

The Influence of Tacit and Explicit Knowledge Sharing on Organizational Performance among Manufacturing Companies in Malaysia

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Abstract

This study was conducted an exploratory study to investigate the extent to which tacit and explicit knowledge sharing affect organizational performance in Malaysia's manufacturing companies. The findings revealed that the study support positive relationship between tacit and explicit knowledge sharing and organizational performance (i.e., financial, quality, and innovative performance) which consistent as claimed in the previous studies. Tacit and explicit knowledge sharing were examined upon their relationship with organizational performance because they have been clarified as one of the most extensively researched issues since the early development of organizational theory. However, this study's result has found that tacit knowledge sharing did not have a significant relationship with innovative performance. For the methodology, this study applied quantitative approach through a self-administrated questionnaire and believed to be able to contribute to the importance of tacit and explicit knowledge as a fundamental source of knowledge sharing and a necessary precondition to boost a manufacturing company's performance. 145 samples of the companies were collected and analyzed using Partial Least Squares structural equation modeling technique. Thus, this study can reflect its current performance and represent the true position of manufacturing companies in Malaysia.

Keywords: Tacit and Explicit Knowledge Sharing, Organizational Performance, Manufacturing Companies.

Introduction

Malaysia's economic growth has advanced from industrial era into informational era of knowledge-based economy since the 1990s till recently. Services, manufacturing and agriculture sectors were the main drivers of the economy and Gross Domestic Product (GDP) growth for the year of 2021 in Malaysia (Department of Statistics Malaysia, 2020) even though Malaysia economy has suffered experiencing the impact of the COVID-19 epidemic. As shown in Table 1.1, Malaysia's GDP of manufacturing sector has contributed to RM135.3 billion or 14.5 percent from the overall sectors in Malaysia (Department of Statistics Malaysia, 2021). Total employees engaged in the manufacturing sector in 2021 (until September) was 2,231,406 persons. Salaries and wages paid amounted to RM7,478.8 million, and the average

salaries and wages per employee was RM3,351.60 in 2021. Meanwhile, the sales value per employee has achieved RM60,645 for manufacturing sector in Malaysia (Department of Statistics Malaysia, 2021). The Eleventh Malaysia Plan (RMK-11) has targeted a GDP annual growth of 4.3 to 4.8 percent in 2020 (2019: 4.3 percent or RM1,421.5 billion) to be driven mainly by the services and manufacturing sectors (Economic Planning Unit, 2020).

**Table 1. The Contribution of Manufacturing Sector in Malaysia
(For the Year of September 2021)**

Gross Domestic Product (GDP)	RM135.3 billion (14.5%)
Total Employees	2,231,406 persons
Salaries and Wages per Employee	RM7,478.8 million
Average Salaries and Wages per Employee	RM3,351.60
Sales Value per Employee	RM60,645

Source: Department of Statistics Malaysia (2021)

The issues of organizational performance have been debated in strategy research for decades and predominantly involved with business firms (Chan et al., 2017; Brundage et al., 2016; Lin & Wu, 2014). Organizations that are fueled by the increase in market competition and information technology advances are required not only to measure, assess, and improve their organizational performance throughout their manufacturing operations, but also to facilitate new products and technologies development to meet financial gains and sustainable competitive advantage (Dangelico et al., 2017). In the recent years, there has been a growing interest in the relationship between tacit and explicit knowledge sharing (Wang et al., 2017; Allameh et al., 2014; Alwis & Hartmann, 2008) and organizational performance (Calik & Bardudeen, 2016; Cegarra-Navarro et al., 2015; Camison & Villar-Lopez, 2014; Camison & Lopez, 2010) in the worldwide practical and theoretical circles. However, most of these fields have been studied in isolation and shown inconsistent findings.

Organizations often measure its performance from financial and non-financial perspectives (Abdel-Maksoud, 2004) which ultimately found to affect customer satisfaction and enhance organization's profitability (Ahuja, & Khamba, 2008; Pintelon et al., 2006). Non-financial aspects of organizational performance are needed because they could enhance capabilities in all aspects of its company's manufacturing processes and provide better information on specific capability before any uncertain financial investment to be allocated (Lin & Wu, 2014). Therefore, this study has applied theoretical model that focuses on the overall organizational performance, which involved financial performance, quality performance, and innovative performance because these perspectives are believed to display a cause-and-effect connection that will eventually lead to organization's profitability (Ittner & Larcker, 2003). This study applied Knowledge-based View (KBV) theory as the theoretical foundation to justify how organizations make use of their information-based resources to generate value-creating strategies and abilities that ultimately lead to higher level of organizational performance and achieve sustainable competitive advantage (Johannessen & Olsen, 2009; Conner & Prahalad, 1996).

