such changes may phase out from the competition. Malaysian Government realised this fact and announced that 2019 Budget has an allocation of RM210 million to prepare the businesses for the Fourth Industrial Revolution. The states such as Selangor, Johor, and Sarawak have established a number of initiatives that aim to boost the development of the state’s digital economy.

As the world becomes increasingly digital, it is important for the organisations to develop dynamic capabilities and learn how to keep up with the latest technologies (Bharadwaj et al., 2013; Teece, 2017). The dynamic capabilities are crucial for organisations to meet changes and uncertainties in a rapidly changing environment (Teece et al., 1997). Among the many, learning and managing knowledge in organisations have been identified as key driving factors for the digital transformation in the current scenario (Bocock et al., 2018; North et al., 2018; North & Varvakis 2016; Thalmann & Ilvonen, 2018). This is in line with the knowledge-based view that knowledge is not just a source of competitive advantage but the most important source of it (Liu & Deng, 2015; Nonaka, 1991; Nonaka & Toyoma, 2003; Wu & Chen, 2014).

Knowledge management (KM) is a process-based capability of acquiring, converting, applying and protecting knowledge and information (Gold et al., 2001). The main objective of KM is to deliver the right knowledge and information to the right person at the right time and place (Ahmad et al., 2017). With the help of KM, the organisations can identify and leverage those knowledge assets that are vital for a successful organisational transition, development, and transformation (Porumb & Ivanova, 2014; Salerno et al., 2014). In addition, KM helps the organisations to accumulate new knowledge from various sources, makes knowledge useful, uses the knowledge for value creation, and prevents knowledge from being inappropriately used by others. Therefore, KM, in the current business
environment, has become a necessity for sustainable competitive advantage (Ling et al., 2014), innovativeness (Mohamad et al., 2017), effectiveness (Lo et al., 2017), and organisational performance (Darestani et al., 2016; Tseng, 2016).

Another factor that has been widely acknowledged by the literature as a significant determinant of organisational performance and competitiveness is the entrepreneurial orientation (EO) (Hayton, 2003; Irwin et al., 2018). EO is characterised by an entrepreneurial behaviour of being proactive and taking risks when facing opportunities (Liu et al., 2014). Drawing on previous research highlighting that EO may impact the relationship between an organisation’s strategy and performance, this study proposes EO to be a moderator in KM-organisational performance relationship (Chavez et al., 2017; Hussain et al., 2016). Specifically, an organisation which implements KM is expected to perform even better if the organisation adopts EO which focuses on looking for new opportunities to build competitive advantage (Lumpkin & Dess, 2001; Pett & Wolff, 2016).

Following Gold et al. (2001)’s argument that KM comprises process capabilities include acquisition, conversion, application and protection of knowledge, the central focus of this study is to examine how these KM capabilities are related to organisational performance of small and medium enterprises (SMEs) in Malaysia, with EO acting as a moderator. In accordance with previous research, this study measures organisational performance from both financial and non-financial perspectives to achieve a more complete understanding of SMEs performance level (Ho et al., 2016; Prieto & Revilla, 2006).
1.2 The Malaysian Scenario

KM in Malaysia has started to capture widespread practitioners’ and scholars’ attention in the mid-1990s when the Multimedia Super Corridor (MSC) was established (Chong, 2006). The economic experts view KM as a key element that can strengthen the nation’s competitiveness and accordingly help Malaysia to become a developed nation by the year 2020 (Ab. Samad et al., 2014). Since then, KM has been increasingly accepted and practised by the organisations in Malaysia, across different industries and functions. It has also attracted the attention of the researchers in Malaysia, especially in the field of business management (Chong et al., 2014; Mohamad et al., 2017; Wong, 2005). Despite substantial interest from practitioners and scholars, development of KM in many industries of Malaysia is still in an initial stage where its full potential has yet been discovered.

