Impact of Knowledge Management Processes on Competitive Advantage: The Case of Multimedia Super Corridor (MSC) Companies in Malaysia

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ABSTRACT

This study examines the effect of knowledge management (KM) processes, specifically knowledge acquisition, conversion, application, and protection, on competitive advantage (CA) within Malaysian Multimedia Super Corridor (MSC) companies. Using a pre-tested survey questionnaire, data was collected from 122 MSC companies. The collected data was analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Path analyses results revealed significant and positive associations with CA exclusively for knowledge conversion and application, highlighting the critical role of these KM processes in shaping CA. This study contributes to the KM literature by providing empirical evidence on the impacts of individual KM process capabilities on CA. Practically, this study offers practical insights for industry practitioners, guiding them in the strategic enhancement and sustenance of CA through effective KM processes tailored to the MSC context.

INTRODUCTION

The Multimedia Super Corridor (MSC) program was established in 1996 with the aim of boosting Malaysia's digital economy and creating a self-sustaining intelligent city that offers an optimal business and living environment. The program seeks to enhance productivity, foster innovation, and improve the country's economic well-being through the use of digital technology. The significance of the MSC is underscored by its role in driving the growth and development of Malaysia's digital economy. This aligns with the country's broader economic strategy, as highlighted in the 12th Malaysia Plan, where the digital economy remains a key focus area. As of December 2021, the achievements of MSC companies are commendable, with notable contributions to Malaysia's economic landscape. They have generated RM653 billion in revenue, RM430 billion in investments, RM237 billion in exports, and created more than 198,686 jobs.

While MSC companies have played a significant role in creating jobs and attracting investment in Malaysia, they have not yet helped the country achieve its vision of becoming a world-leading hub for innovation (Saleh et al., 2020). Instead, it has achieved greater success in the development of lower value-added business support services, which are less likely to contribute significantly to overall incomes (Yigitcanlar and Sarimin, 2015). The primary challenge hindering the growth of MSC companies lies in the deficiency of proficient knowledge workers and innovation capacity (Ganapathy et al., 2020; Mustapha and Abdullah, 2004). With the continuous expansion of the market, there will be an escalating demand for both knowledgeable workers and enhanced innovation capabilities. Therefore, to realise Malaysia's aspiration of becoming a leading global tech hub, it is crucial to facilitate collaboration and idea exchange among knowledge workers, fostering the development of novel and innovative products and services (Mohamad et al., 2020).

The dynamic nature of MSC underscores the pivotal role of knowledge management (KM) within organizations. KM is characterised as the process of acquiring, converting, applying, and protecting an organization's information and intellectual assets (Ha et al., 2021; Gold et al., 2001; Mohamad et al., 2017). The integration of KM across all operational facets is essential for organizations as it serves as a conduit to connect individuals with the knowledge required to drive effective action (Alvarenga et al., 2020; Manesh et al., 2020). Previous studies indicate that businesses adept at acquiring and leveraging knowledge are more likely to attain a competitive advantage (CA) and achieve heightened performance levels (Rafi et al., 2022; Wijaya and Suasih, 2020; Zhao et al., 2022).

Since the early 1990s, Malaysia has been actively working on transitioning its economy into one that is knowledge-based, encouraging government agencies and businesses to embrace KM. However, over the past decade, comprehensive discussions on this concept within the context of Malaysian MSC companies have been lacking (Ganapathy et al., 2020; Pook et al., 2017). While some researchers have investigated the effects of KM on organizational outcomes such as firm performance, innovativeness, and job satisfaction in MSC companies (Alias et al., 2018; Chong, 2006; Mohamad et al., 2017), none of them, to the best of the authors' knowledge, has examined the impact of KM on CA within Malaysian MSC companies. Additionally, the existing body of literature often treats KM as a composite variable, posing challenges in assessing the effectiveness of individual KM processes (Malkawi and Rumman, 2016; Mohamad et al., 2020). Mills and Smith (2011) contend that not all KM processes directly contribute to business success. This assertion is reinforced by Ha et al., 2021), who discovered that, while knowledge acquisition, conversion, and protection significantly predicted business performance, the association between knowledge application and business performance was not statistically significant. The present study aims to fill the gap by integrating resource-based theory (RBT), knowledge-based view (KBV), and dynamic capabilities view (DCV) to systematically investigate the impact of various KM processes on MSC company's CA. The outcomes of this study can provide valuable insights for both academics and practitioners seeking strategic improvement and the sustained development of CA through the implementation of effective KM processes specifically tailored to the context of MSC.

