## The zeitgeist of knowledge management in this millennium: Does KM elements still matter in nowadays firm performance?

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| CHRONICLE | ABSTRACT |
|---|---|
| | The study on knowledge management is in waning trend, which caters less interest in scholars to discuss recently. The area that received widespread attention previously has unlikely become an old-fashioned term which perceived as less important among few organizational researchers. Looking to the trend, the researcher takes an evaluative step to examine whether Knowledge Management is still relevant for organizations nowadays by studying the impact of knowledge management on organizational business performance. The study was conducted in 2016 and it was involved companies in electrical and electronic sector located in Malaysia. In this study, knowledge management was formed from three elements including knowledge acquisition, knowledge sharing and knowledge utilization. A total of 287 questionnaires were collected from electrical and electronic companies in Malaysia. The finding shows that among all those three knowledge management elements, only knowledge acquisition and knowledge utilization were still relevant to organizational business performance in Malaysia nowadays, whereas knowledge sharing was perceived to be less important. The findings of this study provide insight into the importance of knowledge management in organizational business performance. |

## 1. Introduction

The electrical and electronics (E&E) industry is the leading sector in Malaysia's manufacturing sector since nation independence (MIDA, 2019). In Malaysia, this industry continues to be a key driver of industrial development and contributes significantly to Gross Domestic Product (GDP) growth, investment, export earnings and employment (Malaysian Investment Development Authority, 2018; MITI, 2015) which accelerates the economic growth of the country. Thus, according to Ministry of International Trade and Industry (2015), the main objective of E&E industry is to drive the country toward high-income economy by concentrating in high-growth and high-value manufacturing processes. Although Malaysia aims to be high-income country in 2020, however, there are some challenges such as gaps in productivity and competitiveness which trapped Malaysia in middle-income country (PEMANDU, 2016). Moreover, E&E industry is also facing significant challenges in maintaining growth with other growing competition from other Asian countries such as China and Singapore. Nowadays, every single business organization is focusing to achieve excellent business performance. But, there are many organizations to have difficulty to meet their desired business performance as they trapped in market challenges, and they are not able to react quickly and transform the problem into their own competitive advantage (Abu Jarad, Yusof, & Shafiei, 2010; Loke, Abu, & Lim, 2018). Additionally, the increasingly turbulent and competitive environment had led to the recognition of

knowledge as the main source of competitive advantage of an organization (Matusik & Hill, 1998). The way to manage knowledge effectively is also becoming an important issue for organizations to meet their objectives and hit their superior business performance (Chen & Huang, 2007; Wei-Kit & Hidayah, 2017). Organization management obliged to counter with the environmental change, meet the needs and wants from customers, control working procedures in order to improve business performance (BP) and lastly the community contribution (Rekarti & Doktoralina, 2017; Yao, Yang, Fisher, Ma, & (Er) Fang, 2013). There are two different leanings in manufacturing BP including practice-based and performance-based (Kennerley & Neely, 2003; Loke et al., 2018). Practice-based performance has been widely practiced as business organization result indicator (Jianguo, Antonio, Alberto, & Xumei, 2020).

Additionally, researchers have recognised that Knowledge Management (KM) is being practised in different industries due to the imperative nature of knowledge and expressive range of BP (Loke & Abu, 2017a; Suraj & Ajiferuke, 2013; Tseng, 2014; Yang, Chen, & Wang, 2012). KM is well defined as the function that supports organization on acquiring important information, sharing and utilizing them. It is also a proficiency of essential action like problem solving, decision making and dynamic learning and growth (Nazari & Emami, 2012). However, KM does not eliminate to single area but there are multi discipline of people working on it. The approach of KM in Malaysia is in the beginning stage. The process of implementing still ongoing until there are formal approaches which are generally recognized (Anand & Singh, 2011). Knowledge is a key asset for control, and enhancement of the organizational business performance. Therefore, since 1990s, the accomplishment of good business organizations is decisively acknowledged through managing information and knowledge (Liao & Wu, 2010; Wiig, 1997). Thus, the existing issue in knowledge fields for the BP is the manner by which to create and achieve it (Asare, 2008; Rhodes et al, 2008). Therefore, understanding the needs of KM is very important for business organizations to approach them to adopt KM (Wang & Wang, 2012; Wei-Kit & Hidayah, 2017). Therefore, the purpose of this study is to examine the factors of KM influencing the BP in Malaysian E&E industry.

