

EFFECT OF IT PERSONNEL CAPABILITIES ON THE SUSTAINABLE COMPETITIVE ADVANTAGES

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ABSTRACT

Valuable IT personnel's are able to integrate business planning processes in line with suitable existing IT resources more effectively; formulate and develop valuable effective applications that assist the business needs of the firm quicker than rivals; flexible communication among business units more efficiently; forecasting of future business needs, and innovate unique new product attributes before rivals. Few empirical studies indicates that the capability of IT personnel is the main driver of the sustained firm performance due to its unique attributes and inimitable to owned by other rivals which easily suit Barney VRIN attributes and hence able to generate a sustainable competitive advantage (SCA). Strategic scholars argued that firms are unable to sustain their performance unless sustain its competitive advantages thus, the need to address the crucial role of IT personnel capability on the generating and sustaining firms advantages is more needed especially those firms that are operating in the turbulent environments. Therefore, the aim of this study is to address the significant gap that emerged in the literature and linking firm's sustained performance as an outcome of sustainable competitive advantages from low-tech industry and within developing country context. In addition, the study provide deep analysis concerning which skills and knowledge that should owned by skillfulness IT staffs within Malaysian furniture industry. To conclude, based on the valuable prior empirical studies, this study found that IT personnel capabilities tend to be the main driver of SCA especially those furniture firms that combine between arts and technology know-how to provide unique designs. This conceptual study has a critical effect on the body of knowledge which provide depth analysis from strategic management and management information system perspectives. As well as, the study offers useful implications and practical suggestions for policymakers, related agencies, and stakeholders.

Keywords: *IT personnel capability, Sustainable competitive advantage, Furniture industry.*

INTRODUCTION

In the highly dynamic environments, firms are struggling to maintain their competitive advantage due to its decreasing over time (Wiggins & Ruefli, 2005). Thus, in line with responding flexibly and rapidly to the multiple market demands, IT staffs have become one of the main crucial drivers in creating corporation competitiveness Terry Anthony Byrd and Turner (2001b); Sambamurthy, Bharadwaj, and Grover (2003), which in turn lead to make IT-based resources critical to modern business at both levels strategically and operationally (Bharadwaj, 2000).

Importantly, how to develop the required IT infrastructure capabilities highly depend on the entire capabilities of IT personnel in terms of their skills and business knowledge in order to respond with business needs and processes as well as customers desires. Thus, in addition to the technical skills of IT personnel related to the IT-infrastructure development which in turn lead to effectively communicate and integrate the business units and the follow of information within the firm's business applications and operating systems. The business knowledge of IT personnel is also much important due to its considerable influence on the functional and strategic levels of the firms (Ashrafi & Mueller, 2015).

Following the aforementioned discussion, our paper question is whether and how the technical skills and the business knowledge of IT personnel that firms possess would influence the firm's sustained competitive advantage? How IT Personnel skills link the business units of the firm and to what extent these skills and business knowledge of IT staffs are able to well-aligned with the firm strategy? More critically, IT personnel skills and their business knowledge is very crucial particularly for Malaysian furniture industry due to their capabilities to develop many applications and software that largely used by this industry in order to produce unique and inimitable designs as well as the brand reputation that would suit international customers regardless their culture and living styles.

Thus, the first objective of this study is to explore the role of these technical skills and business knowledge of IT staffs that organization possesses in order to develop its IT infrastructure as well as achieving a close interaction between all the business units that suit the overall business strategy. Therefore, the current paper identifies two main capabilities of IT personnel that definitely possess considerable influence on the firm's sustainable competitive advantage namely technical skills of IT personnel and the business knowledge of IT personnel.

Another justification for the importance of IT personnel capability is provided by resource-based view that considered IT personnel capabilities those that possess unique expertise, competencies, and valuable knowledge which is more needed to provide IT services (Terry Anthony Byrd & Turner, 2001a). Many scholars have classified IT personnel capability into two major subsets: technical skills and business knowledge (Melville, Kraemer, & Gurbaxani, 2004).