Chong et al. (2011) in their study of public sector accounting organisations in Malaysia, urged the necessity of studying KM in the context of the public sector. The authors have argued that the public and private sector organisations have different values and definitions of success and thus the ways in which KM are implemented in both sectors may be different. They proposed a KM framework that incorporates knowledge sharing process, enablers of KM and organisational performance, and suggested that the knowledge sharing process and enablers of KM such as technology resources can improve organisational performance of public sector organisations in Malaysia.

On the other hand, Keat and Lin (2018) have highlighted that the interrelationships between KM, talent management, and organisational performance remain underdeveloped. Their findings indicate that KM contributes significantly to the development and retention
of talent and organisational performance in the context of private institutions. This shows that KM is imperative to the growth of talent retention and company growth.

On the same breath, Ling et al. (2014) highlight the need for assessing KM implementation in MSC in Malaysia. The authors suggest that information infrastructure capability such as dynamic, data management, integrating, collaborating, utility, and security capabilities can be used by the organisations to perform KM activities for sustainable competitive advantage. It has been found that KM activities lead to competitive advantage and knowledge utilization is the strongest KM activity that contributes significantly to the competitive advantage of MSC in Malaysia.

Moreover, Mohammed et al. (2014) argue that KM-organisational performance relationship yet to be confirmed and they found inconsistent results about this relationship from past studies. The authors are of the opinion that marketing capabilities mediate the relationship between KM and the performance of hotels in Malaysia. The findings of their study revealed that KM is significantly related to marketing capabilities and performance of the hotels in Malaysia.

Lee et al. (2013) have stressed the need to develop a KM framework to examine the interrelationships between dimensions of KM and their impacts on technological innovation. Without understanding the importance of different KM dimensions, the full value of technological innovation cannot be realised. The authors have tested their proposed framework among 162 manufacturing organisations in Malaysia and they found that three KM dimensions, namely, knowledge sharing, knowledge application, and knowledge storage contribute significantly to the technological innovation of the manufacturing organisations in Malaysia. In a similar vein, Tan and Wong (2015) suggest that the research on the interrelationships between the knowledge resources, KM processes, KM factors, and
manufacturing performance has been scarce. They develop a framework to link these three KM measures for better performance of manufacturing organisations in Malaysia. Their study provides empirical evidence that knowledge resources, KM processes, and KM factors are significant contributors to the manufacturing performance.

The diversity of research above shows that KM is particularly important in enabling the success of the organisations in Malaysia. Malaysian SMEs have also realised the important role of KM for enhancing competitiveness and organisational performance (Bakar et al., 2015; Osman et al., 2016). Nevertheless, KM in SMEs has been reported to be still in an initial stage that requires further investigations (Khalique et al., 2018).

1.3 Problem Statement

SMEs are very important to Malaysia, as they represent 98.5% of the total establishments in Malaysia (SMECORP, 2018). Considerable contributions by the SMEs come in providing 66% of total employment and contributing to 37.1% of the nation’s gross domestic product (GDP) in 2017. However, taking into consideration the large establishment size of SMEs (98.5% of total business establishments), this contribution could be further improved. As Malaysia aspires to achieve high-income status by 2020, the Malaysian SME industry has to progress to contribute more to GDP, as the SMEs in high-income nations contribute on average 51% to GDP, according to a global research report commissioned by the Edinburgh Group (Edinburgh Group, 2013).

Acquisition and retention of talent is another significant challenge confronting Malaysian SMEs for many years. There is increasing concern that hiring labour and workers are becoming more expensive in Malaysia. As the cost of labour has been increased, many
Malaysian SMEs preferred to hire contract or temporary staff rather than hiring the permanent staff. Hiring contract or temporary might seem like a cheaper option compared to permanent staff, but it can actually cost the organisations more in the long run. Employee recruiting and training is time-consuming and costly, and it may lead to a decrease in organisation efficiency if the training turns out to be ineffective. According to SME annual report 2016/17, on average, as much as two employees are retrenched by Malaysian SMEs in every six months because the employers want to cut cost or the employees themselves do not perform well. Many at times, organisations do not realise the real cost of employee turnover. Knowledge loss due to employee turnover can be costly and lose a top talent is even more costly because it leads to the loss of important knowledge and skills.