## 2. Literature review

### 2.1 Knowledge management

Knowledge is the most intangible assets which business managers need to strive to use this asset to generate the highest values of organization (Loke & Abu, 2017a; Tseng, 2014; Wei-Kit & Hidayah, 2017). The complications of knowledge structure within the nature of knowledge composition, KM targets to enhance the capability, competence and efficiency of the knowledge asset management (Inkinen, Kianto, & Vanhala, 2015). Yet, there is still an absent of single definition that can sum up the whole picture of KM whereas there are several authors categorized KM into different dimensions according to the way they define it (Loke & Abu, 2017b; Zwain, Teong, & Othman, 2012). To meet the long-term business development of organization, knowledge is one of the main business managements in competitive strategy. Therefore, the KM strategies which include knowledge creation for sharing and utilization are essential for managing the knowledge assets (Loke & Abu, 2017a; Mahmoudsalehi, 2012). Furthermore, some researchers recognised that KM is the key factor that influence BP, where they have investigated the commitment of KM towards BP (Al-Tit, 2016; Alrubaiee, Alzubi, Hanandeh, & Ali, 2015; Gholami, Asli, Nazari-Shirkouhi, & Noruzy, 2013). There are a lot of studies that categorized KM in several dimensions such as Zheng, (2005) who examined three dimensions of KM including knowledge acquisition, knowledge sharing and knowledge utilization in his study. Moreover, Chobdar, Naseri, Bazmi and Masuminejad (2016) categorized KM into knowledge acquisition, knowledge sharing and knowledge application. Anyhow, Yusof, Hassan and Bakar (2012) indicated that there are not any mutually extents of KM. For instance, Hsiao et al. (2011) adopted only two dimensions which are knowledge acquisition and knowledge dissemination in their conceptual model to evaluate KM. On the other side, Chobdar et al. (2016), Kör and Maden (2013), Theriou and Chatzoglou (2009), and Zheng (2005) recognised that there are three dimensions including knowledge acquisition, knowledge sharing and knowledge utilization which are the main practices for KM. Therefore, this study has adapted them into a model where:

***Knowledge acquisition***: The capability of an organization to identify, acquire and accumulate knowledge, whether internal or external, is important for the organization's operation (Mills & Smith, 2011); ***Knowledge Sharing:*** Behaviour to provide others knowledge and receive knowledge from others (Said, 2015);  and ***Knowledge Utilization***: Include activities that are associated with the apply, use and implementation of knowledge in organizational processes (Haghighi, Tabarsa, & Kameli, 2014).

### 2.2  Business Performance

An excellent BP is important to every manager in an business organization and the measurement of BP refer to systematic process of effectively and efficiently quantifying an action or concept (Loke et al., 2018; Neely, Richards, Mills, Platts, & Bourne, 1997). Therefore, in order to enhance organizational BP, it is important for an organization to set up a comprehensive measurement index that enables managers and employees to have clear direction and goals for them to accomplish (Tseng, 2014; Wei-Kit & Hidayah, 2017). However, according to Gholami et al. (2013), Kaplan and Norton (1992), there are no unanimously agreed measures that can provide a clear organizational BP. Previous studies have measured BP in terms of

multidimensional constructs such as financial, non-financial, operation, etc. (Wei-Kit & Hidayah, 2017). In this study, measurement items from balance score card (BSC) which includes financial perspective, customer perspective, internal process perspective and learning and growth are applied to measure the BP. This is because BSC focuses not only on financial but also on non-financial related measurement, long-term, mid-term and transient arrangements, and in-house and outside BP dimensions (Kaplan & Norton, 1992).