Practically, while SMEs in Malaysia is well-known for their progressive utilization of IT Hashim (2015), still it has not yet been examined the RBV theory that is much used in the western strategic use of IT is also applicable in the context of Malaysia. Therefore, this study unique and important which guide for fulfilling the outstanding gap through investigating whether or not both capabilities that is technical skills of IT personnel and business knowledge of IT personnel are lead to create sustainable competitive advantage and also to what extent these capabilities of IT staffs are able to links the overall firm business units with its external parties (Kettinger & Lee, 2002; Sambamurthy et al., 2003). This is in line with the current trends that IT staffs must combine their technical skills and business knowledge for strategic use of IT (Bassellier & Benbasat, 2004).

Statement of the Problem

Professionals and scholars recognized that IT personnel capability as important valuable resources that support business unit's flexibility. Literature indicates that very few studies have been published to examine the role of both technical skills and business knowledge of IT personnel on the sustainable competitive advantage. Scholars have been largely applied RBV within IT and IS studies to address firm performance and sustained competitive advantage for three decades. Among these studies are IT knowledge (Grover, Gokhale, & Narayanswamy, 2009; Tippins & Sohi, 2003), IT experience-based learning (Matsuo, Wong, & Lai, 2008), senior IT leadership (Terry Anthony Byrd, Lewis, & Bradley, 2006), IT capabilities (Duhan, 2007; Priem & Butler, 2001), IT outsourcing performance discrepancies (Teng, Cheon, & Grover, 1995), dynamic capabilities (Sher & Lee, 2004), and IT-based competitive advantage (Lai, Zhao, & Wang, 2006).

Based on the aforementioned studies that demonstrated that the competitive advantage sustainability issue is highly achievable when firms are owning unique IT-based resources that suit Barney VRIN attributes (Eisenhardt & Martin, 2000), and are almost unable to be duplicated in the markets by rivals (Kearns & Lederer, 2003). Therefore, applying the RBV as a lens of this current study, the author viewed that the technical skills and business knowledge of IT personnel capability as the two major capabilities that are unique, valuable, and inimitable input which turns to be the main source of SCA.

However, modern manufacturers recognized that it is totally becoming very hard to maintain proprietary (valuable assets), due to the wide availability of business resources where easy to be owned or copied by other rivals (e.g., business units communication, staffs mobility, markets, suppliers, business problem solving, customers, managerial skills, etc.) which altogether involved to deploy the existing information about SISP to support IT-decision (Bharadwaj, 2000; Mata, Fuerst, & Barney, 1995). Hence, the implementation of business IT-applications required other complementary business resources in line with the planned business goals (Tippins & Sohi, 2003).

Practically, successful firms are recognized that the critical effect of IT personnel capability is when integrated with IT infrastructure which run as an enabler factor and creates considerable advantages with the necessary technical skills and business

knowledge of IT professionals (Clemons & Row, 1991). Empirical pieces of evidence suggested that technical skills of IT staffs are critically needed for successful IT implementation (Chung, Rainer Jr, & Lewis, 2003; Keen, 1991).

Also, technical systems such as ERP, CRM, SCM, EDI, etc. does not influence firms to maintain any competitive advantages due to the easiness to be duplicated and owned by other rivals (Bharadwaj, 2000). On another hand, technical skills and business knowledge of IT professionals enables firms to assemble and deploy IT-based resources with other organizational resources which in turn lead to creates unique and inimitable capabilities that rivals unable to understand the processes of resource creation that ultimately affect the business sustainability (J. B. Barney, 1996; Bharadwaj, 2000; Teo & Ranganathan, 2003).

In order to create and sustain competitive advantage, the author argued that firms must seek to compete for acquiring valuable IT-personnel capabilities that owning unique technical skills and deep business knowledge and thereby lead for developing new business IT-applications that ultimately these resources are able to own VRIN attributes and hence rivals are totally unable to duplicate these unique IT-based resources (J. Barney, 1991; Eisenhardt & Martin, 2000; Mahoney & Pandian, 1992).

