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Innovation Culture in SMEs: The Importance of Organizational Culture, Organizational Learning and Market Orientation

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Abstract:

Academic and practitioner have considered innovation as an approach to produce value to customer in order to remain competitive in the market. However, previous studies on innovation culture among small and medium enterprises (SMEs) have received little attention and SMEs need to inculcate the innovation culture in order to generate innovation. Hence, the purpose of this paper is to investigate empirically the influence of organizational culture, organizational learning and market orientation on innovation culture. A questionnaire-based survey was conducted to gather data from SMEs in Malaysia. Questionnaires were distributed and gathered with a total of 183 usable responses. The analysis was conducted via SMART PLS to produce interesting findings. Findings suggest that all dimensions of organizational culture (adaptability, involvement, mission and consistency) have an influence on innovation culture, organizational learning in terms of information acquisition and behavioural & cognitive have an impact on innovation culture. Finally, only competitor orientation influences innovation culture. Although SMEs play an important role within the Malaysia economy, their contribution to innovation is small and marginal. This study makes an important contribution by providing information to SMEs on the elements that could nurture innovation culture in their organizations. As such, it is hoped that this study will generate interest among the researchers to reach more conclusive evidence about the practice of innovation culture among SMEs in Malaysia. More effort should be devoted to comprehending the concept of innovation culture among SMEs from the context of developing country. The findings combined with the suggestions may offer alternative insights on innovation culture and extend a basic framework for further investigation.

Keywords: innovation culture, organizational culture, organization learning, market orientation, SMEs

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1 Introduction

Small and medium enterprises (SMEs) are private sectors that can be considered as vital entities which serve as the backbone of Asian economies (Nasir, Al Mamun, and Breen 2017; Yoshino, Taghizadeh-Hesary, Charoen-sivakorn & Niraula, 2016). SMEs no doubt contribute to the economic development for a country and the accomplishments of SMEs also indicate the efficacy of government policy in nurturing entrepreneurial culture in an economy. In Malaysia, initially, the importance of SMEs has been articulated in the New Economy Policy in 1971 and then a concerted effort to aid the development of SMEs has been put forward in the Malaysia Industrial Plan (IMP) from 1986 to 1995, IMP2 from 1996 to 2005 and IMP3 from 2006 to 2020 (National SME Development Council, 2011). SMEs in Malaysia compose of 99.2% of total business establishments or totalling about 548,267 enterprises. Malaysian government provides many initiatives to strengthen the development of SMEs and consequently they are expected to continue and enhance their significant role in driving Malaysia towards a developed and inclusive nation (11th Malaysia Plan, 2015).

Moving forward, productivity and innovation have become the basis for economic growth and can be a source of sustainable competitive advantage for a country. Innovation is undeniably important to assist SMEs to generate their competitive advantage in terms of innovation and differentiation in the market (Galia and Legros 2004). In fact, innovation is extensively acknowledged as a key factor in the competitiveness of firms and nations (OECD 2007). As such, SMEs need to be creative and innovative in order to handle the encountered crisis that occurred during the growth development. In other words, innovation is expected to be essential for SMEs' survival. Thereby, to ensure the smoothness of innovation process the question on "why Malaysian

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SMEs are still left behind in terms of competitiveness and innovativeness" despite of various programmes and strategies provided by the government to guide them in enhancing their innovation need to be scrutinized. Seemingly, SMEs in Malaysia are not achieving superior performance and this is evidenced by the SMEs' contribution to GDP at only 32% (SME Masterplan, 2012–2020). In fact, Malaysian SMEs' contribution to the nation's GDP is comparatively small when compared with other countries. According to "The Asia Pacific SME Cloud Computing Attractiveness Index" in 2015, Malaysia ranked second last with only 32.7% of GDP contribution from SMEs as compared to other neighbouring countries such as Indonesia (57.1%), Singapore (50%), Vietnam (40%), Thailand (36.6%), Philippines (35.7%) and Taiwan (30.23%).

For innovation performance in Malaysia, unfortunately, the contribution is relatively low when compared to neighbouring countries. This is supported by the global innovation index (GII) in 2016 in which Malaysia was ranked 35th in 2016 compared 32nd in 2015 and 33rd in 2014. This indicates that Malaysia's innovation performance has reduced compared to Singapore (6th), South Korea (11th), Hong Kong (14th) and Japan (16th) in 2016 (GII2016). Apparently, Malaysian SMEs are still lagging in terms of innovation. In fact, their innovation success rate is lower than the desired rate as a result of high risk, intricacies and ambiguities (Parida, Westerberg, and Frishammar 2012). In this situation, they need to intensify their business performance by enhancing their innovative capabilities. In fact, it is implicit in the literature that one of the elements that can stimulate the innovation activities is the culture of innovation (Padilha & Gomez, 2016; Hanifah, Abdul-Halim, Ahmad & Vafaei-Zadeh, 2017). Malaysian government also has taken additional steps to promote and instil innovation culture among the SMEs in spurring Malaysia towards an innovation-centred economy. However, regrettably the adoption of innovation as a culture by the SMEs particularly in developing countries including Malaysia is minimal and still at an early phase.

