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Investigation on the Relationship between IT and Core Competency on the Sustainable Competitive Advantage of Malaysian SMEs

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Abstract

Intangible resources, capabilities, and core competency are seen as the main Building Blocks of Sustainable Competitive Advantages (BBSCA). What kind of resources and capabilities that should be owned by firms in order to generate sustainable competitive advantage (SCA) is still overlooked in strategic management approach. As well as how these resources and capabilities run to formulate core competency is still the main concern of strategic scholars. Importantly, successful sustainable competitive advantages highly depend on how firms are able to explore its unique resources and valuable capabilities in order to exploit their distinguished core competency from competitors. Therefore, the aim of this paper is to explore the relationship between these three main building blocks of SCA by empirically applying random sampling technique and using SPSS v18 for analyzing 38 collected surveys among Malaysian SMEs in the furniture industry. Face to face with six experts in the management information system background and two IT managers in the furniture industry were included in this study to examine the content validity of the instrument along with analyzing the reliability of items through the obtained data. Following the validity stage and analyzing the data, the results indicate the usefulness of the instrument that adapted in the study by testing the validity and reliability of the items.

Keywords: Sustainable Competitive Advantage, Resources, Capabilities, Core competency, SMEs

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Introduction to the Problem

In this new era of industrial revolution 4.0, acquiring sustainable competitive advantages (SCA) has become the fundamental objective and serious concern of top-managers. Therefore, the quest for gaining SCA is a serious issue for both academics and professionals (Peppard & Ward, 2016). However, the attention rose through the crucial role of the sustainable competitive advantage on the generating value and profits in the short, medium, and long-term of business (J. B. Barney & Clark, 2007). Since three decades ago, the debate among scholars regarding the antecedent and outcomes of the firm's sustainable competitive advantage still exist (Newbert, 2008).

Researchers Tirole (1988) and Porter (1985) from the Industrial Organization Theory (IOT) indicated that the product market and industry structure were the predominant factors determining the firm's performance. Also, they argued that firms generate and sustain competitive advantage from the external environment (minimization of transaction cost, economic scales and scope) and according to this stream of thought; the firms can strengthen their capability with the available opportunities that gained from external environment which led to creating competitive advantage (Srivastava, 2005).

Later on, scholars (J. Barney, 1991; Mata, Fuerst, & Barney, 1995) and (Teece, Pisano, & Shuen, 1997) from another schools of thought Resource-based View (RBV) and Dynamic Capability Theory (DCT) looks to an organization as a variety of resources and capabilities that incorporated together in order to achieve the desired goals within medium or long-term investment at the same time, they asserted that internal resources is the source of sustainable competitive advantage (J. Barney, 1991).

The resource-based view (RBV) of the firm indicates that the wide range of resources both tangible/intangible as well as the heterogeneity of these resources that accumulated over time will become the source of SCA. RBV proposed that the resources should meet J. B. Barney (1996) conditions, which led to generate and keep a competitive advantage and protect these advantages from competitors. While dynamic capability theory asserted that firms should select only those valuable and influential factors (capabilities) that have the significant impact on SCA (Teece et al., 1997).

These unique resources, favored capabilities, and valuable skills that possessed through a deep experience will play a strategic role in establishing an accurate map toward successful corporation outlook strategies, sustainability of advantages are therefore generated from this existing specific knowledge. Thus, these resources and specific capabilities along with the valuable knowledge that characterized by ambiguity and causality of possession are inimitable and heterogeneity factors for firm distinguished SCA (Peteraf, 1993).

In other side and more importantly, within an industry where resources are common and available, more similar rather than uniqueness as well more dynamic rather than rigidity thus, core competency that allows corporations to integrate these distinguished resources and capabilities will act as an enabling factor to convert these mutual and movable resources into specific processes that are unusual and static related to the firm which works as a strategic source of SCA (Kabue & Kilika, 2016).

A problem, therefore, exists for organizations that operate in the homogenous industry which resources are shared and easy to possess by others and neither rare nor heterogeneous and, thereby, organizations that seeking to formulate specific source of SCA with the available existing resources, they should develop core competency in order to switch the abundance similar resources into rare and unknown processes that rivals can't

duplicate it then, ultimately will lead to generate SCA (Kabue & Kilika, 2016; Makhloufi & Al-Erjal, 2014).

Following the aforementioned arguments, this study applies three main theories RBV, DCT along with Competence Theory to uncover the issue of SCA by examining the effect of these constructs on Malaysian SMEs SCA which bridging significant gap that emerged in the literature by proposing three main building blocks for those firms that seeking to successfully create long-term SCA. In addition, due to the limited studies that investigated the critical role of these building blocks as unique single organ (Intangible Resources, Dynamic Capabilities, and Core Competency) in a single study in order to discover the overall influence of these factors on SCA, and to explore what kind of relationships that emerged between factors and how they complement each other toward formulating long - term SCA. Then, studies that have been examined this important issue of SCA from three points of view (RBV, DCT, and CT) in a single study is overlooked, hence this research work is seeking to fill this significant gap that emerged in the literature.