The reasons behind the importance of the two critical capabilities of IT personnel is that because are the main enabler capabilities that effectively coordinate and incorporated both information system and business plans, and more particular within furniture industry where technical skills of IT staffs are significantly influence firms to sustain design that is the main tool for successful competition, hence enhancing firm competitiveness (S.-M. Huang, Ou, Chen, & Lin, 2006; Peteraf, 1993).

Luftman, Kempaiah, and Nash (2006) stated that technical skills of IT personnel without business knowledge don't contribute to the successful IT personnel capability, where these staffs need to acquire a business vision to determines new IT opportunities, identifying IT trends that are needed for business changes, and coordinating the multi-faceted activities associated with IT-based resources and thereby lead to continuously develop IT infrastructure, hence establish business based on IT innovations. Thus, business knowledge of IT personnel is considered as a distinguished factor for successful firms that own appropriate and unique IT staffs (Bharadwaj, 2000), and thereby lead to create inimitable SCA that is the main issue addressed here (L. K. Huang, 2010).

Rationale of the Study

The rationale and justification behind this study are to determine whether technical skills and business knowledge of IT personnel capability are influencing firms to generate and sustain their competitive advantages. So far, no published work has been examined the critical effect of these two capabilities on firm's sustained advantages and more particularly in the furniture industry and their role in the sustainability of designs. Valuable IT personnel and their effectiveness lead to support and empower business strategy and its processes especially within dynamic environments like furniture industry

where firms unable to ensure their survival due to the huge development in the products designs and the changes of customer preferences (Silvius, De Waal, & Smit, 2009).

Finding the factors that have considerable influence on IT personnel capability could allow IT managers in the furniture firms to be more effective and responsive in line with customer preferences which in turn lead to achieving the greatest benefits due to the sustained of advantages. IT personnel capability based on their technical skills and business knowledge on the sustainability of competitive advantages in the furniture industry has not been addressed. Furthermore, no published study exist in the literature which these intangible resources technical skills of IT staffs, business knowledge of IT staffs, and sustainable competitive advantage has been correlated within the furniture industry. The current study was the first to present empirical evidence from the context of a low-tech sector, which filled a significant gap in the literature.

LITERATURE REVIEW

IT Personnel Capability

Barney defined resources as those that firms must possess where containing assets, capabilities, knowledge and organizational processes (J. Barney, 1991). From IS literature, IT-based resources contain IT infrastructure capabilities, IT-enabled intangibles, and IT personnel (Bharadwaj, 2000). The author emphasized on capability of IT personnel due to their critical role in the IT infrastructure and thereby they are strategically important for IT department which able to support business processes and link all the business units to suit a firm strategy and hence generate intangible resources such as customer responsiveness, knowledge leverage, interaction with other business units and suppliers, etc.) (Chung, Byrd, Lewis, & Ford, 2005; Henderson, Venkatraman, & Oldach, 1996; Luftman, 2003; Rockart, Earl, & Ross, 1996).

As stated by (Terry A Byrd & Turner, 2000) and Chanopas, Krairit, and Ba Khang (2006), competency of IT personnel is the capacity of staffs to acquire and master related technical skills and useful business knowledge to effectively and properly perform IT activities. Due to the fast advancement of IT industry, IT personnel required to having a wide variety of technical skills and in-depth business-knowledge (Terry A Byrd & Turner, 2000). IT personnel must have a combination of technical skills and business knowledge.

Technical Skills of IT Personnel Capability and SCA Issue

As a result of seeking to survive in highly dynamic environments, the modern organizations recognizes highly the value of IT resources and almost is undeniable (Ashrafi & Mueller, 2015). IT human resources that solve problems and sense opportunities through the advanced technologies is a valuable and inimitable human

resources (Ashrafi & Mueller, 2015). Based on the arguments of the three major scholars of RBV theory, firms that possess unique and valuable resources are definitely able to sustain its competitive advantage (J. Barney, 1991; Teece, Pisano, & Shuen, 1997; Wernerfelt, 1984).