LITERATURE REVIEW

This study is guided by several theories, namely RBT, KBV, and DCV. According to RBT, an organization's CA depends on the possession of valuable, rare, unique, and non-substitutable resources, including knowledge assets (Barney, 1991; Grant, 1991; Kazmi and Ahmed, 2021). KBV emphasizes the strategic significance of knowledge as an organizational asset (Grant, 1996; Nonaka, 1994). This theory underscores the importance of leveraging knowledge assets to enhance strategic capabilities, foster competitiveness, and achieve superior performance (Ha et al., 2021; Rehman et al., 2022). DCV emphasizes the importance of organizational agility and adaptability in responding to dynamic environments, with KM serving as a critical driver of dynamic capabilities (Teece et al., 1997). KM enables organizations to respond to environmental changes quickly and effectively, thus contributing to enhanced CA and overall performance.

Knowledge Management (KM)

According to RBT and KBV, knowledge is a crucial resource for achieving a sustainable CA (Barney, 1991). Knowledge is composed of data, expertise, and experiences that can be acquired, processed, and utilized to attain organizational objectives. It is essential to business strategies because it connects all information, allowing businesses to attain CA and superior performance (Ahmad et al., 2017; Rehman et al., 2022). As a result, the management of knowledge, also known as KM, is critical because it can streamline company knowledge, making it accessible and actionable for all organization members.

In the literature, various definitions of the KM process exist; however, for this study, Gold et al.'s (2001) acquisition, conversion, application, and protection processes were adopted. Gold et al., 2001) view KM as a collection of interconnected capabilities rather than isolated activities. This perspective ensures that organizations prioritise the development of a comprehensive and integrated approach for managing knowledge across the entire organization. Furthermore, the sample of this study consists of high-tech companies that deal with rapidly changing technology and intense competition. Knowledge leakage and imitation are significant problems among these companies. In this case, knowledge protection, which safeguards their critical knowledge from leakage or illegal use, is a crucial step that should not be overlooked (Bashir and Farooq, 2019; Ha et al., 2021; Hashimi et al., 2019).

Knowledge Acquisition and CA

According to Gold et al., 2001), knowledge acquisition is a vital KM process that enables organizations to accumulate and create new knowledge, which serves as a valuable foundation for the establishment of CA. Ferraris et al., 2017) assert that successful organizations frequently pursue a higher level of knowledge acquisition. Companies with a high level of knowledge acquisition are more likely to foster mutual trust and information-sharing norms among employees, encouraging effective communication and problem-solving through collaboration. This allows companies to develop new products more quickly than competitors, determine customer requirements, and evaluate current technology and product offerings. This knowledge is crucial for enhancing business processes and developing innovative solutions that lead to CA. Liao et al., 2017) concur that knowledge acquisition is a significant source of CA, particularly in the high-tech industry, as it can help overcome learning curve restrictions and accelerate product development. Based on these arguments, the following hypothesis is proposed:

H1: There is a positive relationship between knowledge acquisition and companies' CA.

Knowledge Conversion and CA

Knowledge conversion is a social process that entails activities aimed at transforming tacit knowledge into explicit knowledge, resulting in structured and effective organizational knowledge (Hislop; 2018; Nonaka, 1994). Prior research has emphasized the importance of possessing a framework or methods for organizing and configuring acquired knowledge, as without this, companies may accumulate an excessive amount of obsolete and superfluous knowledge that render it impossible to effectively manage their knowledge asset (Gold et al., 2001; Ha et al., 2021). This is particularly relevant in highly competitive industries where knowledge is frequently exchanged and integrated. Therefore, the conversion of knowledge into useful

information is essential for companies to achieve sustainable CA (Hashimi et al., 2019; Rehman et al., 2022). Once the knowledge has been effectively transformed, it can be utilized to enhance productivity, reduce costs, and refine products, resulting in sustainable CA (Mao et al., 2016; Yu et al., 2017). In light of the above, the following hypothesis is proposed:

H2: There is a positive relationship between knowledge conversion and companies' CA.

