KNOWLEDGE MANAGEMENT PRACTICES AND SMALL-MEDIUM FIRM COMPETITIVENESS: THE MEDIATING ROLE OF INNOVATION IN THE RESIDENTIAL CONSTRUCTION INDUSTRY

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2016
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Amalan Pengurusan Ilmu dan Daya Saing Firma Kecil-Sederhana: Peranan Innovasi sebagai Perantara di dalam Industri Pembinaan Kediaman

ABSTRAK


ABSTRACT

Construction and housing industry are facing strong competition and further development, due to the globalization of economy and fast urbanization process. Furthermore, the emergence of intellectual capital and knowledge management (KM) as new disciplines has become a major driver of firm competitiveness and industries. At the same time, the scholars and practitioners also recognized that innovation had given strength to the firm competitiveness, while KM has been a possible antecedent of innovation and frequently cited as one of the enablers of innovation in the previous literatures. However, the construction industry recently had been debated by many previous empirical studies as lacking innovation in comparison to other industries. Hence, a significant amount of empirical researches have not been conducted pertaining to the effects of the relationship between KM, innovation and firm competitiveness. This becomes more important due its perspective in the residential construction industry within Malaysian context. Even though the prior empirical studies had examined and determined innovation as a mediator in the established relationship; however, their result had varied. Most of the studies in KM and innovation were more focused on organizational performance within the larger firms compared to small-medium firms (SMFs) context in different industries. This research attempts to improve the extent of understanding of KM practices, innovation and their competitive level among small-medium housing developer firms. Specifically, this research analyzed the relationship among the abovementioned variables and determined the potential of innovation as a mediator in the relationship between KM practices and SMF’s competitiveness. This study also determined which organizational behaviour of KM practices had the strongest influence on innovation and competitiveness of the firms. For this purpose, data were collected from 163 SMF’s housing developer which are involved actively in the housing development projects and located in the East Coast Region of Malaysia. It was found that KM practices and competitiveness of the firms were at high levels extent whilst innovation was at a moderate level extent among the firms being surveyed. Structural Equation Modeling (SEM) was employed in this study. The findings of this structural model analysis suggested; first, KM practices have a significant impact on innovation. Second, innovation fully mediates the relationship between KM practices and competitiveness of small-medium housing developer firms. The conclusions of this study may contribute to academicians and the top management of the firms in improving KM practices in order to enhance innovation as well as improve their competitiveness level in the sector studied.
CHAPTER 1

INTRODUCTION

1.1 Background of the Research

The construction and housing industry are facing strong competition due to the globalization of economy, fast urbanization process and ‘macro-control’ policy by the central government, which had then posed new challenges for the organizations towards further development (Zhang, Shen, Wu, & Peng, 2010; Zhen, 2009). Besides that, the arriving of present challenges such as technology transfer, free trading system, emerging of new industries and markets; and restructuring of the economy had pushed many companies to maintain and constantly improve their competitive advantage to compete with the competitors (Subramaniam & Youndt, 2005).

Furthermore, Abdul Rashid, Yi, and Mastura (2006) added, the scenario of the construction industry are being more competitive by increasing a number of the players involved mainly the housing developer firms over the years and thereby fostering healthy competition among them in the industry. Consequently, the increasing number of the firms had resulted in an increasing number of housing delivery and houses completed. Thus, it requires the struggling firms to improve their competitiveness for the long-term survival and rather than being forced to exit from the industry if they are not well performing. Egbu, Hari, and
Renukappa (2005) stated, small-medium firms hardly survive for the long term business sustainability and about 36 per cent from their survey, the firms are perish after three years of operations. This maybe because the businesses do not make profit, death or retirement of the owner of a business and also the owners’ personal motivation and aspirations were changed. Thereby, individuals and organizational knowledge are very important factors which could encourage a sustainable competitive advantage in the small-medium firms.