Contribution/ Originality of the Study

This study is the first investigation from Strategic Management Approach (SMA) and Strategic Information System View (SISV), which combine these two main lenses to examine the critical issue of SCA that raised by top-managers across the globe regardless the business nature and its size. We proposed three valuable strategic inputs for successful generating SCA. In addition, this paper applied three theories to cover the phenomenon under investigation namely Resource-based View (RBV), Dynamic Capability Theory (DCT), and Competence Theory (CT). So far, published works that combine these three theories to explain the issue of SCA remain unclear day to date due to the lack of previous scholars view toward addressing this complicated and intertwined issue from different perspectives in a single study. To note, SCA is a strategy that implemented by the firm in order to generate business value for long-term at the same time competitors unable to understand the strategy of value creation. Thus, to achieve this strategic objective, only if the firms are able to explore its intangible resources that suit VRIN resources (Valuable, rare, inimitable, and non-substitutable) along with its unique capabilities which in turn lead to exploit their formulated core competency and thereby, creating SCA. Following previously published work since thirty years ago in both lens (SMA) and (SISV), very rare published work tries to uncover this serious issue of SCA that lead to survive/fail businesses especially in this fierce competition among rivals. To conclude, this study will fill significant gaps that emerged in the literature by linking and establishing critical relationships between constructs and analyzing these relationships causes and antecedents on the achieving SCA.

Literature Review

Relationship between Intangible IT Resources and Sustainable Competitive Advantage

The concept of IT resources as a strategic source of SCA has been strongly stressed in considerable empirical investigations, yet SCA provided by Intangible IT Resources is not well-examined (Ashrafi & Mueller, 2015). Therefore, this study seeks to test and discusses the role of building blocks of IT resources as a means of examining sustainability and develops a model founded on this RBV of the firm. The building blocks resources that proposed is considered as intangible resources because of its key critical role in generating

and sustaining competitive advantages. Researchers J. B. Barney and Clark (2007); Tian, Wang, Chen, and Johansson (2010); and Makhloufi L et al. (2018) in strategic management perspective gives more attention toward understanding the sources of sustained competitive advantages. The key reasons behind the need to study SCA are the significant effect of the unstable business environments on the firm's growth and survival (Efrat & Shoham, 2012).

In the beginning, scholars McFarlan and McKenney (1983) made the first early examination of the relationship between IT resources and SCA. The study mentioned that through IT resources, organizations would able to achieve major effect within its internal development, which leads to affect its daily-life operations and thereby it can be seen that IT-business applications as a key strategic and alternative resource to drive SCA. An empirical study made by Armstrong and Sambamurthy (1999) checked the critical effect of IT resources on the firms activities indicates that the entering new markets and providing a customer with value-added services, generating new products/services, partnerships relationships fidelity, advanced business operations along with unique digital marketing techniques which all these factors will enable an organization to generate a valuable competitive advantages that should be sustained. Another empirical study by Kearns and Lederer (2003) examined the effect of IT resources on the sustained competitive advantage indicating that through utilizing IT, firms are able to formulate effective links with suppliers and customers which in turn influence the buyer's decisions to move to firm products. Ultimately, allow firms to obtain unique capabilities as strategic weapon resources. In this study, the authors considered suppliers and customer's links as a competitive advantage that needs to be maintained.

Following Bharati and Chaudhury (2015) recommendation, the significant contribution of this study is that to present important findings regarding the effect of intangible IT resources on the SCA among Malaysian SMEs in the furniture industry. Due to the huge market turbulence so fast, like consumers' expectations and advanced technology changes, thus the current firms that obtain CA might have a very short lifespan (Qureshi & Wan, 2008). Accordingly, in different empirical studies concerning the role of IT resources on SCA conducted by Mata et al. (1995) found that IT resources not only create CA but also it can be maintained and developed (Makhloufi & Abu Rejal 2016). In addition, the study stressed that these intangible resources along with firm capabilities generate a piece of critical competencies Clemons and Row (1991) Barney, (1991), which in turn can basically lead to minimize operation costs and strategy of products differentiation. Consequently, this will ultimately lead to generate business value and enable a company to sustain its competitive advantage.

More clearly and regarding the competitiveness concept as a predictor of sustainability, an empirical investigation by Guzman et al. (2015) among Mexico SMEs indicating that the suitable use of IT is much better contribution in terms of business survival and empowering other internal resources which reducing operating costs and improving managerial tasks and thereby increasing responsiveness in line with business needs and customer wants. In the meantime, an empirical study by Mao, Liu, Zhang, and Deng (2016) analyzed the critical effect of IT resources on knowledge management capability of the Chinese firms where the findings indicate that IT resources (IT staff, IT relationship, IT infrastructure) have a positive effect on KMC which significantly contribute to the SCA (Ashrafi & Mueller, 2015).

IT Capability Role in the Achievement of Sustainable Competitive Advantage

Different perspectives with applied several methods have been produced multiple points of views among scholars regarding the contribution of IT capabilities and its role in the value creation as well as the extent of IT capability on the establishing sustainable competitive advantages.

Firm's capabilities refer to its capacity to mobilize, integrate, and deploy their valuable resources in order to formulate valuable competencies (Teece et al., 1997). The difference between resources and capabilities is that resources are visible but not necessarily tangible which can be independently valued and traded, whereas capabilities are unobservable and thereby surely intangible, can't be independently valued, and thereby become the key sources of the SCA (Makadok, 2001). Authors Ross, Beath, and Goodhue (1996) and Bharadwaj (2000) viewed IT capabilities concept as the capability of a company to collect, coordinate, combine and deploy IT-based resources. While Van der Heijden (2000) mentioned that the quantification of IT capabilities includes all the relationships between IT departments with other business units.