Knowledge Application and CA

Knowledge application refers to a set of activities that allow organizations to utilize and leverage knowledge in ways that optimize operations and generate new products and knowledge assets (Al-Nawafah et al., 2019; Gold et al., 2001; Hashmi et al., 2019). Research in the field of KM has shown that knowledge application has a significant positive impact on CA. Effective knowledge application is crucial, as it enables companies to enhance their problem-solving ability while reducing errors and costs, leading to increased CA. Empirical studies have shown that companies with knowledge application were able to achieve new product novelty, meaningfulness, new market access, and channel efficiency, all of which contribute to the development of CA (Rehman et al., 2022). Additionally, knowledge application enables companies to be more innovative, increasing the likelihood of developing unique products or strategies that result in CA (Im et al., 2020; Mohamad et al., 2020). Based on the evidence linking knowledge application and CA, the following hypothesis is proposed:

H3: There is a positive relationship between knowledge application and companies' CA.

Knowledge Protection and CA

When knowledge is rare, inimitable, and non-substitutable, it becomes a critical source of CA (Barney, 1991). To maintain a CA, companies must protect their essential knowledge from improper use or theft (Bashir and Farooq, 2019; Hurmelinna-Laukkannen et al., 2018). Research has shown that companies that are more effective in safeguarding their knowledge than their competitors have a higher likelihood of success (Erickson and Rothberg, 2014). Hashimi et al., 2019) found a substantial positive impact of knowledge protection on CA in a study involving 300 software company employees from Pakistan's main cities. Similarly, Manhart and Thalmann (2015) discovered that effective knowledge protection enhances CA by reducing competitor imitation. Ha et al., 2018) also found that knowledge protection was significantly and positively associated with the performance of small and medium-sized enterprises (SMEs) and recommended that businesses implement knowledge protection mechanisms such as patents, copyright, and trademarks to safeguard their essential knowledge and know-how. Collectively, these findings suggest that knowledge protection is likely to have a positive relationship with CA. Therefore, the following hypothesis is proposed based on the above arguments:

H4: There is a positive relationship between knowledge protection and companies' CA.

METHODOLOGY

This study employed a quantitative approach and an online survey to collect data. The target population comprised MSC companies situated in the Klang Valley (Kuala Lumpur/Selangor). The sampling frame was derived from the MDeC Directory, which is the most comprehensive database available and includes the most current list of Malaysian MSC companies. A purposive sampling method was employed, where samples were chosen based on three criteria: (1) they must be government-awarded MSC companies recognised by the MDeC; (2) they must be business entities such as private limited companies (Sdn Bhd), higher learning institutions or companies under the status of incubators; (3) their MSC status must still be valid at the time of the study. The minimum sample size required was calculated using priori power analysis in G*Power version 3.1.9.7 (Faul et al., 2007). According to the findings, a minimum sample size of 85 (n=85) was needed to achieve 80% power at a significant level of $\alpha = .05$.

The questionnaire was pre-tested with ten MSC companies to ensure that respondents fully comprehended the questions and that there were no mistakes that could lead to biased results. The pre-test results were excluded from the final sample. The management of the selected MSC companies received an invitation letter requesting permission for data collection. Those who expressed interest in participating were sent an email containing a survey link. In exchange for completing the questionnaire, a summary of the study's findings was promised to the participants. A total of 500 questionnaires were distributed, and 122 were returned over the course of three weeks after multiple reminders, yielding a response rate of 24.4%. The demographic characteristics of the respondents are summarised in Table 1.

Table 1 Demographic Characteristics of Respondents

Variables	Demographic Profile	Respondents (N=122)	Percentage (%)
Gender	Male	72	59.0
	Female	50	41.0
Age	22-30 years old	22	18.0
	31-40 years old	57	46.7
	41-50 years old	36	29.5
	51 & above years old	7	5.7
Education	Diploma	18	14.8
	Degree or professional qualification	80	65.6
	Postgraduate	24	19.7
Position	Chief executive officer	26	21.3
	Managing director	25	20.5
	General manager	49	40.2
	Others (junior manager/supervisor)	22	18.0
Years of Operation	2 years or less	4	3.3
	Between 3 to 5 years	35	28.7
	Between 6 to 10 years	52	42.6
	Between 11 to 15 years	15	12.3
	More than 15 years	16	13.1
Type of Organization	Malaysian-owned	93	76.2
	Foreign-owned	15	12.3
	50/50 Joint venture	14	11.5

Measures

The measures utilized in this study were all validated scales derived from previous research. Among these, the 16-item KM scale developed by Gold et al., 2001) was adapted, as cited in Ha et al., 2021). This scale comprises of four KM processes: acquisition, conversion, application, and protection, each evaluated using four items. All KM measures were captured using a seven-point Likert scale, ranging from 1 = strongly disagree to 7 = strongly agree. Furthermore, a six-item CA scale created by Chang (2011), as cited in Yu et al., 2017), was adapted to measure the extent to which a company outperforms its competitors in terms of product and service quality, R&D capability, managerial capability, profitability, corporate image, and competitiveness. All CA measures were captured using a five-point Likert scale, with "1" indicating much worse than competitors, "2" indicating worse than competitors, "3" indicating equal to competitors, "4" indicating better than competitors, and "5" indicating much better than competitors.

