

Knowledge Management and Organizational Performance: A Research On Systematic Literature

Mubarak al Rashdi, Suriati Binti Akmal, Samer Ali Al-shami

Abstract—Studies that investigate the KM and organizational performance are few. The purpose of this study is to review the literature and review the articles related to the effect of knowledge management (KM) on organizational performance. A systematic literature review was conducted, and three screenings were performed to refine the articles. Article were extracted from Scopus and Web of Science (WoS). A total of 29 articles were considered to meet the selection criteria was reviewed, analyzed, and important information was extracted. A frequency analysis was conducted on these articles. The findings indicated that majority of the articles were extracted from WoS and published between 2015-2017 in Malaysia and Taiwan. The reviewed studies were conducted on manufacturing and technological industries using quantitative method. Sample size in most studies is less than 200 and data was analyzed using first generation of data analysis. Findings were discussed, and it was recommended for future studies to increase the sample size and use more frequently structural equation modeling.

Keywords— Knowledge Management, Organizational Performance, Systematic Literature review, KM process, KM infrastructure

1. INTRODUCTION

Organizational performance is one of the most important variables in the context of management and business studies (Mohamad & Hoshino, 2012). This is because the organizational performance is an indicator of the level of the economy and can determine to large extent the level of employment, Gross Domestic Product (GDP), and Foreign Direct Investment (FDI)(Ismail, Mohamad, & Yahya, 2018; Malik, Musa, Ahmad, & Mohamad, 2014; Shah & Jan, 2014) A better performance is of extreme importance to stakeholders in general and shareholders in particular, as it helps to increase the value of the business, and offers the basis for distributing dividends, which in turn may attract investors (Müller, 2014).

Majority of previous studies, especially in large scale companies, have linked the performance to internal factors that are collected using secondary data. For this reasons, previous studies are dominated by the secondary data approach, which mainly based on historical financial indicator related to a certain period of time and does not give any indication for future performance of companies (Kaplan & Norton, 1996). New and emerging variables such as Knowledge Management (KM) have not been

investigated adequately and there is a need to understand the effect of KM practices and capabilities in the context of developing countries(Obeidat et al., 2016; Alaarj, Mohamed and Bustamam, 2017; Bajaj, Garg and Sethi, 2018; Prashar and Antony, 2018).

KM is considered as a new variable that have been introduced in the last two decades. Several researchers attempt to find the effect of KM on the organizational outcomes such as competitiveness, innovation, organizational performance, financial performance and non-financial performance (Alaarj, Abidin-Mohamed, & Bustamam, 2016; Fan, Feng, Sun, & Ou, 2009; Mills & Smith, 2011). However, there is no agreement between researchers regarding the effect of KM on organizational performance and researchers have not agreed on the operationalization of KM. For example, Gold et al. (2001) operationalized KM into KM process and KM infrastructure. Where the first includes the process of acquisition, conversion, protection, and application and the latter include the organizational structure, culture, and technology infrastructure. On the other hand, researchers such as Aboyassin et al. (2011) operationalized KM to include diagnosing, acquisition, generation, sharing, storing. For Chang and Chuang (2011), KM is operationalized into choice, access, storage, and sharing.

Few studies reviewed the articles related to KM and organizational performance. This study aims to review the effect of KM on organizational performance and it also aims to present the state of the art of the research into KM and organizational performance. The study also aims to provide researchers with direction for future work to enrich the studies in KM and organizational performance. This study consists of six sections. The first section introduced the topic and discussed the issues as well as the objectives. In the next section, the methodology of this study is discussed. Third section presents a summary of the reviewed articles. The fourth section presents the findings. In the fifth section, a discussion of the findings is given. Sixth section presents the conclusion, limitations and the direction of future works.