In this study, tacit and explicit knowledge sharing are examined upon their relationship with organizational performance. Both of these knowledge concepts have been

clarified as one of the most extensively researched issues since the early development of organizational theory (Alwis & Hartmann, 2008; Balconi et al., 2007; Ancori et al., 2000). Despite some consensus, there are still substantial arguments on the definition and operationalization of tacit and explicit knowledge sharing for the long-term sustainable competitive advantage to increase firms' performance (Park et al., 2015; Allameh *et al.*, 2014; Bhuiyan, 2011). Therefore, this study was aimed to investigate tacit and explicit knowledge sharing as the primary strategic resource towards sustainability and expect to provide infinite possible solutions to the contemporary business environment and organizational performance enhancement.

Literature Review

Malaysia is aiming towards the fourth Industrial Revolution (IR 4.0), all businesses are working on leveraging the availability of capital, incentives, and modern infrastructure to optimize cost management and diversify business strategies with digitalization in order to capture the huge market demands (Lee, 2020). For Malaysia to become high-income country, human capital development and sustainable innovation are essential for growth, productivity, and inflows for foreign direct investment (FDI). As suggested by the 11th Malaysia Plan (2016-2020), labour productivity is expected to increase up to 3.8 percent per year. Unfortunately, numerous researchers have found that Malaysian industries, especially in manufacturing sector, are facing lower employment rate and deficiency in experienced, skilled, and quality-based labours to execute, implement, and monitor the overall manufacturing processes and management (Anuar et al., 2016; Nagulendran et al., 2016). This is also supported by the Malaysia Productivity Corporation (2021), whereby Malaysia's productivity performance and growth had evidence in the contraction of by -5.5 percent in 2020 due to the COVID-19 pandemic (as shown in Table 1.2) compared to 2.3 percent in 2019. This lower productivity performance due to the decelerated of capital deepening and intensity of the country, slowdown of the global trade, also lack of innovation among all sectors in Malaysia.

Table 2. The Growth of Malaysia's Productivity Performance

Year	Malaysia's Productivity Growth (%)
2013 (Financial Crisis)	-0.9
2014	3.4
2015	3.1
2016	3.1
2017	3.8
2018	2.3
2019	2.3
2020 (COVID-19 Pandemic)	-5.5

Source: Malaysia Productivity Corporation (2021)

Additionally, previous study has found that manufacturing companies in Malaysia are less likely to innovate due to the low level of innovation capability and insufficient internal resources to support their manufacturing systems, including its institutional mechanisms and technology infrastructures (Tarofder et al., 2017; Sidin & Sham, 2015). Moreover, many companies in Malaysia were found refuse to share knowledge within or outside of their organizations and less active in R&D collaboration between industries, universities, and public sector (Tarofder *et al.*, 2017; Omar et al., 2016; Ramli & Senin, 2015). These low companies'

capabilities have led to the overall manufacturing industry slowed down in its pace of economy expansion compared to other Asian economies. As emphasized by the Trading Economics (2020), Malaysia manufacturing industry has suffered the worst business conditions continued for six years since 2012 (decreased from 48.2 to 47.8, which has exhibited a below average index of 50 points). Such contraction index points have implied that manufacturing companies in Malaysia have incurred higher cost and lower quality in their production processes that ultimately decreased in the quality, innovative and financial performance (IHS Markit Malaysia Manufacturing PMI, 2021; Zahiid, 2019).

Tacit and explicit knowledge sharing are emerging as an essential concept and frequently cited as an important antecedent of innovation and organizational performance (Allameh *et al.*, 2014; Noruzy *et al.*, 2013; Ngah & Jusoff, 2009). However, the extent literature is insufficient to provide empirical evidence linking tacit and explicit knowledge sharing with organizational performance (Allameh *et al.*, 2014; Bhuiyan, 2011; Alwis & Hartmann, 2008). Wang and Wang (2012) have also agreed that there is little guidance in the extant literature as to what tacit and explicit knowledge sharing really mean in organization and how the knowledge sharing practices have direct influence on organization capabilities and firm performance. As stated by Hussain *et al.* (2015), different situation and requirements require different competitive capabilities and knowledge sharing initiatives to develop corresponding strategies within their organizations.