Hence, the small-medium firms (SMFs) are assumed to be more competitive overall if they can achieve and sustain the performance of competitiveness rather than their competitors in the market (Zhang, 2010). The health of the housing developers’ businesses also contributes to the smooth development of the industry level as a whole and not only to their own firm (Li, Li, Skitmore, Wong, & Cheng, 2009). Specifically, the housing developers or contractors must be concerned about what factors lead or affect their organizations to be more competitive than their competitors and how it should be measured (Li et al., 2009; Zhen, 2009).

In line with this, it is important to help the organization to develop healthy by undertaking the competitive advantages and taking due strategies to improve the competitiveness. An organization should understand their competitiveness and; hence, identify the strategy for improvement. However, Muhammad Najib and David Martin (2011) mentioned the strategy depends on a successful of co-ordinated resource management which is divided into two groups: tangible and intangible resources. Muhammad Najib and David Martin (2011) also added that
the property and construction business currently is shifting away from tangible physical resources towards intangible resources by focusing on the information and knowledge creation due to the emergence of industry’s globalization and information and communication technology (ICT). Battor, Zairi, and Francis (2008) also supported the argument which mentioned that the data, information and knowledge (intangible resources) contributed more to the firm’s value added in today’s economy rather than the tangible resources. Thus, it is assumed to be the main source of the competitive advantages whereby it cannot be easily duplicated by any competitors compared to tangible resources which can be bought and sold in open markets. In today’s global competition, knowledge is a critical but hidden asset and primary intangible resource of a firm that was widely recognized by many other scholars. Furthermore, Loforte Ribeiro (2009) highlighted that the construction industry as an information and knowledge driven industry.

Correspondingly, a few empirical researches have investigated the relationship and indicated that knowledge management (KM) could play a major role in enhancing organizational performance (e.g. Darroch, 2005; Kamaruzaman & Rohana, 2009; Laith Ali Yousif & Shahizan, 2013; Muhammad Saqib, Masoodul, & Sadia, 2014; Palacios-Marqués, Peris-Ortiz, & Merigo, 2013; Ruiz-Jiménez & Fuentes-Fuentes, 2013; Wang, Wang, & Liang, 2014; Wu & Chen, 2014; Zack, McKeen, & Singh, 2009) as well as organizational competitiveness (e.g. Abeson & Taku, 2009; Carneiro, 2000; Connell & Voola, 2013; David E. Chesebrough, 2006; Egbu et al., 2005; Rodriguez Perez & Ordonez de Pablos,
2003; Sohel & Schroeder, 2011). However, Laith Ali Yousif and Shahizan (2013) stressed that studies on the relationship between KM and organizational performance is still lacking. It is undeniably more important in the residential construction industry.

Previous literatures highlighted the practices of KM within the construction firms is about managing an organization’s knowledge assets to fulfill the organizational objectives for individual, group and organizational learning, and also to support innovation. Many scholars agreed that the diversity and complexity of innovation activities relied on the availability and amount of knowledge available within the organizations. Hari, Egbu, and Kumar (2005) also realized that the capacities to innovate are depend considerably on their staffs’ asset in terms of expertise and good training. Furthermore, Egbu (2004) as well as Hari, Egbu, and Kumar (2005) also discussed how organizations use and exploit the available resources within the firms particularly KM in order to benefit their innovation.

Based on Penrose’s theory on Resource-Based View (RBV) and realizing knowledge as valuable intangible resources within the organizations, knowledge should be identified and well managed in determining the innovation creation and finally ensuring the success of innovation (Darroch & McNaughton, 2002). Thus, the concept of KM is parallel with numerous scholars’ view that it has given effective outcomes such as innovation, competitive advantage, improved financial performance and enhanced organizational learning (Darroch, 2005). Besides that, innovation is one of the firm-specific elements (Li et al., 2009) that is also related
to effective means for ensuring and gaining competitive advantage in a market economy (Gunday, Ulusoy, Kilic, & Alpkan, 2011).