2. RESEARCH METHODOLOGY

This study aims to systematically determine the effect of KM on organizational performance. For this reason, a systematic review of the articles that investigate the two topics was conducted. Keywords such as KM, KM process,

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KM infrastructure, knowledge management capability, organizational performance, and a combination of these words were used to identify the articles. Mainly, two databases were used to select the articles. These includes the Scopus and Web of Science (WoS) were used to find the related articles. These databases were selected because they produce only peer-reviewed and reliable articles. A total of 251 articles were identified.

Three screening were conducted to refine the articles. The first screening was to remove the duplicates and none English article as well as the outdated articles before 2007. The 2007 period were taken in this study to review articles published in the last ten years. The first screening resulted in removing 147 articles. In the second screening, the remaining 104 articles were screened in term of titles and abstracts. This has resulted in removing 40 articles based on their relatedness to the topics of this study.

The third screening included a full reading of the 64 articles. In this screening, 35 articles were found not related to the study and thus a decision was made to remove these articles. The 29 remaining articles were reviewed, and their information were extracted. A frequency analysis was conducted on these articles. Figure 1 shows the process of selecting and extracting the articles of this study.

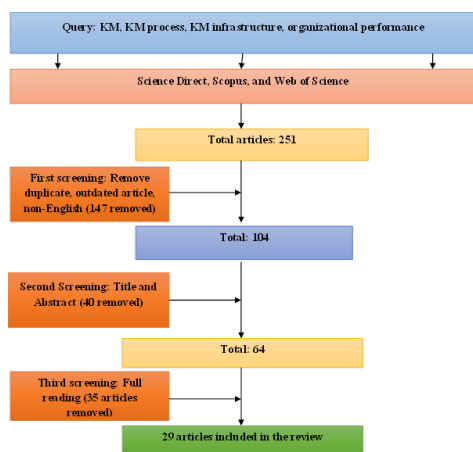


Figure 1: Process of Selecting and Refining the Articles

3. SUMMARY OF REVIEWED ARTICLES

A total of 31 articles were reviewed in this study. Boumarafi and Jabnoun (2008) investigated the effect of KM practices on organizational performance in United Arab Emirates (UAE) and found that KM practices affect the organizational performance. Fan et al. (2009) deployed fuzzy logic to investigate the effect of KM on capabilities and provide a mechanism to evaluate the attribute of KM. Hung, Lien, Fang and McLean (2010) investigated the effect of KM on innovative performance and found that KM affected the innovative performance of companies. Chong, Ooi, Lin and Teh (2010)proposes the KM affect the collaborative commerce adoption. Aujirapongpan et al. (2010) reviewed the literature and concluded that KM is divided into resource based perspective and knowledge based perspective.

Aboyassin et al. (2011) investigated the effect of KM on the total quality management (TQM) and found that KM has

essential effect on TQM. Chang and Chuang (2011) established that there is a significant effect between KM and business strategies. In the study of Mills and Smith (2011), the authors concluded that KM affect the organizational performance. Miranda, Lee, and Lee (2011) found that higher investment in KM will lead to better organizational performance. Peng Wong and Yew Wong(2011) and Loke, Downe, Sambasivan and Khalid, (2012) in Malaysia investigated the effect of KM on organizational performance and supply chain learning and found that KM affect significantly the organizational performance and supply chain learning.

Ng and Jee (2012), Alaaraj, Mohamed and Bustamam (2018); Alaarj, Mohamed and Bustamam (2017b); Alaarj et al. (2017a) investigated the effect of KM on organizational performance of manufacturing and service companies and found significant effect. Siddique (2012) noticed the increased importance of KM in companies in UAE. Honarpour et al. (2012) linked the KM to the innovation in companies. Stănciuc and Brânzaș (2013) associated between the KM implementation in Europe and the youth growth. Valmohammadi and Roshanzamir (2015) and Kahreh et al. (2014) suggested that KM affect the organizational performance and total quality management in pharmaceutical companies and banks in Iran respectively, while Duran et al. (2014) linked it to the total quality service in Turkey. Similarly, in Taiwan and Saudi Arabia, KM was linked to the TQM implementation (Ahmad et al., 2016; Chuang, Chen, & Tsai, 2015).