Organizational performance is operationally defined as the extent to which a company has improved or increased its overall company's performance in its market segment over the past three years, the measurements of the organizational performance include financial, quality and innovative performance (Maletič, Maletič & Gomišček, 2016). It is no longer considered as merely a measurement to succeed in manufacturing sector. It is seen as a holistic view and a synergy relationship with the overall organization's effectiveness, business performance, and financial performance. All of which set out to meet the needs of its stakeholders and survival (Ramayah *et al.*, 2011; Chu-Hua *et al.*, 2001). Simultaneously, it focuses on continuous improvement for quality purposes, ensuring employees' safety, and sustainability (Chan *et al.*, 2017; Lin & Wu, 2014). Therefore, this study highlights on the overall organizational performance, specifically on the financial, quality, and innovative performance of the manufacturing companies in Malaysia as these elements have the most influential impact towards improving the production quality, gaining competitive advantage, and achieving advantageous performance (Chan *et al.*, 2017).

This study provides a rationale from the previous literature support that the theory of and Knowledge-based View (KBV) is able to justify on how organizations make use of their limited organizational resources to generate value creating capabilities or competencies in order to sustain longer in the competitive markets (Nieves *et al.*, 2014; Mills *et al.*, 2003). Specifically, it is emphasizing on the information-based resources that provides infinite possible solutions and know-how in order to utilize and prolong the organization product-life cycle and bring environmental value to the society. It also produces information that are able to reduce the gaps of manufacturing issues (e.g., waste usage, negative environmental impacts and higher manufacturing costs) and knowledge about production sites peculiarities by applying tacit and explicit knowledge sharing to gain sustainable competitive advantage (Oyemomi *et al.*, 2016; Wang & Wang, 2012). Thus, this study explores the relationships

between tacit and explicit knowledge sharing, and organizational performance from a holistic perspective. The findings of this study have been attested using the theory of KBV.

Methodology

The proposed research framework was shown in Figure 1. Quantitative approach was applied in this research and a cross-sectional survey is carried out to examine the relationships between tacit and explicit knowledge sharing and organizational performance. The unit of analysis was organization because manufacturing companies in Malaysia have large amounts of sales value, manufacturing establishments and labour forces (Malaysian Investment Development Authority, 2018). The samples of 145 were drawn from the Federation of Malaysian Manufacturers (FMM) Directory through disproportionate stratified random sampling. Production managers were selected and requested as representative of manufacturing companies to answer the questionnaire as they possess capabilities in decision making, authority to act on behalf of the company and overseeing the entire organization manufacturing production and process. This research has applied two software for data analysis, which are the IBM Statistical Package for Social Science (SPSS) version 23 for data entry and the Partial Least Square Structural Equation Modeling (PLS-SEM) to process data analysis of measurement and structural models.

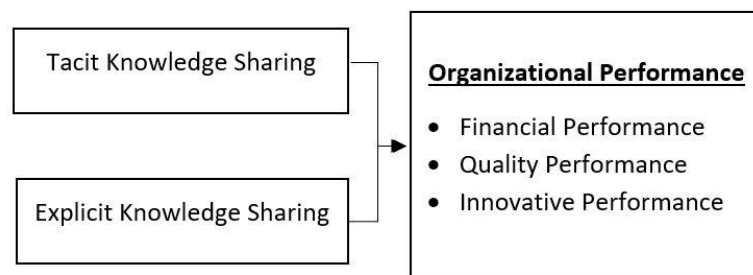


Figure 1. Theoretical Framework (Maletič *et al.*, 2016; Wang & Wang, 2012).

Results

Out of 145 respondents, 86.9 percent of the manufacturing companies were belonged to fully Malaysian, 9 percent were owned the organization ownership with local and foreign joint venture, and 4.1 percent were belonged to fully foreign owned. Most of the companies were more than 10 years of establishment in Malaysia's manufacturing sector, which consisted of 67.6 percent. The majority of the manufacturing companies (82.1%) were owned 100 and below employees, while only 13.8 percent were owned total employees in the range of 101 and 500 employees, and another 4.1 percent were 501 to 1000 employees.