## 2.3 Theoretical Framework

Fig. 1 illustrates the theoretical framework of this study. It explains the relationships between KM and BP. Based on the framework, there are three dimensions included into KM which are knowledge acquisition, knowledge sharing and knowledge utilization. The KM dimensions are expected to have relationship with BP in Malaysia's E&E industry. Moreover, the relationships of all independent variables are expected to have positive influence the dependent variable in this study. The hypotheses for the study are discussed in following sections.
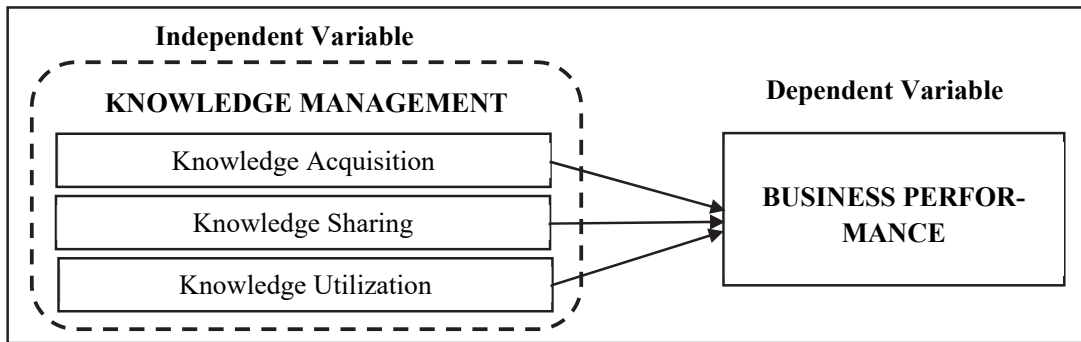


**Fig. 1.** Theoretical Framework

## 2.4 Relationship between Knowledge Management and Business Performance

In previous studies, there are several examinations on the relationship between KM and BP in different countries that involved in several types of industries such as construction (Yusof et al., 2012), financial institution (Nafei, 2014; Nawab, Nazir, Zahid, & Fawad, 2015), small and medium enterprise (SMEs) (Gholami et al., 2013; Ha, Lo, & Wang, 2016), food industry (Radzi, Jenatabadi, Hui, Kasim, & Radu, 2013), education industry (Zwain et al., 2012), E&E industry (Wei-Kit & Hidayah, 2017) and manufacturing industry (Al-Tit, 2016). For instance, Shehata (2015) investigated the influence of KM towards the organizational BP in the field of IT and communication industry in Egypt. The researcher found that dimensions of KM which are knowledge creation, knowledge acquisition, knowledge codification, knowledge sharing and knowledge transfer significant influence BP (Fawad, Omar, Adeel, Farooq, & Waqar, 2020). Moreover, SEM analysis was employed to examine the total of 168 companies in food industry in China, Taiwan and Malaysia by Radzi et al. (2013), and Al-Tit (2016) who investigated managers working in different management levels within a manufacturing industry and found a significant relationship between KM and BP. Radzi et al. (2013) found that knowledge acquisition, knowledge conversion and knowledge application significantly influence BP. While Al-Tit (2016) found that knowledge creation, knowledge sharing and knowledge utilization significantly influence BP. Therefore, they revealed that KM could have positive relationship on the manufacturing organizations in BP. On the other hand, there are also other studies found that BP greatly influenced by KM. Gholami et al. (2013) who performed an investigation on 282 senior managers from SMEs involved in the fields of food, textile, pipe and faucet, electronic and clothing found a significant effect of knowledge acquisition, storage, creation, sharing and implementation on BP. Besides, Ha et al. (2016) carried out a study on SMEs in Malaysia and discovered knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection brought positive influence to organization performance. Furthermore, Zwain et al. (2012) investigated the relationship between KM where the dimensions of knowledge identification, knowledge acquisition, knowledge store storage, knowledge sharing and knowledge application had significant effect on the academic performance in Iraqi higher-education institution. The commercial banks in Egypt also found that knowledge creation, knowledge acquisition, knowledge organization, knowledge distribution and the utilization of knowledge have significant influence on BP (Nafei, 2014). Additionally, dimensions of KM which include knowledge creation, knowledge organizing, knowledge storage, knowledge sharing and knowledge utilization show significant relationships with overall BP in financial institution in Pakistan (Nawab et al., 2015). Therefore, the hypothesis for this study is as follows,

**H1:** *Knowledge management will have significant and positive effect on the business performance of electrical and electronic industry in Malaysia.*