Technical skills of IT personnel capability influence firm's flexibility and are crucial resource which enables the strategic alignment between IT and business needs (Fink & Neumann, 2007; Luftman, Papp, & Brier, 1999; Weill, Subramani, & Broadbent, 2002) were RBV look to the alignment as a valuable and strategic internal asset for creating and sustaining competitive advantage (J. Barney, 1991; Tippins & Sohi, 2003). The reasons behind why scholars investigate the role of IT personnel capability is that they are the basis of IT infrastructure and are strategically valuable because they play the main role in facilitating the business processes which generate intangible resources such as interaction between business units and suppliers, enhance customer responsiveness, exploring and exploiting new knowledge Chung et al. (2005) and S.-M. Huang et al. (2006) which resulted in creating a valuable and inimitable capabilities that are the key road for creating and sustaining a competitive advantage (Luftman, 2003; Ross, Beath, & Goodhue, 1996).

Firms with inimitable IT personnel capability that possess academic knowledge and formal training in terms of technical matters, sensing for emerging new threats, adapting with changing management, understanding of strategic operations, creating and linking business units together, acquiring new knowledge as needed, able to survive on long term and sustain a variety of advantages over its competitors (S.-M. Huang et al., 2006; Ross et al., 1996). An empirical investigation Tallon, Kraemer, and Gurbaxani (2000) found that firms that using valuable capabilities have a significant effect on the value creation for their customers. The conducted interview with IT managers also confirmed that the greater benefits from IT capability is that related to the product side, improving or generating new products. He also mentioned that there is a great link between IT and better services with customers which results in the creation of unique value as well as improving in the overall market share.

In this current study, we consider IT personnel as those staff that possesses technical skills, capacity of understanding business needs and planning as well problem-solving. Another empirical study, S.-M. Huang et al. (2006) stated that firms that have valuable IT staff will be able to create high IT-enabled intangible assets which in turn have a strong positive correlation with the sustained superior performance of the firms. Scholar Mata share an empirical investigation together with the foundation of the RBV theory J. B. Barney (1995), they proposed four elements of the sustained competitive advantage that are: capital requirements, propriety technology, technical skills, and managerial skills, their findings indicate that IT managerial skills the only element that have positive relationship and able to generate SCA (Mata et al., 1995). This view is supported by another empirical study Dehning and Stratopoulos (2003) demonstrated that IT managerial skills have a strong correlation with SCA.

Business Skills of IT Personnel Capability and SCA Issue

In spite of the economic downturn that witnessed by both developed and developing countries and its negative impact on the IT job market, IT professionals are still ranked as a top management concern, so managers attract, develop and maintain them are more critical for successful firms that operate in the dynamic business environments (Luftman et al., 2006). Scholars such as Bassellier and Benbasat (2004) agreed and reported that for high performance of IT personnel, they should be possessing a valuable and unique knowledge and business skills in order to serve their specific duties effectively. A study by Lee, Trauth, and Farwell (1995) indicates that the lack business capability of IT personnel leads to hinder IT infrastructure of the firms. The strategic effect of the business capability of IT personnel is that they are able to understand firm's strategy together with the business needs in line with the implementation of suitable plans, and in general to align business strategy with IT (Fink et al., 2007). In fact, both scholars L. K. Huang (2010) and professionals have had recognized the critical role of the business capability IT professionals as a valuable strategic source for the firms.

To support the aforementioned, a study by Reich and Benbasat (1990) argued that appropriate IT personnel usually possess considerable experience, technical skills, and knowledge about business which in turn integrate with other resources formulating valuable and inimitable capabilities to become ultimately key sources of SCA (Mata et al., 1995; Wade & Hulland, 2004). Therefore, business skills are crucial for IT personnel because they are coordinating multi-faceted activities connected with the effective success of IT implementation (Bharadwaj, 2000).