Common Method Variance

As the data was collected from a single source, there is a possibility of common method variance. To mitigate this, several procedural remedies have been implemented, including the use of different scale types and assurance of respondents' anonymity and confidentiality (Podakoff et al., 2003). Additionally, a Harman's single-factor test was conducted to determine the presence of common method variance. Common method variance is considered present if a single factor explains more than 50% of the total variance (Podsakoff et al., 2003; Podsakoff et al., 2012). In this study, the first factor accounted for only 39.53% of the total variance, indicating that common method variance was not an issue.

RESULTS

Assessment of the Measurement Model

This study used SmartPLS 4.0 for data analysis (Ringle et al., 2022). As shown in Table 2 and Figure 1, all composite reliability (CR) and Cronbach's Alpha values were greater than 0.70 and less than 0.95, providing evidence of the measurement model's internal consistency reliability (Hair et al., 2022). All factor loadings were also above the recommended 0.708, indicating that the indicator reliability was established. Furthermore, all average variance extracted (AVE) values were greater than the recommended 0.50, demonstrating that all constructs used in this study can explain more than half of their indicators' variance (Chin, 1998; Hair et al., 2022). Collectively, the results indicate that the measurement model is both reliable and valid.

Table 2 Summary of Construct Reliability and Validity

Construct	Items	Loadings	VIF	AVE	CR	Cronbach's Alpha
Knowledge Acquisition	KQ1	0.787	1.706	0.686	0.897	0.848
	KQ2	0.855	2.035			
	KQ3	0.822	1.942			
	KQ4	0.848	1.988			
Knowledge Conversion	KC1	0.877	2.388	0.671	0.891	0.836
	KC2	0.791	1.907			
	KC3	0.833	2.058			
	KC4	0.772	1.819			
Knowledge Application	KA1	0.809	1.890	0.598	0.856	0.776
	KA2	0.769	1.849			
	KA3	0.775	1.703			
	KA4	0.739	1.682			
Knowledge Protection	KP1	0.878	2.341	0.672	0.891	0.837
	KP2	0.795	2.017			
	KP3	0.816	1.882			
	KP4	0.786	1.799			
Competitive Advantage	CA1	0.749	1.741	0.603	0.901	0.868
	CA2	0.743	1.950			
	CA3	0.794	2.202			
	CA4	0.798	2.407			
	CA5	0.740	1.949			
	CA6	0.831	2.238			

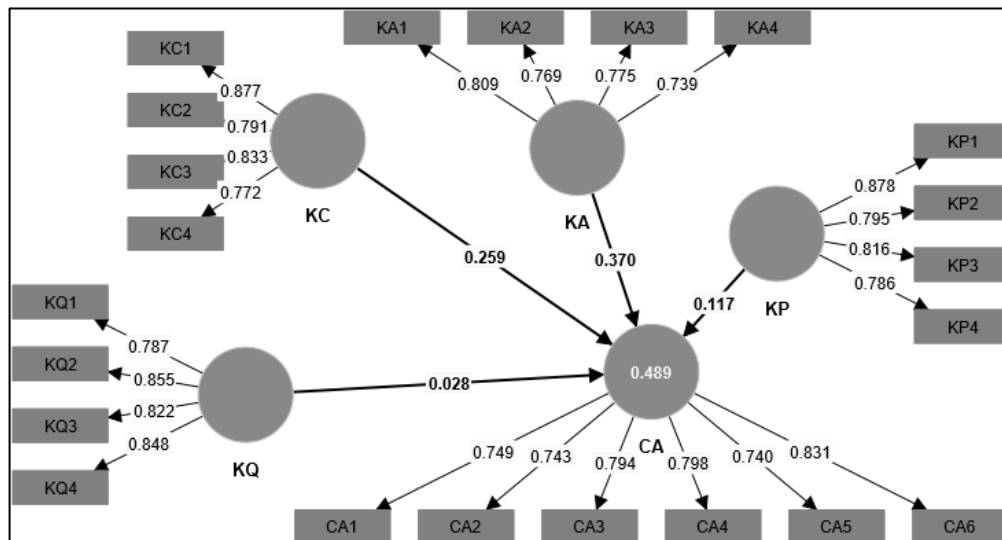Notes: AVE = Average Variance Extracted, CR = Composite Reliability