Since Malaysian government plans to transform its nation's economy by adopting innovative performance via innovation culture among SMEs (Hanifah et al. 2017), this study warrants significant attention. Although, there are many articles published on innovation, of interest, very few studies have deliberated on factors that encourage innovation culture that stimulate to the development of innovative performance among SMEs. There are both empirical and theoretical studies that examine the linear or causal relationship of organizational culture, market-orientation, learning orientation, and henceforth, their joint effect on innovation. Nevertheless, most of the most empirical studies centred their attention on large organizations of western/developed nations and ignore the SMEs in general, and specifically those of developing nations (Raju, Lonial, and Crum 2011). This is because, organizational culture, market orientation and organizational learning are generally less formal, less organized and less sequential in SMEs (Anderson and Boocock 2002; Peterson 1988). As such, systematic investigations on the relationship of organizational culture, market-orientation and organizational learning and their impact on innovation culture are vital to SMEs and scholars. To address this deficiency, the present study presumes that innovation culture could be achieved by leveraging the organizational culture, organizational learning and market orientation.

This study begins with a literature review on innovation culture, the hypotheses development on organizational culture, market orientation and learning orientation on innovation culture in SMEs. This is followed by an outline of the methodology. The findings section reports on findings in relation to the hypotheses. The study's findings are discussed in relation to previous literature. Lastly, conclusion and recommendation are presented.

2 Literature Review

2.1 Innovation Culture among SMEs

Innovation is seen as deviating from the principles, processes and practices of traditional management, or a deviation from usual organizational forms that change the manner a work is done (Hamel et al. 1994). Innovation is deemed as embracing new idea or behaviour by the organization; which may be of new product, service or technology (Beyene, Shi & Wei, 2016; 2003). As such, innovation can be significant or gradual whereby it can be the execution of discoveries and process in which new output, i.e. product, system, service or process, is realized (Gloet and Terziovski 2004; Minh & Hjortso, 2015). In similar vein, innovativeness is a process of transforming opportunity into practical use (Keskin, 2015) and occurs only when it is practised (Sharifirad and Ataei, 2012). Organization that has the capability to innovate will obtain better feedback from the environment, easier access to capabilities needed to improve organizational performance and competitive advantage. Generating value through innovation is undoubtedly a winning strategy. Nevertheless, some organizations will be much better prepared than others to seize the opportunities offered. In this vein, SMEs will be at a considerable disadvantage relative to their larger counterparts. The latter will perpetually have more financial clout, acquire a wider range of skills, greater access to necessary assets pertaining to production and distribution and be better

equipped to safeguard intellectual property (Minh and Hjortsø 2015). However, big is not always better and it does not indicate that SMEs to be all doom because innovation often relates to part of a product rather than the whole (Zhu, Wittmann, and Peng 2012). SMEs may be able to specialize in specific areas to create new ideas and solutions. For instance, SMEs can get the upper hand in certain conditions like: flexible enough to exploit new technological opportunities; collaborate with strong partnerships which enhance the knowledge and finances needed to obtain key technological competencies; overcome technological limitations by innovating through the use of formal non-R&D inputs and operating within less technologically intense environments as well as to be intuitive and early to recognize changes in consumer preferences and market trends in order to identify new opportunities (Keskin, 2015).

Nevertheless, for SMEs to achieve innovation, they need to have shared beliefs and understanding (Minh and Hjortsø 2015); whereby the activities of innovation occur within the stipulated social and economic contexts, as well as the cultural and political tradition of the country (Wan Ismail & Abdul Majid, 2007). Various studies have examined the relationship between innovation orientation, and size, age and organizational structure (Laforet and Tann 2006); firm–professional relationship (Zhu, et al; 2012); innovation capabilities, relationship with knowledge centres and R&D expenditure (Keizer, Dijkstra, and Halman 2002); and customer and market orientation (Keskin, 2015; Appiah-Adu and Singh 1998). Given the intricacies and difficulties of innovation, it is realized that cultural perspective may be accepted in understanding innovation (Jaskyte 2004; Brettel, Chomik, and Flatten 2015). In this respect, an innovative organization, including an SME, needs to embrace “a culture of pride and climate of success” (Anahita et al. 2012; Dobni 2008; Kanter 1983). In line with this, Tushman and O’Reilly Tushman and O’Reilly (1997) also posit culture as a part of imperative elements in innovation management. This is because to succeed in every business environment, the understanding of values that drive and promote the culture of the environment is important.