For the 20 manufacturing sub-sectors identified by the Malaysian Investment Development Authority (2018), among the 145 respondents, three respondents (2.1 percent) were obtained from petroleum products (including petrochemicals) sector. Eight respondents or 5.5 percent were collected from electronics and electrical sector. For the sector of basic metal products, it had received 12 respondents with 8.3 percent. 9 percent from transport equipment sector, 0.7 percent from natural gas, 12.4 percent from food manufacturing sub-sector, 2.8 percent from chemical and chemical products, 4.8 percent from non-metallic mineral products, 8.3 percent from rubber products, 6.8 percent from plastic products, 8.3 percent from machinery and equipment, 8.3 percent from fabricated metal products, 5.5

percent from textiles and textile products, 7.6 percent from paper, printing and publishing, 6.8 percent from furniture and fixtures, 0.7 percent for leather and leather products, 1.4 percent from beverages and tobacco sector, and 0.7 percent from miscellaneous. There was no sample obtained for the scientific and measuring equipment sector and wood and wood products' sector.

As shown in Table 3, validity and reliability were first assessed by looking at the loadings, average variance extracted (AVE) and the composite reliability (CR). All the AVE were greater than 0.5, and the CR were greater than 0.7. All constructs' loadings have satisfied the criterion and well loaded on its construct as shown in Table 3, except one item (NP2) has showed the indicator's loading is not greater than 0.708. However, the item (NP2) is remained due to the formative construct of innovative performance to ensure the reliability of its indicators. Overall, all AVE and CR values had met the required cut-off values, it was concluded that the measurement had convergent validity and reliability.

Table 3. Results of Reliability – Loadings, Average Variance Extracted and Composite Reliability

Construct	Item	Loadings	AVE	CR
Tacit Knowledge Sharing	T1	0.874	0.669	0.834
	T2	0.812		
	T3	0.827		
	T4	0.781		
	T5	0.807		
	T6	0.826		
	T7	0.793		
Explicit Knowledge Sharing	E1	0.821	0.644	0.886
	E2	0.835		
	E3	0.811		
	E4	0.785		
	E5	0.763		
	E6	0.797		
Financial Performance	FP1	0.814	0.668	0.889
	FP2	0.810		
	FP3	0.835		
	FP4	0.809		
Quality Performance	QP1	0.834	0.679	0.894
	QP2	0.832		
	QP3	0.816		
	QP4	0.812		
Innovative Performance	NP1	0.851	0.869	0.890
	NP2	0.347		
	NP3	0.833		

To validate the formative measures of this research, convergent validity was assessed using redundancy analysis proposed by Chin (1998). As seen in Table 4, the formative constructs of financial performance, quality performance, and innovative performance formative measures have yielded path coefficients of 0.751 0.776, and 0.815. According to

Hair et al (2014), path coefficients result of more than 0.60 is acceptable if the study is exploratory in nature. Therefore, the formative measured constructs have sufficient degrees of convergent validity.

Table 4. Assessment for Formative Measurement

Construct	Indicator	Convergent Validity	Weight	t-Value	VIF
Financial Performance	FP1	0.751	0.414	2.884	1.971
	FP2		0.256	2.641	2.051
	FP3		0.281	2.316	2.105
	FP4		0.269	2.748	2.020
Quality Performance	QP1	0.776	0.315	2.305	2.680
	QP2		0.229	2.676	2.782
	QP3		0.325	3.005	2.599
	QP4		0.346	3.383	2.700
Innovative Performance	NP1	0.815	0.361	3.167	2.255
	NP2		0.505	2.984	1.446
	NP3		0.314	2.543	2.423

Next, discriminant validity was assessed in this research. Table 5 has shown each construct's AVE value is higher the values in their respective row and column, therefore all the constructs have met the criterion of discriminant validity.

Table 5. Discriminant Validity

Construct	Explicit KS	Financial Performance	Innovative Performance	Quality Performance	Tacit KS
Explicit KS	0.802				
Financial Performance	0.791	0.817			
Innovative Performance	0.749	0.800	0.832		
Quality Performance	0.784	0.793	0.731	0.824	
Tacit KS	0.756	0.769	0.703	0.709	0.818

Note: Diagonals represent the square root of the AVE while the off-diagonals represent the correlations

When the measurement model assessment is satisfactory, the next step is assessing the structural model. A bootstrapping of 500 resamples was analyzed to generate t-values of the constructs (as shown in Table 6). To test the in-sample predictive accuracy, R² values are analyzed. The R² values for financial performance, quality performance, and innovative performance are 0.870, 0.913, and 0.762, which indicate that all R² values are above the 0.75 value as substantial models suggested by (Cohen, 1988).