In addition, considerable research Ashrafi and Mueller (2015) studied the effect of IT capability in different dimensions on the several aspects of business and thereby they confirmed and established IT capability as a strategic resource for maintaining SCA. For example, a study by N. Wang, Liang, Zhong, Xue, and Xiao (2012) proposed and examined four capabilities that strategically contribute to the business value namely IT use capability, strategic planning based IT, IT-development capability, and IT management capability. Another study by Kearns and Sabherwal (2007) identified two capabilities that is IT strategic planning and Tactical deployment of IT project which demonstrated that these capabilities have a significant effect on creating and maintaining competitive advantages.

Bi, Davison, and Smyrnios (2015) have had recognized the strategic role of IT capabilities on the creating and sustaining competitive advantages. In fact, IT capabilities have had a significant effect on the firms in several ways (Bharadwaj, 2000). Early empirical studies R. M. Grant (1996); Mata et al. (1995), and Teece et al. (1997) have found that firms that utilize and manage perfectly IT resources such as IT staff, the relationship structures between business units and IT along with IT knowledge in a unique way are able to create valuable IT capabilities which ultimately leads to having much power to create SCA.

Due to the wide range of IT capability studies along proposing multiple dimensions that measure IT capability and so far no single definition and measure of IT capability factor as a strategic input for firm SCA (Makhloufi L et al. 2018). Thus, in this research, we proposed three dimensions to measure and capture IT capability effect in relation to SCA. These three dimensions will measure the influence of IT capability on SCA within the low-tech industry which no published work investigated the influence of IT capability among furniture SMEs, and thereby this study will provide significant evidence in IT/IS studies concerning how these capabilities based-IT are able to generate SCA.

Core Competency Effect on Sustainable Competitive Advantage

Kabue and Kilika (2016) indicate that firm competence refers to a corporate ability to deploy resources, normally in combination utilizing organizational processes to create the desired effect. Competence allows resources to be used and generated the potential for output. Resources are a source of a firm's capacity, but competencies for utilizing these resources to create business value and is the major source of firms SCA (Makhloufi L et al, 2018). Thus, core competencies must be difficult for competitors to copy. For the purpose

of achieving SCA, organizations are required to use and manage its competencies properly. The top management in any corporate must be capable of identifying, cultivating and exploiting core competencies. Teece et al. (1997) asserted that firms obtain SCA resulted from its renewing capabilities, integrating, and expanding their existing competencies and continuously creating new capabilities (Makhloufi & Abu Rejal 2014). Banerjee (2003) views a firm's core competencies as the capacity to operate effectively and responsibly, according to business opportunities.

Prahalad and Hamel (1990) clarify that for better fast future, well-managerial staff should sense opportunities through their forecasting pre-emptive capabilities that other firms can't copy. Thus, a sustainable competitive advantage will be generated. The core competency concept hence plays a significant role in linking or transforming resources into a sustainable competitive advantage for a firm. Also, Enz (2008) debate a single resource unable to be a source of SCA. Thus, firms should manage it's a variety of resources in novel ways to generate unique capabilities that competitors unable to obtain it. To achieve these inimitable capabilities, firms required to bundle multiple resources through the process of acquisition, development, and manage it altogether, with avoiding useless resources. Therefore, a development of SCA in this unique way is difficult to copy by competitors resulting from its ambiguity concerning how the source of capability was created.

Firms that create SCA based on its intangible valuable resources is hard to copy by competitors. G. L. Grant (2011) stated that human resources contribute to firms effectively in terms of their high skills and knowledge, and strategic decision-making capability. These valuable staff resources are responsible for building firms core competencies by using both their skills and knowledge that accumulated over time. Firms that deploying intangible resources such as skills, knowledge, and expertise to advance rare processes become a critical key competitive which competitors are often unable to imitate. For the purpose of developing SCA, Kabue and Kilika (2016) viewed that an organization that operates in the highest business environment, it must be responded with any business changes through keeping the reconfiguration of its existing resources and creating new capabilities. This can occur once firms are continuously deploying core competencies in order to develop new capabilities from existing resources. Also, core competencies can be used to develop any kind of advantage such as cost or differentiation advantages.

Researchers Hafeez, Zhang, and Malak (2002); Stelzer and Brecht (2011); Sanchez (1996); and McEvily, Eisenhardt, and Prescott (2004) identified the significant roles of both technological and marketing competencies that lead to creating SCA. Corporations with powerful technological competencies are able to use scientific knowledge to improve its products and advance the processes that provide new advantages and creating a valuable value for its customer (Rajkovič & Prašnikar, 2009; Stelzer & Brecht, 2011). Again, a firm that possesses unique marketing-driven competency is able to understand deeply customers' needs to promote the development of new products and manage its marketing activities that offer a unique value to customers (Vorhies, 1998).

As discussed above regarding the direct effect of each competency, technological and marketing competencies are also can be integrated together (Rothaermel, 2001; Y. Wang, Lo, & Yang, 2004).

Swink and Song (2007) proposed that marketing and technological competencies have a significant effect during the new products development stages, resulting in a higher return on investment. Competencies have a great effect on product competitive advantage over time.

The deployment of intangible resources such as skills and knowledge support a firm to turn its well-known and common resources into a variety of competencies that will be hard to be imitated by competitors and thus act as a source of SCA. Tacit knowledge along with valuable skills are key to an advancement of core competencies which firms are able to integrate its resources and capabilities to obtain SCA (Y. Wang & Lo, 2003).