Figure 1 Results of the Measurement Model

To assess discriminant validity, this study utilized the Fornell-Larcker criterion and the heterotrait-monotrait ratio of correlations (HTMT) approach. The Fornell-Larcker criterion requires that the square root of the average variance (AVE) for each construct be greater than the correlations of any other construct in the model (Fornell and Larcker, 1981; Hair et al., 2022). The HTMT approach, on the other hand, considers discriminant validity to be adequate if the HTMT value is below 0.90 (Gold et al., 2001). The HTMT values

for this study ranged from 0.640 to 0.898, with all values falling below the suggested 0.90 threshold, as seen in Table 4.

Table 3 Discriminant Validity of Constructs

	1	2	3	4	5
1. Knowledge Acquisition	0.776				
2. Knowledge Conversion	0.658	0.774			
3. Knowledge Application	0.625	0.710	0.819		
4. Knowledge Protection	0.582	0.714	0.709	0.819	
5. Competitive Advantage	0.557	0.729	0.729	0.603	0.828

Table 4 HTMT

	1	2	3	4	5
1. Competitive Advantage					
2. Knowledge Application	0.795				
3. Knowledge Conversion	0.727	0.888			
4. Knowledge Protection	0.674	0.881	0.848		
5. Knowledge Acquisition	0.640	0.898	0.865	0.714	

Assessment of the Structural Model

The outcomes of the assessment of the structural model are detailed in Table 5, Table 6, and Figure 2. Initially, multicollinearity test was conducted by examining the variance inflation factor (VIF) values. The VIF values should not greater than 5.0 (Hair et al., 2022). In this study, all VIF values, as presented in Table 5 were below the threshold, with the highest VIF recorded at 2.943. This confirms the absence of multicollinearity in the data model. Subsequently, the model fitness was examined through the Standardized Root Mean Square (SRMR), where an SRMR below 0.08 is considered indicative of a good fit (Cho et al., 2020; Henseler, 2017). As depicted in Table 5, the SRMR was 0.069, signifying a satisfactory fit for our model.

Next, the statistical significance of the hypotheses was examined. The results indicated a non-significant association between knowledge acquisition ($\beta = 0.028$, $p = 0.403$) and CA, leading to the rejection of H1. Conversely, a significant positive link was observed between knowledge conversion ($\beta = 0.259$, $p < 0.05$) and CA, supporting H2. Similarly, a significantly positive relationship between knowledge application ($\beta = 0.370$, $p < 0.05$) and CA was established, supporting H3. However, the findings disclosed an insignificant connection between knowledge protection ($\beta = 0.117$, $p = 0.158$) and CA, resulting in the non-support of H4.

Furthermore, the effect size (f^2) was computed for each hypothesis to determine the strength of the correlations between the constructs. According to the rule of thumb, an f^2 value greater than 0.02 indicates a small effect, with values of 0.15 and 0.35 denoting medium and large effects, respectively (Cohen, 1988; Hair et al., 2022). The results indicated small yet acceptable effect sizes between knowledge conversion and CA, as well as between knowledge application and CA. Finally, the predictive capability of the model was assessed using three measures: Q^2, root mean squared error (RMSE), and mean absolute error (MAE). A Q^2 value greater than zero signifies adequate predictive relevance. For RMSE and MAE, values were computed for both the PLS-SEM model and linear model (LM). The PLS-SEM outcomes should have a lower prediction error, specifically in terms of RMSE or MAE, in comparison to the LM outcomes (Hair et al., 2019; Sharma et al., 2019). The PLS Predict results shown in Table 6 affirms that all criteria have been satisfied, suggesting that our model possesses adequate predictive power.