Chiu and Chen (2016) investigated in Taiwan the effect of KM on organizational effectiveness. The finding showed that KM affect the organizational effectiveness. Honarpour et al. (2017b)Honarpour et al. (2017a) and Yusr et al. (2017) suggested a link between KM and the innovation in Malaysian organizations. In Jordan, Qasrawi et al. (2017) indicated that the effect of KM on organizational performance is positive and significant. The above is a summary of the reviewed studies. The findings of reviewing the studies are presented in the following studies.

4. FINDINGS

The findings of this study are based on frequency analysis conducted after extracting the important information from the 29 articles. The findings are divided into several subsections that cover profile of the articles, publication by year, country, industry, sample size, method, sampling method, and data analysis techniques.

4.1 Profile of the Articles

Table 1 presents a profile of the reviewed studies. It shows that third of the articles come from Scopus while two third comes from web of science. Total quality management and business excellence, proceeding of conferences and Journal of knowledge management are the most frequent journals that published the highest number of articles related to KM and organizational performance.



Table 1: Profile of the Articles

Indicing	Journal	Frequency
Scopus	International Journal of Commerce and Management	1
	International Journal of Economic Research	2
	International Review of Management and Marketing	1
	Conference Proceedings	4
	Journal of Technology Management & Innovation	1
Web of Science	Vine	1
	Knowledge Management Research & Practice	1
	Expert Systems with Applications	1
	SpringerPlus	1
	Total Quality Management and Business Excellence	4
	Expert Systems with Applications	1
	International Journal of Quality & Reliability Management	1
	Journal of Business Economics and Management	1
	Information & Management	1
	Business Process Management Journal	1
	International Journal of Quality & Reliability Management	2
	Journal of Knowledge Management	3
	International Journal of Production Economics	1

4.2 Year of Publications

Figure 2 shows the year of publications. Few of the articles were published between 2008-2010 while the number increased in 2011-2012. Another increase has been seen between 2016-2018.

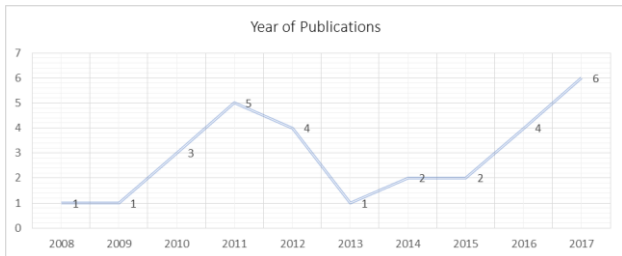


Figure 2: Year of Publications

4.3 Country of Origin

Figure 3 shows the country of origin of the studies. A total of 26% of articles investigated the effect of KM on organizational performance in Malaysia followed by 16% in Taiwan, 10% in Jordan and 13% has not stated any country due to the fact that these articles either literature review or conceptual articles.

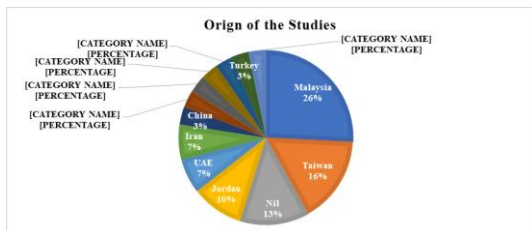


Figure 3: Country of Origin
Note: Nil: no country

4.4 Industry

Figure 4 shows the industries that have been investigated in the reviewed articles. The highest number of articles investigated the manufacturing followed by

high tech or technological companies, public listed companies and some researchers stated that their sample includes several industries. Few studies investigated the public sector, services, banks, insurance, and hospital.