IT Infrastructure Flexibility as a Strategic Dynamic Enabler Resource of Firm SCA

In this turbulent environments, firms are regarded flexibility as a critical competitive weapon Makhloufi L et al (2017) and appeared as one of the most key strategic driver in many modern organizations activities within operational, functional, technological and managerial level (Carrasco-Hernández & Jiménez-Jiménez, 2017; Schulze & Heidenreich, 2017). Scholars Pérez Pérez, Serrano Bedia, and López Fernández (2016) in management studies defined flexibility as the extent of the firm's capacity to control a variety of existing and potential procedures in order to implement these procedures in accurate time and more quickly allowing them to improve the control capacity of the management and enhance the overall capability of the corporation over its environment. Flexibility, therefore, offers a corporation the capability to control both inside and outside environments more efficiently. Hence, firms that well-controlled and sense their competitive environments, it can acquire the powerful competitive position (Brozovic, 2016). Authors Byrd and Turner (2001b) viewed flexibility as the firm's degree to manipulate things malleable. While Kumar (2004) stated that flexibility is the firm's capability to faster and economically adapt and deploy IT applications in line with business requirements and needs.

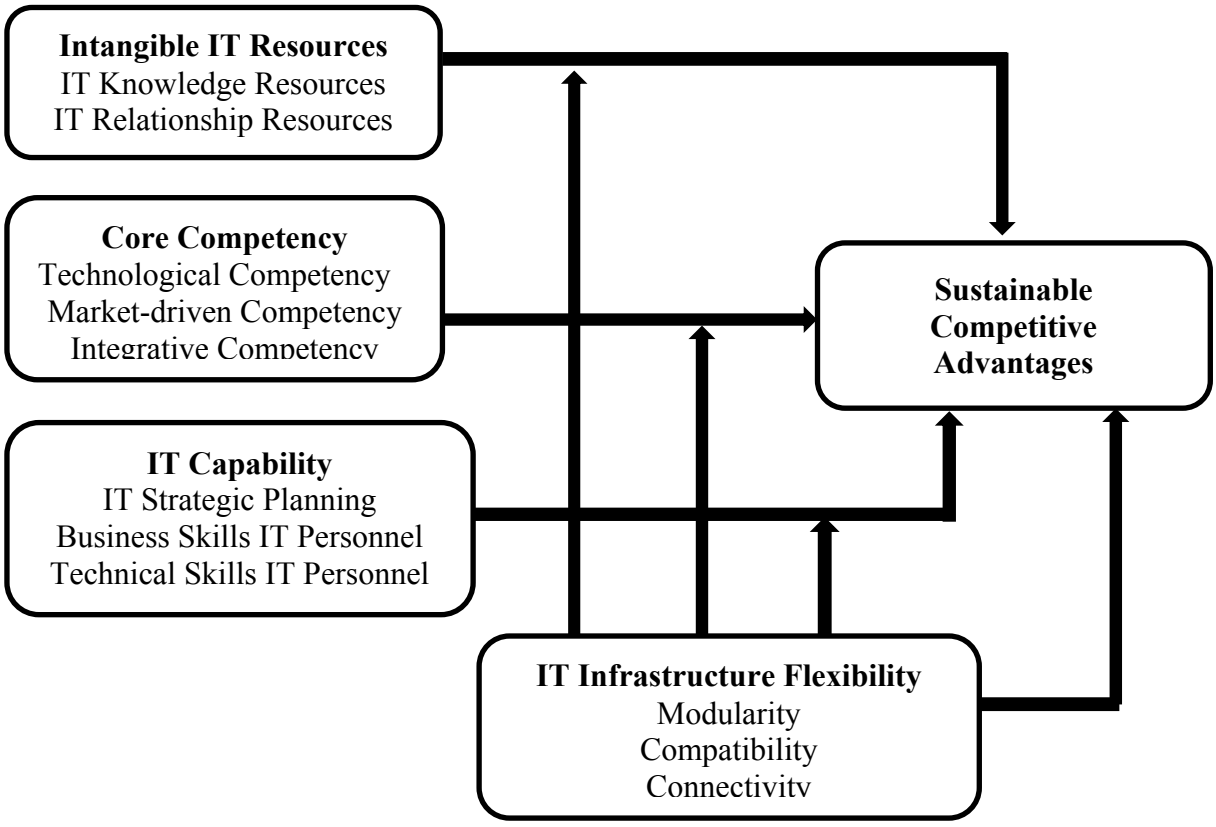
Several researchers Ashrafi and Mueller (2015) have viewed flexibility as one of the corporation abilities that possess considerable influence on the quickness to act or respond to outsider threats (Tiwana & Konsynski, 2010). Hence, flexibility allows firms to quick its decisions actions effectively. Actually, if IT system of the corporation is inflexible, firms it can be faster to reconfigure it along with business changes but with considerable cost to do so. To note, flexibility and agility are two distinct constructs. Flexibility is concerning malleability and the capability to assist firms to respond quickly to change requests and economically is a key antecedent of agility within the business context (Patten, Whitworth, Fjermestad, & Mahindra, 2005). Whereas agility is regarded as the quickness to sense and detector the ability of the responsiveness for emerging opportunities or hidden threats (Tiwana & Konsynski, 2010).