Table 5 Summary of Path Coefficients and Hypotheses Testing

	Relationship	β	p-value	Decision	f^2	VIF	R^2	SRMR
1	Knowledge Acquisition -> CA	0.028	0.403	Not Supported	0.001	2.642	0.489	0.069
2	Knowledge Conversion -> CA	0.259	0.011*	Supported	0.045	2.915		
3	Knowledge Application -> CA	0.370	0.003*	Supported	0.091	2.943		
4	Knowledge Protection -> CA	0.117	0.158	Not Supported	0.011	2.453		

Note: * $p < .05$, ** $p < .001$

Table 6 PLS Predict Algorithms Results

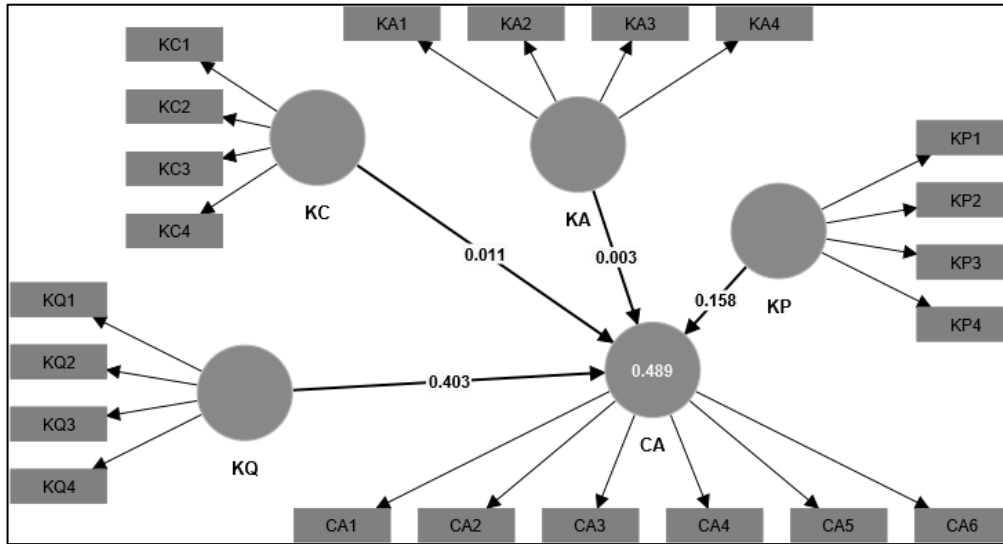| Items	PLS		LM		Q^2_predict
	RMSE	MAE	RMSE	MAE	
CA1	0.879	0.673	0.999	0.774	0.258
CA2	1.012	0.803	1.141	0.892	0.190
CA3	0.910	0.685	1.027	0.778	0.294
CA4	0.928	0.752	0.997	0.779	0.287
CA5	0.931	0.712	1.053	0.800	0.159
CA6	0.926	0.727	0.976	0.788	0.308

Figure 2 Results of the Structural Model

DISCUSSION

KM is widely acknowledged as a strategic tool facilitating organizations in achieving CA and improving overall performance (Wijaya and Suasih, 2020; Zhao et al., 2022). Nevertheless, earlier studies frequently combined all KM processes into a composite variable, introducing complexity in evaluating the unique impact of individual KM processes (Migdadi, 2022; Rafi et al., 2022). This study addresses this gap by specifically examining the influence of four pivotal KM processes—knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection—on CA. The findings indicate that knowledge conversion and application are significantly related to CA while knowledge acquisition and protection are not. Subsequent paragraphs provide a more in-depth discussion of the key findings of this study.

In line with previous studies, knowledge conversion exhibits a significant positive correlation with CA (Ha et al., 2021; Hashimi et al., 2019; Rehman et al., 2022). Organizations, through the effective implementation of knowledge conversion, can transform new ideas, insights, and experiences into valuable knowledge. This process empowers them to innovate and create products, services, and solutions that align with customer requirements (Nissen, 2019). Moreover, knowledge conversion fosters a robust organizational culture that prioritizes continuous learning and improvement. Encouraging knowledge sharing among employees cultivates an innovative atmosphere, driving ongoing enhancements in processes, systems, and products. The outcomes include heightened efficiency, productivity, and competitiveness, along with a deeper understanding of customer needs and market trends. These factors collectively bestow a CA, positioning companies favourably against their rivals (Yu et al., 2017).