Unfortunately, the construction industry worldwide is characterized as being lack of innovation in comparison to other industries by many scholars (Abbott, Jeong, & Allen, 2006; Thorpe, Ryan, & Charles, 2008, 2009). Furthermore, Thorpe et al., (2008, 2009) indicated that, the industry still not highly innovative even though it had taken place and the rate is still low. Plenty of researches (e.g. Chong, Chan, Ooi, & Sim, 2011; Lily Julienti & Hartini, 2010; Otero-Neira, Tapio Lindman, & Fernández, 2009; Yeh-Yun Lin & Yi-Ching Chen, 2007) had investigated on innovation and focused more on manufacturing and services industries with little emphasis on the residential construction industry.

Thus, it is important to conduct a research on innovation within the industry as the industry is continuously under pressure to confront new technologies and methods. This is because of many construction projects within the international context has been broadly criticized as slow to apply and use in terms of new management practices and also new technologies (Hardie, 2010). Hardie (2010) also added that there must be emphasis on the new construction methods due to the complexity of system projects and diversity of construction activities as the industry is moving towards a developing world nowadays. Hence, the construction industry should be dynamic in responding to the pressing social, economic and technological challenges. Today’s innovation activities in the construction industry will give much impact in terms of opportunities and
problems to the future industry. Therefore, it’s very important to implement the innovation in order to maintain the industry’s status as an economic driver. With lacking innovation, the industry needs to be focused for innovation in the utilization of new materials and construction methods, the application of innovative housing designs and architectural concepts (Thorpe et al., 2009).

Hence, an organization should start to grasp the importance of KM and innovation due to the increasing competition in the global markets. The competition amongst housing developers in the market of residential development has forced them to enhance their competitiveness. Thus, the challenging and competitive business has led the managerial core to the proper planning and management system, which can ensure the success of organizations. Therefore, KM practices and innovation should be stressed and incorporated into the most of the organization’s mission statements. Given the broadly recognized importance of KM practices in enhancing innovation and the competitiveness in an organization, this study intends to explore the relationship between the above mentioned variables in the sector of residential construction.

The construction industry is also important from the international viewpoint. Blayse and Manley (2004) revealed that higher levels of innovation in the construction industry will directly contribute to the increasing of national economic growth. This industry remains a crucial sector as it contributes to national Gross Domestic Product (GDP). Thus, any contribution in their productivity will significantly and positively impact to the global economy (OECD, 2005).
KM practices were interpreted into various subjects and are highly subjective in nature. Thus, it has been studied from different perspectives. Yazhou and Jian (2013) reviewed that research conducted in KM are more of an organizational knowledge in terms of information technology, valuable strategic resource assets and capabilities, and organizational behaviour. According to Yazhou and Jian (2013), the ability to manage both explicit and tacit knowledge by the organizations and as well as the conversion between explicit and tacit knowledge effectively, and consequently will benefit the competitiveness of the firms. Sohel and Schroeder (2011) investigated the three dimensions of learning-based strategy of KM (proactive technology, process adaptation and experimentation, and collaborative technology) as resources in gaining their firm’s competitive advantages. This research examines KM practices to improve firm competitiveness.

Innovation also had been studied in different dimensions. Maravelakis, Bilalis, Antoniadis, Jones, and Moustakis (2006) measured firms’ innovation based on the product, process and administrative innovation. Another previous studies were inclined to focus a few dimension of innovation types such as product innovation (e.g. Alegre, Lapiedra, & Chiva, 2006; Hernández-Espallardo & Delgado-Ballester, 2009; Lily Julienti & Hartini, 2010; Zhang & Duan, 2010), product and process innovation (e.g. Murat Ar & Baki, 2011; Prajogo, Laosirihongthong, Sohal, & Boon-itt, 2007; Wolff & Pett, 2006), and market innovation (Johne, 1999).
However, the majority of the researches conducted in innovation field focuses more on product and process innovation, particularly in the manufacturing sector (e.g. Gloet & Terziovski, 2004; Hernández-Espallardo & Delgado-Ballester, 2009; Prajogo et al., 2007; Zhang & Duan, 2010b). Furthermore, Mothe and Nguyen Thi (2010, 2012) highlighted that past literatures did not consider the other types of innovation such as the administrative innovation (marketing and organization), nevertheless; that types of innovation played crucial roles in maintaining competitiveness of the firm.