Researchers Duncan (1995) and Byrd and Turner (2001b) looked IT infrastructure as a set of shared IT-business applications that are a grounds of a corporation to enable communication within firms hierarchy and along with empowering the existing and future business applications. Therefore, IT infrastructure flexibility is the capability to readily and simply support various of software and hardware of the corporation as well as facilitating communication technologies, in order to promote easily flow of information within the firm's inside-outside (Makhloufi L et, 2017). Duncan (1995) she is the first scholar who identified IT infrastructure flexibility dimensions as three main building blocks that are connectivity, compatibility, and modularity which wide later researchers are agreed with the classifications where they have had built their studies on her model (Byrd & Turner, 2001a; Lim & Trimi, 2014; Mishra & Agarwal, 2010).

In fact, researchers in IT field have examined IT infrastructure flexibility as an independent variable Broadbent, Weill, and St. Clair (1999); Byrd and Turner (2001); (Chung, Rainer Jr, & Lewis, 2003); (Tiwana & Konsynski, 2010); and (Lim & Trimi, 2014) and as a moderator (Lin, Wang, Zhou, Sun, & Wei, 2011; Tallon & Pinsonneault, 2011). However, this study is important because it is among the fewer empirical study that

investigates the critical role of IT infrastructure as a dynamic enabler source of the firms towards facilitating the integration of the three building blocks that are resources, capabilities, and competencies to generate SCA. Flexibility contributes to the responding dimension of IT resources, IT capability, and core competence; therefore, IT infrastructure flexibility has a strategic effect on the firms SCA.

Figure 1. Research Framework



Source: Devised by Author

Methodology

Lackey, Wingate, Brink, and Wood (1998) stated that 10% of the sample size must be useful to conduct a pilot study, especially in social sciences studies. In addition, other scholars in marketing share the same view (Hulley et al., 2001). Moreover, Zikmund (2003) proposed that the size of the pre-testing sample it can be between 20 and 50 firms. The pilot study is a critical part of research which allows the researcher to identify and improve the appropriateness of the items (Neuman, 2013; Uma Sekaran & Bougie, 2011). One of the purposes of the pilot study is to avoid any ambiguous of items.

According to U Sekaran and Bougie (2013), the main reason for undertaking pilot survey include determining the validity and reliability of the survey items; confirming on the adequacy of the items, items construction in order to generate accurate results; assessing the items to determine their ability to generate better response; and to explore the ability of the respondents to provide the needed data. Therefore, in this regard

questionnaire was distributed to 55 furniture SMEs and only 38 SMEs participated. This sample size of thirty-eight and above satisfies the recommended pilot study range (Malhotra & Birks, 2007). The Cronbach's alpha coefficient test was carried out to measure the internal consistency reliability. A pilot test was conducted with furniture manufacturing SMEs to test the reliability of the instruments.

Measurement of Variables

Based on SMEs Corp website as an official data base by Malaysian Ministry of Small and Medium Enterprise, there are 958 wood-based product manufacturing in Malaysia. Applying Israel (2003) table, this study targeted 374 furniture firms as a sample size. This research used the structured survey with a seven-point Likert scale. The unit of analysis is a furniture firm and we targeted the manager/owner as a respondent (M. Hair, 2007). Measurement of the study construct was adapted from past IT/IS studies such as intangible IT resources (Ashrafi & Mueller, 2015); IT capability (Ashrafi & Mueller, 2015; Fink & Neumann, 2007); Core competency (Prahalad & Hamel, 1990; Y. Wang & Lo, 2003); IT infrastructure flexibility (Duncan, 1995; Terry Anthony Byrd, 2000), and sustainable competitive advantage (Tian et al., 2010). Also, the author checks the content and face validity to avoid any doubts about the survey scale in order to ensure that the scale is relevant to industry characteristics. Before applying the SPSS v18 statistical software to conduct the Cronbach alpha reliability analysis, the author asked six academic lecturers IT background from School of Technology Management and Logistics at Universiti Utara Malaysia and two IT managers in the furniture industry in order to confirm the content of items and its suitability to reflect the issue under investigation.

Results

Content and Face Validity

For confirming the items appropriateness and its relevant to the targeted industry, the author asks six IT background lecturers STML UUM and two IT managers in the furniture industry to give their comments and suggestions regarding the usefulness of items and its clarity as well as how these items are important to measure the constructs. Following the five academics suggestions and IT professionals comments, some items were removed and others rephrased properly to assess the factors as well as to ensure that all items are well-understood by respondents.

Reliability Test

Based on the reliability result test, it has been indicated that the composite reliability values of all constructs were ranging from 0.85 to 0.97. Scholars such as (J. F. Hair, Ringle, & Sarstedt, 2011; U Sekaran & Bougie, 2010) indicate that Cronbach's alpha coefficient of 0.60 is considered as an average reliability, while a coefficient of 0.70 or higher indicates that the instrument has a high-reliability standard. Table 5.1 present the summary of the reliability results. The results indicate that the Cronbach's alpha values of all factors under examination are all above 0.70. Therefore, given the established yardstick of 0.70, it can be confirmed that all the constructs are reliable, and thereby no need to change any item.