From the hypothesis testing table (Table 6), there are five developed hypotheses (i.e., H1, H2, H4, H5 and H6) posited each factor to have a positive effect on financial, quality and innovative performance. For Hypothesis H3, the result reveals that tacit knowledge sharing has no significant relationship with innovative performance. The statistical data shows $\beta = 0.153$ and the t-value is 0.619, which is not a significant value. Therefore, this hypothesis was not supported.

Table 6. Hypothesis Testing

Hypo	Relationship	Std Beta	Std Error	t-Value	BCI LL	BCI UL	Decision	f ²
H1	Tacit KS -> Financial Perf.	0.444	0.140	2.114*	0.127	0.559	Supported	0.181
H2	Tacit KS -> Quality Perf.	0.305	0.155	1.968*	0.018	0.472	Supported	0.157
H3	Tacit KS -> Innovative Perf.	0.153	0.146	0.619	-0.163	0.287	Not Supported	0.008
H4	Explicit KS -> Financial Perf.	0.450	0.166	3.504*	0.114	0.654	Supported	0.330
H5	Explicit KS -> Quality Perf.	0.402	0.152	2.635*	0.103	0.567	Supported	0.199
H6	Explicit KS -> Innovative Perf.	0.462	0.227	4.155*	0.222	0.793	Supported	0.362

Note: ** $p < 0.01$, * $p < 0.05$

Discussion

The findings indicated that tacit and explicit knowledge sharing had significant positive effects on financial, quality and innovative performance. Explicit knowledge sharing influenced the overall organizational performance (i.e., financial, quality and innovative performance) most significantly among manufacturing companies in Malaysia. These are consistent with previous findings which have proposed that explicit knowledge sharing is valuable to organizations' performance and would have a strong impact on business operations and enhanced strategic management (Adaileh & Abualzeat, 2017; Park *et al.*, 2015). Furthermore, Yusof, Ismail, Ahmad and Yusof (2012) elucidated that firms with effective explicit knowledge sharing are more likely to make better use of resources and so will exhibit superior outcomes such as more innovation and superior financial performance.

For the relationship between tacit knowledge sharing and innovative performance, this study was surprisingly found that Hypothesis 3 (H3) was not supported. As clarified by Wang and Noe (2010), knowledge collectively create and disseminate within groups in an organization but there is no guarantee that knowledge would be exploited or disseminated within a wider community which knowledge might become fragmented. Gupta (2017); Ramayah *et al.* (2013) have added that the formal structure of most companies prevents knowledge management from operating due to the institutional and cultural barriers that impede knowledge flow. Another possible reason is the failure of the organization's community to understand and connect tacit knowledge sharing into employee's daily work activities (Omar *et al.*, 2016).

In addition to this, part of the respondents has argued that their companies are practicing some kind of authoritarian leadership style, which the companies have avoided or restricted their employees from any unnecessarily participation. Meanwhile, some respondents are claiming that they are having poor relationship between the managers and employees. Based on these facts, there are some manufacturing companies in Malaysia that have poor interactions between knowledge infrastructure and community in their respective organizations. The government and related authorities should take strategic, ambitious, and

expeditious approaches for Malaysia's companies, especially small and medium size enterprise to support the innovation economy.

Many studies have agreed that that tacit knowledge sharing can be a critical competitive tool that could substantially support and foster enterprise adaptation, survival, and enhance financial performance (H1) (Chan & Abdul-Aziz, 2017; Kasbun et al., 2016). As Ganguly, Talukdar and Chatterjee (2019) further explain that tacit knowledge sharing is perceived to be an important intangible capability for effective operations, innovative, and quality performance, which ultimately lead to higher firm financial performance. Therefore, increasing financial performance should be the key focus of every manager in every enterprise and need to establish a comprehensive measurement index that provides managers and employees with clear directions and goals set by the organization (Ameer & Othman, 2012; March & Sutton, 1997).