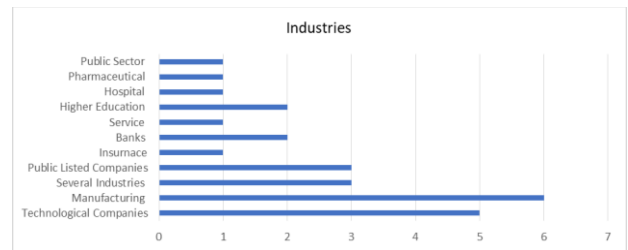


Figure 4: Industries

4.5 Method

Figure 5 presents the approach of the reviewed articles. It shows that 79% of the articles are quantitative followed by 10% are conceptual articles, 4% have used mix method and 4% used qualitative method while only 3% are literature review articles.

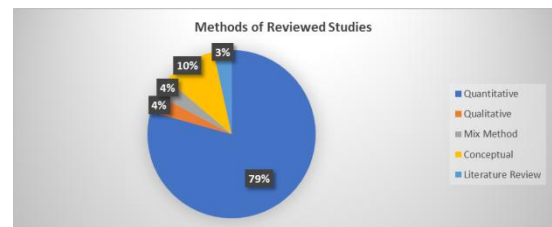


Figure 5: Method of the Reviewed Studies

4.6 Sample Size

The sample size of the reviewed articles is presented in Figure 6. It shows that the highest sample size was 470 while the lowest sample size was 62 with overall mean score of sample size 216 respondents.



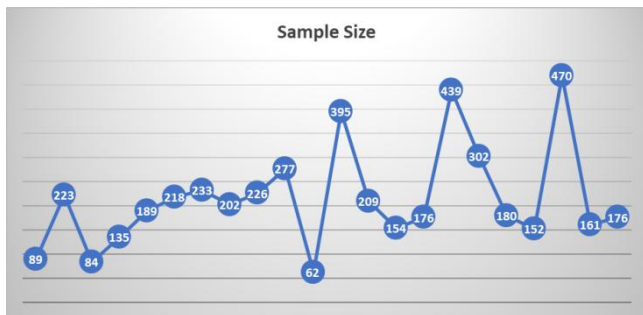


Figure 6: Sample Size

4.7 Data Analysis Technique

Figure 6 show the data analysis techniques which was used in the reviewed articles. It can be seen that the highest percentage used Statistical Package for Social Science (SPSS) (40%) while 24% deployed Analysis of a Moment Structures (AMOS), 16% have used Partial Least Square (PLS) and also 16% have used LISREL. Only 4% have used fuzzy linguistic.

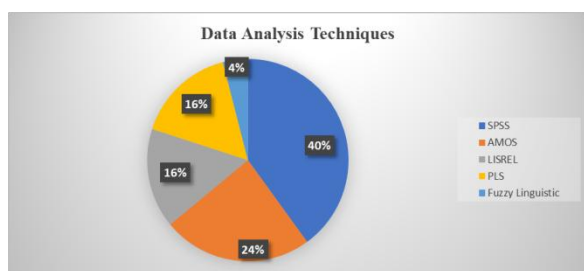


Figure 6: Data Analysis Techniques

5. DISCUSSION & RESULTS

This study was conducted to review the literature of KM and organizational performance. The important points of reviewing the previous studies can be summarized that KM is important predictors of the organizational performance. Nevertheless, Obeidat et al. (2016) pointed out that few studies focused on KM and its effects on organizational performance. The review of 29 articles agreed with this claim made by Obeidat et al. (2016). Few studies focused on the effect of KM on organizational performance. The second point is the lack of studies on KM in developing countries. A meta-analysis study indicated that the majority of articles in peer reviewed journals on KM comes from USA, the UK, Canada, Germany, Australia, and Spain (Serenko, 2013). Alaarj et al. (2016) noted that most of KM studies were conducted in developed countries and in Taiwan. In this study, it was found that articles from Malaysia have overtaken other articles from Taiwan or developed countries. This could be due to the scope of this study where the focus was on the effect of KM on organizational performance. In agreement with previous studies, this study found that some countries have received limited number of articles such as Turkey, China, Iran, and UAE.