Table 1: Summary of Reliability Test for Pilot Study

Constructs	No	Cronbach	Composite Reliability

	Items	Alpha (α)	
1 IT Knowledge Resources	7	.903	0.941
2 IT Relationship Resources	6	.907	0.895
3 IT Strategic Planning	7	.906	0.936
4 Technical Skills IT Personnel	5	.907	0.926
5 Business Skills IT Personnel	7	.908	0.951
6 Technological Competency	5	.912	0.978
7 Market-driven Competency	9	.916	0.853
8 Integrative Competency	6	.920	0.945
9 Modularity	4	.904	0.901
10 Compatibility	6	.901	0.915
11 Connectivity	5	.911	0.926
12 Sustainable Competitive Advantage	5	.906	0.902

Conclusion

The fundamental objective of this study is to establish the link between the four factors and SCA along with applying a pilot test to confirm the validity of items and its reliability for subsequent main study. Thus, before running actual full-scale empirical investigation, a pilot test was applied to validate the instrument through checking the content of items along with face validity as well as a composite reliability of each construct. Content and face validity was conducted with several IT expert lecturers and professionals which providing useful feedback regarding items clarity and its importance to measure construct and thereby the instrument was revised again. Based on the getting pilot test result, all items are reliable which Cronbach's Alpha value was 0.9 above for all construct. This means that the items are clear and easy to be understood by respondents as well as it will properly measure the constructs.

Furthermore, this study examined SCA issue by applying three strategic management theories in single model which no published work has been examined this issue by integrating these theories to uncover the issue under investigation and hence, this is one of the main weaken of previous research that looking to explore SCA phenomena and its influence on business growth.

The proposed factors in this paper have been examined in different context and area of research by applying several methods and definitions. Yet, no single and regular definition were reported to each construct even though several studies have been addressed the effect of IT resources, IT capability, core competency, and IT flexibility on firm performance while investigating the influence of these factors on SCA is very limited and separated. Thus, doing this empirical investigation we will provide significant evidence in IT/IS studies regarding the issue of SCA that is totally different from business performance concept as started by (Newbert, 2008).

References

Armstrong, C. P., & Sambamurthy, V. (1999). Information technology assimilation in firms: The influence of senior leadership and IT infrastructures. Information Systems Research, 10(4), 304-327.

Ashrafi, R., & Mueller, J. (2015). Delineating IT resources and capabilities to obtain competitive advantage and improve firm performance. Information Systems Management, 32(1), 15-38.
Banerjee, P. (2003). Resource dependence and core competence: insights from Indian software firms. Technovation, 23(3), 251-263.
Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of management, 17(1), 99-120.
Barney, J. B. (1996). The resource-based theory of the firm. Organization science, 7(5), 469-469.
Barney, J. B., & Clark, D. N. (2007). Resource-based theory: Creating and sustaining competitive advantage: Oxford University Press on Demand.
Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: an empirical investigation. Mis Quarterly, 169-196.
Bharati, P., & Chaudhury, A. (2015). SMEs and competitiveness: The role of information systems.
Bi, R., Davison, R. M., & Smyrnios, K. X. (2015). IT and fast growth small-to-medium enterprise performance: An empirical study in Australia. Australasian Journal of Information Systems, 19.
Broadbent, M., Weill, P., & St. Clair, D. (1999). The implications of information technology infrastructure for business process redesign. Mis Quarterly, 159-182.
Brozovic, D. (2016). Strategic Flexibility: A Review of the Literature. International Journal of Management Reviews.
Byrd, T. A., & Turner, D. E. (2001a). An exploratory analysis of the value of the skills of IT personnel: Their relationship to IS infrastructure and competitive advantage. Decision Sciences, 32(1), 21-54.
Byrd, T. A., & Turner, D. E. (2001b). An exploratory examination of the relationship between flexible IT infrastructure and competitive advantage. Information & Management, 39(1), 41-52.
Carrasco-Hernández, A. J., & Jiménez-Jiménez, D. (2017). Knowledge management, flexibility and firm performance: The effects of family involvement. European Journal of Family Business.
Chanopas, A., Krairit, D., & Ba Khang, D. (2006). Managing information technology infrastructure: a new flexibility framework. Management Research News, 29(10), 632-651.
Chung, S. H., Rainer Jr, R. K., & Lewis, B. R. (2003). The impact of information technology infrastructure flexibility on strategic alignment and application implementations. The Communications of the Association for Information Systems, 11(1), 44.
Clemons, E. K., & Row, M. C. (1991). Sustaining IT advantage: The role of structural differences. Mis Quarterly, 275-292.
Duncan, N. B. (1995). Capturing flexibility of information technology infrastructure: A study of resource characteristics and their measure. Journal of management information systems, 12(2), 37-57.
Efrat, K., & Shoham, A. (2012). Born global firms: The differences between their short- and long-term performance drivers. Journal of World Business, 47(4), 675-685.
Enz, C. A. (2008). Creating a Competitive Advantage by Building Resource Capability The Case of Outback Steakhouse Korea. Cornell Hospitality Quarterly, 49(1), 73-78.