RESEARCH MODEL OF THE STUDY

Based upon the both empirical and conceptual studies, it can be concluded that sustainable competitive advantage is affected by many factors. To name a few factors, integration between IT and business, shared knowledge between IT staffs and business units, technical skills of IT personnel, IT strategic planning, business knowledge of IT personnel, skillfulness IT staffs and designs. For this study, we have focused on both capabilities of IT personnel due to some reasons that we have mentioned above. As stated in the literature, it was found that technical skills of IT personnel positively contribute to the tangible and intangible IT-based resources but didn't give any evidence on the role of IT personnel on the sustainable competitive advantage. Therefore, this study tend to fill this gap by examining the role of both IT personnel capabilities on the creating and maintaining competitive advantages of Malaysian SMEs in the furniture industry.

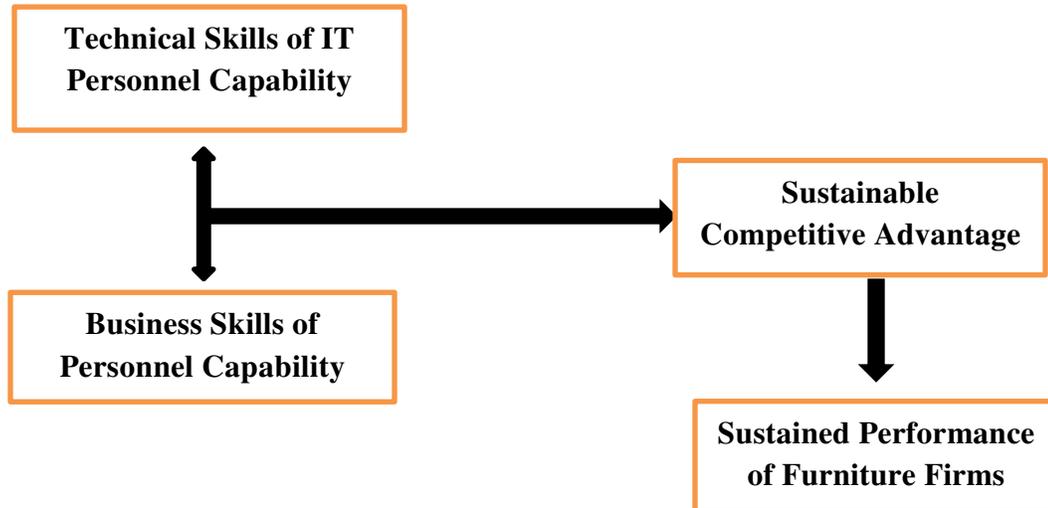


Figure 1
The Research Model of the Study

CONCLUSION

Modern SMEs are facing a high rate of business failure due to their incompetence in the creation and sustaining competitive advantage which in turn led to the underperformance of this sector even though most of the economies are highly reliant on it because of its major contribution to the economic earnings and employment creation. Following the aforementioned statement and based on the available empirical studies, most of the SMEs are suffering from the lack of IT personnel that serve as a critical source between firm's strategies and deploying business IT-applications.

Despite the few conceptual and empirical studies on the relationship between IT-based resources and sustainable competitive advantage, this research applied RBV and DCF to examine how Malaysian furniture firms leverage their IT personnel capability to manage and develop their IT based resource such as open software development, designs-based on IT that will lead to maintaining a competitive advantage.

The current study contributes to the body of knowledge through developing and testing a research model that establishes the role of IT personnel capability on the sustainable competitive advantage. Coming research can extend this conceptual paper to address additional organizational effects such as shared IT capabilities, IT effectiveness. Clearly, an examination of IT personnel skills provides practitioners and scholars a deep knowledge concerning the influence of IT personnel and how can be deployed to facilitate business needs and respond with IT trends especially in the furniture industry.

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