    **H1a:** *The knowledge acquisition will positively influence the business performance.*

    **H1b:** *The knowledge sharing will positively influence the business performance.*

    **H1c:** *The knowledge utilization will positively influence the business performance.*

## 3. Research methods

This research employs quantitative approach to investigate the influence of knowledge management (KM) toward business performance (BP) in E&E companies in Malaysia. A self-administered survey was directed in this study since the survey can be completed with no intercession from intervention from the researcher (Wolf, 2008). Consequently, out of 550 distributed questionnaires, a total of 287 mid-level managers on E&E industry in Malaysia participated in this survey. Middle managers were chosen as respondent since they were known as "Knowledge Engineer" in literature who were responsible to acquire knowledge from top manager and front-line manager. They also play a key role in KM implementation (Nawab et al., 2015). Along with these lines, systematic random sampling technique was utilized as a part of randomly sampling E&E manufacturing companies in Malaysia (Sekaran & Bougie, 2013). Moreover, in order to investigate the response from respondents, a five-point Likert scale was applied for every measurement items in order to make respondent easy to answer and report their perceptions regarding to KM toward BP (Brace, 2004; Uma Sekaran & Bougie, 2010). After the collection of data, the data was analysed by using Statistical Package for Social Sciences (SPSS) version 20.0 and SmartPLS 2 M3.

## 4. Data analysis and results

### 4.1 Analysis of the Measurement Model

The assessment of the measurement model or outer model is the first step in partial least square structural equation modelling (PLS-SEM) analysis. Prior to any model examination or hypotheses testing, the validity of the measurement model needs to be determined. This involved examining whether the instruments measure what they are intended to measure.

First, researchers begin with the test of the convergent validity. Convergent validity is referred to the degree to which the items represent the latent construct accurately and correlate with other measures of the same latent construct correctly (Hair et al., 2006). With regard to identifying an element of convergence in the measurements of the construct, factor loading of at least 0.50, average variance extracted (AVE) with a threshold value of 0.50 and above, composite reliability values of at least 0.7 are needed to establish the convergent validity (Hair Jr, Hult, Ringle, & Sarstedt, 2016).

**Table 1**
The Convergent Validity Assessment Results

| Model Construct | Measurement Item | Loadings | AVE | Composite Reliability |
|---|---|---|---|---|
| KKA | KKA1 | 0.7243 | 0.5238 | 0.8144 |
| | KKA2 | 0.6622 | | |
| | KKA3 | 0.7467 | | |
| | KKA5 | 0.7580 | | |
| KKS | KKS1 | 0.7202 | 0.5958 | 0.8804 |
| | KKS2 | 0.8107 | | |
| | KKS3 | 0.7567 | | |
| | KKS4 | 0.7871 | | |
| | KKS5 | 0.7817 | | |
| KKU | KKU1 | 0.8182 | 0.7030 | 0.9221 |
| | KKU2 | 0.8345 | | |
| | KKU3 | 0.8233 | | |
| | KKU4 | 0.8496 | | |
| | KKU5 | 0.8658 | | |
| BP | BP3 | 0.7682 | 0.6800 | 0.9674 |
| | BP4 | 0.7747 | | |
| | BP5 | 0.7429 | | |
| | BP6 | 0.7748 | | |
| | BP7 | 0.843 | | |
| | BP8 | 0.8646 | | |
| | BP9 | 0.8827 | | |
| | BP10 | 0.8448 | | |
| | BP11 | 0.8447 | | |
| | BP12 | 0.8547 | | |
| | BP13 | 0.8557 | | |
| | BP14 | 0.8289 | | |
| | BP15 | 0.8209 | | |
| | BP16 | 0.8300 | | |

*Note*: Composite Reliability **(CR)** = (square of the summation of the factor loadings) / [(square of the summation of the factor loadings) + (square of the summation of the error variances)]; Average Variance Extracted **(AVE)** = (summation of the square of the factor loadings) / [(summation of the square of the factor loadings) + (summation of the error variances)]. Where, the 'KKA' abbreviation refers to knowledge acquisition, KKS = knowledge sharing. The 'KKU' abbreviation refers to knowledge utilization. The 'BP' abbreviation refers to business performance.

According to Table 1, the loadings of all items are more than 0.5, and all the values of AVEs are more than 0.5. Besides, the composite reliability values of the constructs exceeded the cut-off value of 0.7. Therefore, researchers have confirmed that the measurement of outer model possesses an adequate level of convergent validity.