Although there has been extensive research were conducted in KM, innovation and firm performance thus far (e.g. Darroch, 2005; Muhammad Saqib et al., 2014; Ruiz-Jiménez & Fuentes-Fuentes, 2013; and Yazhou & Jian, 2013), only a few literatures explores the link of KM with examining specifically on the firm’s organizational practices and firm competitiveness as well as innovation types on the firm competitiveness. Previous empirical studies associated innovation and firm performance, and giving positive effect on the established relationship (e.g. Atalay, Anafarta, & Sarvan, 2013; Chong et al., 2011; Yi Li, Zhou, & Si, 2010; Yuan Li, Zhao, & Liu, 2006; Lily Julienti & Hartini, 2010; Oke, Burke, & Myers, 2007; Yeh-Yun Lin & Yi-Ching Chen, 2007). However, innovation also has been considered as one of the business strategies and influences on firm competitiveness (Bismarchi & Loschiavo Dos Santos, 2011; Clark & Guy, 1998; Pellicer, Yepes, & Rojas, 2010). Organizations will become more innovative when the global market is forced and continuously pressured for competition; hence, it will increase the overall competitiveness.
Acknowledging the importance of knowledge, innovation and firm performance as well as competitiveness particularly in business development, many empirical researched investigated the relationship between the abovementioned variables (e.g. Carneiro, 2000; Gloet & Terziovski, 2004; Lundvall & Nielsen, 2007; Plessis, 2007; Rosmaini, 2008; Seidler-de Alwis & Hartmann, 2008; Tseng, Pai, & Hung, 2011; C. Wang & Han, 2011). However, most of them investigated a direct relationship such as: the relationship between KM and firm performance, innovation and innovation and firm performance and lastly; KM and innovation. Certain research had fairly argued that the relationship of the established relationship may or may not be straightforward.

Despite seeing the relationship of KM on innovation and firm performance with empirical evidences, Darroch (2005) focused on the larger firms from a cross section of industries rather than small-medium firms (SMFs). Different to Carneiro (2000) who examined the relationship of KM influencing innovation and competitiveness based on content analysis without empirical findings and not focusing on any specific industries. Yazhou and Jian (2013) analyzed the relationship between KM orientation, innovation and organizational performance and focused on general small business enterprises in China.

In line with the ideas and arguments debated above, this study explores the multi-dimension of innovation types such as technical and administrative in which covering on product, process, marketing and organizational innovations and their influence on competitiveness of the firm. Yet to date, no study was found comprehensively investigates the mediating roles of innovation between the
relationship of KM and firm competitiveness within the SMFs context of
residential construction industry.

Acknowledging various contributions of the construction industry as a
significant sector to the nation and also typically dominant by a high proportion
of SMFs (Hardie, 2010); hence, the competitiveness and business development of
this industry must be sustained. SMFs play a crucial role in driving of the market
(Hills, Fox, Hon, Fong, & Skitmore, 2008), supporting the national economic
growth, generating employment and providing job opportunities. As a result,
97.3% of the overall business nowadays is dominated by small-medium firms
which contributes to 33.1% of national Gross Domestic Product (GDP) (details in
Section 1.2) (Malaysian Economic Report, 2015).

In order to explore such issues, samples from small-medium housing
developer firms, especially the private housing developers were taken as part of a
broader study of KM practices and innovation in these firms, and to explore their
relationship on competitiveness level. Hardie and Newell (2011) and Hardie
(2010) also believed that if sufficient support and encouragement were provided
to the small-medium construction businesses, they are able to deliver successful
technical innovation; hence, giving a potential significant contribution to the
economic and environmental performance of the construction industry.