Fink, L., & Neumann, S. (2007). Gaining agility through IT personnel capabilities: The mediating role of IT infrastructure capabilities. Journal of the Association for Information Systems, 8(8), 440.
Grant, G. L. (2011). Information technology and its role in creating sustainable competitive advantage.
Grant, R. M. (1996). Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. Organization science, 7(4), 375-387.
Guzman, G., Torres, G., Serna, M., & Garcia, S. (2015). Information Technology and Competitiveness: The Mexico's SMEs Context. Paper presented at the Proceedings of the International Symposium on Emerging Trends in Social Science Research.
Hafeez, K., Zhang, Y., & Malak, N. (2002). Core competence for sustainable competitive advantage: A structured methodology for identifying core competence. IEEE transactions on engineering management, 49(1), 28-35.
Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. Journal of Marketing theory and Practice, 19(2), 139-152.
Hair, M. (2007). Samouel, and Page, Criteria for Assessing Measurement Scale, Research Methods for Business: John Wiley & Sons.
Hulley, S. B., Cummings, S. R., Browner, W. S., Grady, D. G., Hearst, N., & Newman, T. (2001). Conceiving the research question. Designing clinical research, 335.
Israel, G. D. (2003). Determining Sample Size. Program Evaluation and Organizational Development, IFAS, University of Florida. PEOD-5: October.
Kabue, L. W., & Kilika, J. M. (2016). Firm Resources, Core Competencies and Sustainable Competitive Advantage: An Integrative Theoretical Framework. Journal of Management and Strategy, 7(1), p98.
Kearns, G. S., & Lederer, A. L. (2003). A resource-based view of strategic IT alignment: how knowledge sharing creates competitive advantage. Decision Sciences, 34(1), 1-29.
Kearns, G. S., & Sabherwal, R. (2007). Antecedents and consequences of information systems planning integration. IEEE transactions on engineering management, 54(4), 628-643.
Kumar, R. L. (2004). A framework for assessing the business value of information technology infrastructures. Journal of management information systems, 21(2), 11-32.
Lackey, N., Wingate, A., Brink, P., & Wood, M. (1998). Advanced design in nursing research.
Lim, S., & Trimi, S. (2014). Impact of Information Technology Infrastructure Flexibility on the Competitive Advantage of Small and Medium Sized-Enterprises. Journal of Business & Management, 3(1), 2291-1995.
Lin, G. C., Wang, C. C., Zhou, Y., Sun, Y., & Wei, Y. D. (2011). Placing technological innovation in globalising China: production linkage, knowledge exchange and innovative performance of the ICT industry in a developing economy. Urban Studies, 48(14), 2999-3018.
Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. Strategic management journal, 22(5), 387-401.
Makhloufi, L., & Al-Erjal, H. M. E. A. (2014). THE EFFECT OF CORE COMPETENCE ON THE SUSTAINABLE COMPETITIVE ADVANTAGE OF MALAYSIAN SMEs FURNITURE INDUSTRY. JOURNALE OF HUMANITIES, LANGUAGE, CULTURE & BUSINESS (HLCB). Vol. 1: no. 3 (2017) page 90-99 | www.icohlcb.com eISSN: 01268147

Makhloufi, L., & Al-Rejal, H. M. E. A. FROM IT TOWARD SMES COMPETITIVE ADVANTAGE HUMAN RESOURCE MANAGEMENT PERSPECTIVE. THE 1ST INTERNATIONAL CONFERENCE ON ISLAM & CONTEMPORARY ISSUES IN THE ISLAMIC WORLD: CHALLENGES & WAY FORWARD (ICIC-2016). Academy of Is-lamic Studies, University of Malaya Kuala Lumpur, Malaysia 5 – 6 December 2016.

Makhloufi, L., Noorulsadiqin Azbiya Yaacob., Fadhilah Yamin. THE MODERATING EFFECT OF IT INFRASTRUCTURE FLEXIBILITY ON THE RELATIONSHIP BETWEEN IT RESOURCES AND SUSTAINING COMPETITIVE ADVANTAGE OF MALAYSIAN SMES. Journal of Humanities, Language, Culture and Business (HLCB). Vol. 1: no. 2 (2017) page 50-57 | www.icohlcb.com | eISSN : 01268147 |

Makhloufi, L., Yaacob, N. A., & Yamin, F. THE DYNAMIC EFFECT OF IT INFRASTRUCTURE FLEXIBILITY ON THE SUSTAINABLE COMPETITIVE ADVANTAGE OF MALAYSIAN SMES IN THE FURNITURE INDUSTRY. Interna-tional journal of Business Quantitative Economics and Applied Management Research. ISSN: 2349-5677. Vol-4, Issue-8, January-2018

Makhloufi, L., Noorulsadiqin Azbiya Yaacob., Fadhilah Yamin. EFFECT OF IT PERSONNEL CAPABILITIES ON THE SUSTAINABLE COMPETITIVE ADVANTAGES. Proceedings of the 2nd Conference on Technology & Operations Man-agement (2ndCTOM) Universiti Utara Malaysia, Kedah, Malaysia, February 26-27, 2018.

Malhotra, N. K., & Birks, D. F. (2007). Marketing research: An applied approach: Pearson Education. Limited. 連結.

Mao, H., Liu, S., Zhang, J., & Deng, Z. (2016). Information technology resource, knowledge management capability, and competitive advantage: the moderating role of resource commitment. International Journal of Information Management, 36(6), 1062-1074.

Mata, F. J., Fuerst, W. L., & Barney, J. B. (1995). Information technology and sustained competitive advantage: A resource-based analysis. Mis Quarterly, 487-505.

McEvily, S. K., Eisenhardt, K. M., & Prescott, J. E. (2004). The global acquisition, leverage, and protection of technological competencies. Strategic management journal, 25(8-9), 713-722.

McFarlan, F. W., & McKenney, J. L. (1983). Corporate information systems management: The issues facing senior executives: Irwin Professional Publishing.