The third point is the excessive use of correlational and descriptive analysis rather than the use of cause and effect analysis or regression analysis. In agreement with this point, a previous meta-analysis found that majority of studies between 2002 and 2012 were descriptive research

(Doeleman, ten Have, & Ahaus, 2014). In the review of 29 articles, it was found that studies were interested in the correlation between KM and organizational performance indicators and dominated by conceptual studies (Boumarafi and Jabnoun, 2008; Aboassin et al., 2011).

The fourth point that have been observed from previous studies, is the intensive use of SPSS software (Joiner, 2007; Boumarafi and Jabnoun, 2008; Aboassin et al., 2011; Ng and Jee, 2012; Siddique, 2012; Psomas and Jaca, 2016; Panuwatwanich and Nguyen, 2017; Qasrawi et al., 2017). This is also supported by the fact that more than 40% of the articles have used SPSS as the data analysis technique rather than the SEM software such as AMOS, PLS, and LISREL.

This was also noted in the study of Khanam, Siddiqui and Talib (2013) who found that SPSS is the most widely software used.

The fifth point is the sample size is limited in most previous studies. It was seen that some studies have used sample size of 62, 84, and 89. This refers to the limitation of generalizing the findings of these studies and urge for the need of deploying more sample size to generalize the findings. Once again, this supports the need for using the SEM, which typically requires a sample size of 200 (Hair, Hult, Ringle, & Sarstedt, 2017).

The sixth point is the excessive investigation of manufacturing and technological sectors while other sectors have received less attention. For example, public sector, pharmaceutical, hospital, banks, and higher education. This agrees with Alaarjet a. (2016) who noticed that the majority of previous studies on KM have investigated either the technological or the manufacturing sector.

Lastly, it was noted from previous studies the scarcity of using mediator or moderator to understand the effect of KM practices on organizational performance. This point is supported by the findings of Chuang et al. (2015) who suggested to included mediator or moderator to better understand the effect of KM on organizational performance. Moderating role of trust and organizational performance was investigated by few researchers and there is a need for more studies to look into the moderating role of these variables. Other variables such as business strategies, and inter-organizational trust as well as the business uncertainty are worthwhile of investigation.

6. CONCLUSION, LIMITATIONS AND FUTURE WORK

This study reviewed the literature to present the state of the art in the field of KM and organizational performance. A systematic review was conducted and a total of 29 articles were reviewed, analyzed and important information was extracted. The findings indicated that all the articles were extracted from Scopus and Web of Science with the majority were published between 2015 and 2018. Most of the articles investigated the issue of



KM and organizational performance in Malaysia, Taiwan, and Jordan. Majority of the studies were conducted on manufacturing and technological industries. The majority of the studies are quantitative with mean of sample size 216. SPSS is the most widely used data analysis techniques followed by AMOS, LISREL and PLS.

The findings of this study are limited to the reviewed articles. Due to the selection criteria of the articles, only 29 articles were reviewed. The findings also are limited to the scope of this study because it focuses on KM and organizational performance. As a way forward, future studies are recommended to expand the scope of this study so that the findings can be more generalizable. Future research is recommended to investigate systematically the literature by including other indices such as to focus only on articles published by Emerald or Science Direct or in specific journal such as the Journal of Knowledge Management. Future studies are recommended to investigate empirically the effect of KM on organizational performance and other organizational outcomes such as competitiveness, innovation, and new product development especially in emerging market. More studies are need in the banking usage of KM to improve the organizational performance. Similarly, more studies are needed in higher education, insurance, hospital, pharmaceutical and more importantly the public sector usage and implementation of KM and organizational.

Future studies are recommended to investigate the KM using methods such as mix method or qualitative studies. Literature review studies are recommended also to determine the direction for future works. Sample size in most studies is less than 200 which does not meet the role of thumb for using AMOS or PLS. Future research is recommended to expand the sample size and use technique such as Structural Equation Modeling (SEM). Using AMOS or PLS should be dependent on the nature of the conducted studies. For this reason, PLS is recommended in explorative nature studies while AMOS for confirmatory studies.

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