Next, discriminant validity was employed to investigate the extent of which one construct is actually different from another construct (Hair, Black, Babin, & Anderson, 2009). Discriminant validity is established when the value of the square root of AVE of each construct is higher than the construct's highest correlation with any other latent construct (Hair Jr et al., 2016). Hence, in this study, the evaluation of discriminant validity can be evaluated by comparing the square root of the AVE for each construct with the correlations presented in the correlation matrix. Table 2 shows that the square root of AVE in bold is greater than its highest construct's correlation with any other constructs. Thus, it is concluded that discriminant validity on the construct has been established.

**Table 2**
Discriminant Validity of Constructs

| Constructs | BP | KKA | KKS | KKU |
|---|---|---|---|---|
| **BP** | **0.826** | | | |
| **KKA** | 0.498 | **0.724** | | |
| **KKS** | 0.470 | 0.713 | **0.772** | |
| **KKU** | 0.536 | 0.599 | 0.726 | **0.839** |

*Note*: Where, the 'KKA' abbreviation refers to knowledge acquisition, KKS = knowledge sharing. The 'KKU' abbreviation refers to knowledge utilization. The 'BP' abbreviation refers to business performance.

*4.2 Analysis of the Structural Model*

The central criterion for the assessment of the structural model is the coefficient of the determination $R^2$. With a value of 0.336, the $R^2$ of the endogenous latent variables of 'Knowledge Management' indicates a substantial level as shown in Fig. 2.
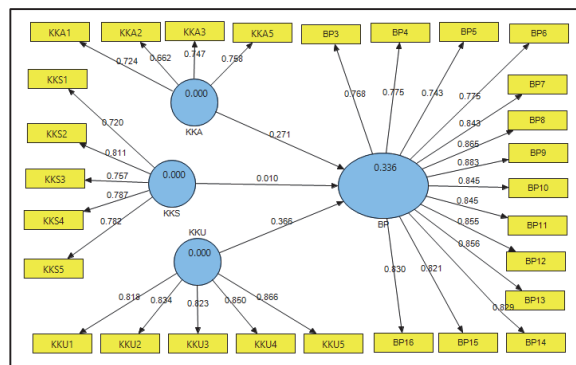


**Fig. 2.** The First Order Structural Model for Individual Latent Variable
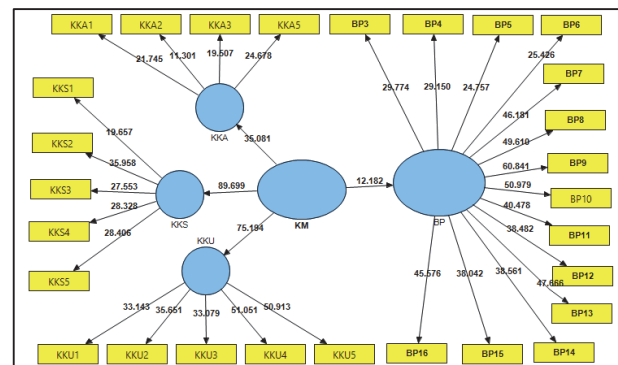


**Fig. 3.** The Second Order Structural Model for Main Latent Variable

*Note*: Where, the 'KKA' abbreviation refers to knowledge acquisition, KKS = knowledge sharing. The 'KKU' abbreviation refers to knowledge utilization. The 'KM' abbreviation refers to Knowledge Management, and the 'BP' abbreviation refers to business performance.

After the confirmation of the goodness of the outer model, the following stage was to examine the hypothesized relationships among the constructs. Bootstrapping technique with 5000 samples or resampling with the number of cases equal to the observations out of 287 cases was used to the test whether hypothesis was statistically significant or not. More specifically, the t-values with each beta value and standard error were produced using the bootstrapping technique, as indicated in Fig. 3 and Table 3. Fig. 3 illustrates the path model, T value for each relationship for the main effect mode. Table 3 shows the summary of hypothesized structural relationship between Knowledge Management and Business Performance.