Mishra, A. N., & Agarwal, R. (2010). Technological frames, organizational capabilities, and IT use: an empirical investigation of electronic procurement. Information Systems Research, 21(2), 249-270.

Neuman, W. L. (2013). Social research methods: Qualitative and quantitative approaches: Pearson education.

Newbert, S. L. (2008). Value, rareness, competitive advantage, and performance: a conceptual-level empirical investigation of the resource-based view of the firm. Strategic management journal, 29(7), 745-768.

Patten, K., Whitworth, B., Fjermestad, J., & Mahindra, E. (2005). Leading IT flexibility: anticipation, agility and adaptability. AMCIS 2005 Proceedings, 361.

Peppard, J., & Ward, J. (2016). The strategic management of information systems: Building a digital strategy: John Wiley & Sons.

Pérez Pérez, M., Serrano Bedia, A. M., & López Fernández, M. C. (2016). A review of manufacturing flexibility: systematising the concept. International Journal of Production Research, 54(10), 3133-3148.
Peteraf, M. A. (1993). The cornerstones of competitive advantage: a resource-based view. Strategic management journal, 14(3), 179-191.
Porter, M. E. (1985). Competitive advantage: creating and sustaining superior performance. 1985. New York: FreePress.
Prahalad, C., & Hamel, G. (1990). Core competency concept. Harvard Business Review, 64.
Qureshi, M. S., & Wan, G. (2008). Trade Expansion of China and India: Threat or Opportunity? The World Economy, 31(10), 1327-1350.
Rajkovič, T., & Prašnikar, J. (2009). Technological, marketing and complementary competencies driving innovative performance of Slovenian manufacturing firms. Organizacija, 42(3), 77-86.
Ross, J. W., Beath, C. M., & Goodhue, D. L. (1996). Develop long-term competitiveness through IT assets. Sloan management review, 38(1), 31.
Rothaermel, F. T. (2001). Complementary assets, strategic alliances, and the incumbent's advantage: an empirical study of industry and firm effects in the biopharmaceutical industry. Research policy, 30(8), 1235-1251.
Sanchez, R. (1996). Strategic product creation: Managing new interactions of technology, markets, and organizations. European management journal, 14(2), 121-138.
Schulze, M., & Heidenreich, S. (2017). Linking energy-related strategic flexibility and energy efficiency–The mediating role of management control systems choice. Journal of Cleaner Production, 140, 1504-1513.
Sekaran, U., & Bougie, R. (2010). Theoretical framework In theoretical framework and hypothesis development. Research Methods for Business: A Skill Building Approach, United Kingdom: Wiley, 80.
Sekaran, U., & Bougie, R. (2011). Business Research Methods: A skill-building approach: New York: McGraw-Hill.
Sekaran, U., & Bougie, R. (2013). Elements of research design: Chichester: John Wiley & Sons.
Srivastava, S. C. (2005). Managing core competence of the organization. Vikalpa, 30(4), 49-64.
Stelzer, B., & Brecht, L. (2011). Technological Competence and Sustainable Competitive Advantage of Technology-Intensive SMEs-a Quantitative Approach. Paper presented at the European Conference on Innovation and Entrepreneurship.
Street, C. T., & Meister, D. B. (2004). Small business growth and internal transparency: The role of information systems. Mis Quarterly, 473-506.
Swink, M., & Song, M. (2007). Effects of marketing-manufacturing integration on new product development time and competitive advantage. Journal of Operations Management, 25(1), 203-217.
Tallon, P. P., & Pinsonneault, A. (2011). Competing perspectives on the link between strategic information technology alignment and organizational agility: insights from a mediation model. Mis Quarterly, 463-486.
Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. Strategic management journal, 509-533.
Terry Anthony Byrd, D. E. T. (2000). Measuring the flexibility of information technology infrastructure: Exploratory analysis of a construct. Journal of management information systems, 17(1), 167-208.

Tian, J., Wang, K., Chen, Y., & Johansson, B. (2010). From IT deployment capabilities to competitive advantage: An exploratory study in China. Information Systems Frontiers, 12(3), 239-255.

Tirole, J. (1988). The theory of industrial organization: MIT press.

Tiwana, A., & Konsynski, B. (2010). Complementarities between organizational IT architecture and governance structure. Information Systems Research, 21(2), 288-304.

van der Heijden, H. (2000). Measuring IT core capabilities for electronic commerce: results from a confirmatory factor analysis. Paper presented at the Proceedings of the twenty first international conference on Information systems.

Vorhies, D. W. (1998). An investigation of the factors leading to the development of marketing capabilities and organizational effectiveness. Journal of strategic marketing, 6(1), 3-23.

Wang, N., Liang, H., Zhong, W., Xue, Y., & Xiao, J. (2012). Resource structuring or capability building? An empirical study of the business value of information technology. Journal of management information systems, 29(2), 325-367.

Wang, Y., & Lo, H.-P. (2003). Customer-focused performance and the dynamic model for competence building and leveraging: A resource-based view. Journal of Management Development, 22(6), 483-526.

Wang, Y., Lo, H.-P., & Yang, Y. (2004). The constituents of core competencies and firm performance: evidence from high-technology firms in China. Journal of Engineering and Technology Management, 21(4), 249-280.

Zikmund, W. G. (2003). Sample designs and sampling procedures. Business research methods, 7, 368-400.