For the Hypothesis 2 (H2), there is a positive relationship between tacit knowledge sharing and quality performance among manufacturing companies in Malaysia, which conclude this hypothesis was supported. As support by Roy and Mitra (2018); Ahmed et al (2017) that tacit knowledge sharing has become the key for economic resource and dominant, and plays a vital role for efficiency and effectiveness in organizational operations. Managers who have always been aware of the need to utilize and develop tacit knowledge sharing could lead to higher quality performance (Blümm, 2013). Thence, organizations should initially increase the competencies of employees and how they are combined into organizational capabilities including training and development, empowerment, and involvement in the decision-making process in order to enhance the quality performance of their organizations (Uyar, 2009; Balconi et al., 2007; Ancori et al., 2000).

This research was found that there is a significant positive relationship between explicit knowledge sharing and financial performance (H4). This result was persistent with previous research that firms with effective explicit knowledge sharing would enhance in knowledge management of an organization which gradually evolves and improves the production systems. Ultimately, it could induce cost-saving and lead to competitive advantage and achieve higher financial performance of the organization (Allameh et al., 2014; Fathi et al., 2011). Geisler and Wickramasinghe (2009) also explained that when organizations emphasize organizational knowledge sharing activities by engaging employees in knowledge-related activities, creative ideas are generated that enhance organizational innovation and strive for financial gain. Therefore, this hypothesis has proved as a guideline to manufacturing companies on emphasizing the importance of explicit knowledge sharing practices in Malaysia.

Meanwhile, the hypothesis of H5 was found supported relationship or there is a positive relationship between explicit knowledge sharing and quality performance among manufacturing companies in Malaysia. Many empirical researches have agreed that organizations are practicing explicit knowledge sharing which related to the knowledge sharing approach of having written documentation that can be organized, recorded, processed, shared and kept in a system (Yusof et al., 2012; Fathi et al., 2011). Explicit knowledge sharing promotes diffusion of knowledge and contributes to knowledge workers. They could obtain the knowledge assets of an organization to make organizational processes proficient and apply it to complete their works effective and efficiently. Consequently, this requires intensive knowledge which have led to higher quality performance (Ismail & Yusof, 2010; Lee et al., 2005). However, Zeng et al (2015) have recommended that explicit knowledge sharing requires social interactions between the employees in the organization in

a manner that facilitates explicit knowledge sharing, and managers must promote positive training and development in employees by engaging them in the processes of operations and production system, which will eventually lead to higher quality performance.

Lastly, there was a positive relationship between explicit knowledge sharing and innovative performance among Malaysia's manufacturing companies. In other words, there was a supported direct relationship of Hypothesis H6. This result has stood alongside with previous studies (Adaileh & Abualzeat, 2017; Saenz, Aramburu & Blanco, 2012), which indicate that explicit knowledge sharing would be very helpful in order to enhance knowledge creation and subsequent improve innovative performance among manufacturing companies in Malaysia (Ooi et al., 2012). In addition, this result has found that the respondents are gaining a deeper understanding of the explicit knowledge sharing of their companies and perception of the innovative performance of the companies has gradually increased. Some respondents were managed explicit knowledge sharing practices as their companies' core activities to integrate useful information and specialization in order to offer higher innovative performance and sustainable competitive advantage (Alwis & Hartmann, 2008; Kogut & Zander, 1993).

Conclusion

The analyses of this research have yielded positive results, even though not all statistically significant. It was evident that the literature supports the hypotheses that Malaysia's manufacturing companies that practice tacit and explicit knowledge sharing are expected to achieve high performance results. Moreover, the theory of knowledge-based view (KBV) could be the solid structures on supporting this study's theoretical framework and capable to justify the research problem of this study. Hence, this research has achieved its purposes and managed to answer the research questions and objectives based on the findings and justifications. Overall, the results have supported the existing theory of KBV.

The current study seems to overhaul manufacturing companies with diminished sub-sectors in Malaysia. Future study might look at or focus on specific sub-sectors especially those that Malaysia is strong at to compete globally. Other competitive and top manufacturing sectors outside of Malaysia that could be treated as precedent such as Guangdong, Zhejiang and Jiangsu in China, Bharuch and Ludhiana in India, and special economic zones (SEZs) in Indonesia should be investigated for future research. These important manufacturing hubs are recommended and believed to be able to contribute valuable findings toward Asia manufacturing research.

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