**Table 3**
Result of Hypothesis Testing

| Hypotheses | Relationship | Beta Value | Standard Error | T Statistics | Supported |
|---|---|---|---|---|---|
| *$H_1$* | **KM → BP** | **0.562** | **0.046** | **12.18** | **Yes** |
| *$H_{1a}$* | KKA → BP | 0.272 | 0.064 | 4.28 | Yes |
| *$H_{1b}$* | KKS → BP | 0.010 | 0.069 | 0.15 | *No* |
| *$H_{1c}$* | KKU → BP | 0.366 | 0.068 | 5.35 | Yes |

*Note*: *Significant at p<0.05 at two-tailed T statistics value of 1.96.*
Where, the 'KKA' abbreviation refers to knowledge acquisition, KKS = knowledge sharing. The 'KKU' abbreviation refers to knowledge utilization. The 'KM' abbreviation refers to Knowledge Management, and the 'BP' abbreviation refers to business performance.

Results of this study have shown that knowledge management had a positive and significant effect on business performance of E&E industry in Malaysia at the 0.05 level of significance ($\beta = 0.562$, t = 12.18, p < 0.05). Thus, $H_1$ is supported. Moreover, from three of the dimensions of knowledge management, it was found that knowledge acquisition and knowledge utilization significantly influence the business performance of E&E industry with T value at 4.28 and 5.35. Statistically, knowledge utilization has the greatest influence on business performance with a beta value of 36.6 percent, and knowledge acquisition

only generated a beta value of 27.2 percent at a significant level of p<0.05. On the other hand, the knowledge sharing did not indicate any significant influence to E&E's business performance in Malaysia. Therefore, H1a and H1c were supported while H1b was not supported.

## 5. Discussion

The main purpose of this study was to investigate the effect and relationships among KM dimensions toward the BP empirically among mid-level managers in E&E industry which located in Malaysia. The overall results have shown a strong and positive relationship of KM and BP in E&E industry perspectives. The finding of the relationship of KM and BP is consistent with those of previous research (Al-Tit, 2016; Gholami et al., 2013; Nafei, 2014; Nawab et al., 2015; Radzi et al., 2013; Shehata, 2015; Zwain et al., 2012). The dimensions of KM which knowledge acquisition and knowledge utilisation are significant to enhance BP. However, knowledge sharing as one of the dimensions in KM has not had significant impact on BP. In this study, the coefficient results confirmed the strong and positive impact of KM towards BP. Thus, when knowledge is acquired, E&E companies can utilize the knowledge to explore problems, make a good decision and solve critical problems to produce a structure for facilitating efficiency and effectiveness organization business performance. Therefore, we must not ignore the importance of KM dimensions as the higher the usage of knowledge acquisition and knowledge utilization will lead to the higher organizational BP, and generate their own competitive advantages. Moreover, this research also indicates the important for mid-level manager in E&E industry to acquire and utilizes the knowledge for the organization to have better performance in their business.

## 6. Contribution of the study

This study has contributed to previous studies through some empirical evidence in the area of KM dimensions and BP of E&E in Malaysia. Besides, this study has also contributed to the existing literature on KM dimensions to enhance BP in E&E industry. Moreover, the finding and discussion of this study is beneficial to the practitioners of the industry player. Middle level manager must pay more attention to their own role in knowledge management as their role will influence the organizational business performance. Additionally, E&E industry in Malaysia can use this study to have better understanding about the practices of knowledge management. On top of that, further studies are recommended to re-examine these variables to strengthen the results as it contributes to academics as well for the literature review. Also, according to Loke et al. (2018), this study recommended to investigate the impact of psychological empowerment to BP in Malaysia. Since Malaysia is categorized as middle-income level country, the outcome of this study would help in suggesting that managers should pay attention to KM in developing BP for better contribution national growth.

## 7. Conclusion

Overall, this study has investigated the relationship between knowledge management (KM) and business performance (BP) of electrical and electronic (E&E) industry in Malaysia. The influence of three dimensions of KM which are knowledge acquisition, knowledge sharing and knowledge utilization toward BP was investigated. Knowledge acquisition and knowledge utilization are found to have significant influence on BP. To pursuit the sustainable competitive advantage, E&E organization must develop and incorporate KM as knowledge is one of the most critical resources to be manage and survive in the intensely competitive business environment. In sum, KM is an important asset for all E&E industry to sustain organization's competitive advantage and improve business performance.

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