Extending the findings from previous research, this study affirms the significant positive correlation between knowledge application and CA (Al-Nawafah et al., 2019; Im et al., 2020). These findings align with the principles of KBV and DCV, asserting that knowledge application serves as a dynamic capability enabling organizations to transform their knowledge assets into strategic actions fostering innovation, efficiency, and competitive prowess. Through creative knowledge application, organizations can pioneer novel products, services, or processes, thereby cultivating a distinct CA (Mohamad et al., 2020). Consequently, organizations

adept at applying knowledge exhibit enhanced adaptability to evolving environments and market dynamics (Rehman et al., 2022).

In contrast to previous findings by Bloodgood (2019) and Marczewska et al., 2020), this study did not uncover a significant positive relationship between knowledge acquisition and CA. One possible explanation is that Malaysian organizations may face challenges in efficiently acquiring relevant knowledge owing to their limited adoption of digital practices. A recent study highlights that only about one-third of Malaysian organizations have embraced digital transformation strategies, and fewer than one-quarter have established a dedicated digital strategy team (Izmir, 2021). Furthermore, Malaysia lags behind in the number of websites and secure servers compared to other nations, as indicated by a study from the World Bank Group (2021). This limited digital adoption may hinder organizations from effectively harnessing the wealth of information available online, potentially impeding their ability to align with evolving consumer behaviour trends. Without a robust understanding of consumer needs and preferences, organizations might struggle to deliver products and services that meet customer expectations, thereby hindering the achievement of a sustainable CA.

Furthermore, the findings uncovered no significant correlation between knowledge protection and CA. This finding diverges from previous research (Bashir and Farooq, 2019; Hashimi et al., 2019), which identified a strong and positive relationship between knowledge protection and CA. One potential explanation for this disparity may be the insufficient awareness of the importance of knowledge protection among Malaysian organizations. A study uncovered that only one-third of patent applications in Malaysia originate from local organizations, with the majority being filed by foreign organizations (Subramaniam, 2020). Moreover, a prevalent misconception persists among most Malaysian organizations that merely registering patents, brands, or copyrights suffices for safeguarding their knowledge assets. However, it's crucial for the organizations to recognise that intellectual property laws and rights are not universally applicable to all knowledge forms. To sustain their CA, companies must go beyond conventional intellectual property measures and embrace additional knowledge protection strategies. These may include aligning incentives, establishing regulations governing employee conduct, designing jobs to secure knowledge, or developing technologies that control and monitor access to critical knowledge.

MANAGERIAL IMPLICATIONS

This study contributes to the advancement of KM literature by individually investigating the impact of specific KM processes on CA. Departing from the conventional approach of aggregating KM processes into a composite construct, this nuanced analysis provides a more granular understanding of their distinct effects (Manesh et al., 2020; Mikovi et al., 2020; Sadq et al., 2020). Furthermore, by grounding the study in RBT, KBV, and DCV, this study integrates key theoretical perspectives. It bridges the gap between KM and strategic management, enhancing the theoretical foundation of both fields. As for practitioners, this study underscores the importance of dynamic capabilities facilitated by effective KM processes. Managers should recognise the varying impacts of different KM processes on CA. Prioritizing efforts on enhancing knowledge conversion and application, while addressing weaknesses in knowledge acquisition and protection, can strategically align organizational resources for sustainable CA.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This study contributes to better understanding of the complex relationships between KM processes and CA. However, there are several limitations that require consideration. Firstly, the study's concentration on MSC companies in the Klang Valley may limit the generalisability of findings to organizations in different cultural or organizational settings. Future research could include a broader sample across diverse regions to enhance external validity. Secondly, data collected from a single key informant per MSC introduces social desirability bias and common method bias. While measures were taken to mitigate bias, future research could incorporate multi-respondent surveys to enhance data reliability and comprehensiveness. Lastly, the study's cross-sectional design, while informative, offers only a snapshot of relationships at a single point in time. Therefore,

to gain a more comprehensive understanding and causal insights, future research could employ longitudinal data collection methods.

CONCLUSION

In conclusion, this study has delved into the intricate relationships between KM processes and CA within the dynamic context of MSC Malaysia. The discerning findings point to the critical roles played by knowledge conversion and application as primary drivers of CA. On the flip side, areas requiring concentrated enhancements in KM strategies were pinpointed in the realms of knowledge acquisition and protection. These outcomes not only contribute to the nuanced progression of KM theories but also furnish valuable managerial insights. For organizations navigating the complexities of MSC Malaysia, the study provides actionable guidance, offering a discernible pathway to leverage KM processes strategically for the cultivation of enduring CA.

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