Another key challenge that continues stands in Malaysian SMEs’ way is the labour productivity level. Despite its large number of establishments, Malaysian SMEs are having relatively low productivity. Labour productivity of Malaysian SMEs in 2017 was about RM63,167, only a 3.7% increase from RM60,887 in 2016. On average, the productivity gap between large organisations and SMEs has remained at 3.3 times since 2016. The inability of SMEs to acquire and retain talents as discussed earlier might be a reason for the relatively low productivity. Tasks can be left undone when an employee turnover occurs, and it creates extra works for the remaining employees, which in turn reducing the organisation’s productivity. Even if the organisation finds a replacement, it takes time for the new employee to familiar with the processes and procedures before they can be as productive as the employee who left.

Much of the current literature on strategic management pays particular attention to KM with a knowledge-based view (KBV). Knowledge is considered the most important strategic resource to ensure that the organisation achieves competitive advantage and superior
performance (Grant, 1996; Nonaka, 1994). Recently, several studies have shown that KM can be the right solution to address the above-mentioned challenges. For instance, Kianto et al. (2016) found that KM processes are associated with high job satisfaction and therefore they stress the need for implementing KM activities especially knowledge sharing to ensure job satisfaction. Wang and Yang (2016), on the other hand, explored the impact of KM on the productivity of SMEs in Taiwan.

Whilst SMEs play a significant role in the economic development of the nation, research on KM within SMEs is relatively limited when compared to large organisations (Durst & Runar Edvardsson, 2012; Massaro et al., 2016). Nevertheless, SMEs are not a scaled-down version of large organisations (Ale Ebrahim et al., 2010). SMEs not only differ in size from large organisations but tend to have different politics, structure and culture. As SMEs tend to have a higher degree of flexibility and agility, they will likely practice KM and learning strategies more easily (Valaei et al., 2017). Improved understanding of the relationship between KM and organisational performance in the context of SMEs would help SMEs to design KM practices for them to succeed in today’s dynamic business environment.

In recent years, much research on KM has concerned moderating variables. A wide variety of moderators such as leadership style, resource commitment and innovation capability has been proposed to interact with KM in affecting criteria variables (Chi et al., 2012; Mao et al., 2016; Migdadi et al., 2017). According to the dynamic capability view (DCV), organisations need to develop dynamic capabilities for them to respond and adapt quickly in a fast-changing environment characterised by high levels of uncertainty and change. EO, which is acknowledged as a dynamic capability, is particularly useful to identify and exploit new opportunities, as well as to reconfigure the organisation’s resources and capabilities (Griffith et al., 2006; Liu, et al., 2014).
Although much efforts have been devoted to the study of EO, studies regarding the moderating effects of EO are still lacking (Chavez et al., 2017; Liu et al., 2014). Rather, most research in EO has treated EO as a predictor to outcome variables such as firm performance (Engelen et al., 2015), firm growth (Altinay et al., 2016), innovation (Arzubiaga et al., 2018), export intensity (Fernández-Mesa & Alegre, 2015) and so on. The query “does EO moderate the relationship between KM and performance” seems to remain unanswered in the literature and thus needs a further assessment.

1.4 Research Objectives

The above discussions reveal that, although empirical studies have demonstrated the positive relationship between KM and desired organisational outcomes, the results are mostly based on investigations in the context of large organisations. This establishes a need for a further assessment of this relationship under different organisational settings, especially in the context of SMEs. A considerable amount of literature has been published on SMEs because of their economic and social value, but a KM model or framework specific to SMEs has not been identified. Drawing from KBV and DCV, this study seeks to address the identified gaps by investigating and providing empirical evidence on the interrelationships among multiple dimensions of KM process capabilities and organisational performance, with EO as a moderator. In order to achieve this main objective, three sub-objectives are formulated:

i. To assess the relationship between knowledge management process capabilities (knowledge acquisition, knowledge conversion, knowledge application, knowledge protection) and financial performance.