Culture of innovation is important as it strengthens the cohesion, the loyalty and some clear rules of attitudes and appropriate behaviours (Dobni 2008; Mahmoud et al. 2017). In this context, SMEs play a significant role in the creation of cultural context that encourages innovation performance. According to Dobni (2008), innovation culture can be categorized into four categories namely the intention to be innovative, the infrastructure to support innovation, the behaviour to influence market orientation and value orientation and the environment to implement innovation. In this respect, innovation culture is deemed to be of multi-dimensional; however, in the context of SMEs which are fragile and small in nature, the innovation culture is considered as uni-dimensional to encompass the holistic approach innovation culture in which communication and network are optimized, and flexible structure, empowering employees, risk taking, orientation, learning and knowledge are welcome (Hanifah 2017). While the culture of innovation is overwhelming among SMEs (Terziowski 2010; Masurel, Montfort, & Lentink, 2003; Rujirawanich, Addison, and Smallman 2011), the concern towards innovation culture in Malaysia is getting attention (Hanifah et al. 2017). Halim et al. (2015) have pointed out that there seems to be an apparent lack of empirically validated benefits in Malaysian SMEs to adopt innovation culture. Seen, Singh, and Jayasingam (2012) also stated that innovation culture is considered still young in Malaysian industry and it is therefore to be great interest to investigate this subject in SME context. As such, it would be very interesting to dwell further on the practice of innovation culture among SMEs in Malaysia.

3 Hypotheses Development and Research Framework

3.1 Organizational Culture and Innovation Culture

Culture is not a new phenomenon in SME and is entrenched inside the literature base. The word culture comes from Latin root *colere* (to inhabit, to cultivate, or to honour). The current literature shows that “it is the way we do things around here” and most organizations are aware of the enterprise culture that has become well established in the Malaysia over the past two decades (Ismail & Majid, 2007; Abdullah et al. 2014). The Eleventh Malaysian Plan (2016) states that productivity and innovation are the important pillars in driving the economy towards the desired stage. In doing so, the Malaysian government has determined that it will apportion supporting resources as to assist in the development of Malaysian SMEs. In order to unlock innovation potential and boost the domestic, regional and global competitive advantage among Malaysian SMEs, the physical resources need to be deployed in strengthening the innovation activities (Hanifah et al. 2017).

Creativity, novelty and innovation are highly vital in supporting innovation and this is normally motivated by organizational culture (Sharifirad & Atei, 2012). Organizational culture is a significant instrument (Sackmann 1991) and acts as a control mechanism to establish organizational commitment as well as to assist the organization in adapting to the external changes. In other words, organizational culture is also implied as the core for innovative activities implemented by the organization. How does an innovative organization look like? It is where its entrepreneur is enthusiastic and highly convinced to keep on experimenting new ideas (Brettel,

Chomik, and Flatten 2015). Here, the entrepreneur possesses the right knowledge, skill and ability to successfully formulate and implement new ideas. Innovation will only prosper if the work environment supports the endeavours (Kaasa & Vadi, 2010) in which for SMEs to come out with creative products and services, they have to be given the chance to embrace the culture on innovation that allow them to search, examine and experiment (Fauzi et al. 2010). Innovation culture revolves around generating a culture where new ideas are formulated, valued and supported (Sarooghi, 2015; Streets and Boundary 2004). Here, organizational culture might influence innovation culture, rendering it prevalent or uncommon in parts of organizations (Sharifirad Sadegh and Ataei 2012; Brettel, Chomik, and Flatten 2015). In fact, organizational culture has to be properly nurtured as it may encourage the organizations to foster creativity and originality through the innovation culture (Mahmoud et al. 2017; Gandotra 2010). According to Denison's model (1990) of organizational culture, there are four cultural traits namely involvement, consistency, adaptability and mission. Involvement culture refers to strong sense of psychological ownership and commitment to the organizations, while consistency culture is a situation where leaders and followers possess common mindset and high degree of conformity. Adaptability refers to the capacity for internal changes in response to external fluctuations. Finally, missions denote long-term vision encompassing strategic orientation and intent, goals, objectives and vision (Denison, Janovics, and Young 2005).

In this context, there are almost next to none study that investigate the relationship between organizational culture and innovation culture among SMEs in Malaysia and this may limit comprehensive understanding on the dynamic of the link between organizational culture and innovation culture. To pursue innovation, SMEs need to possess strong culture in terms of commitment, perseverance, loyalty, stability and willing to upgrade their creativity knowledge and skill in order to embrace the concept of innovation culture. Without this, it would be difficult for the organizations to upgrade their business innovativeness in the turbulence environment. SMEs in particular need to have these four basic elements of organizational culture (adaptability, involvement, mission and consistency) in order to influence innovation culture in two ways, i.e. through socialization and through basic values, assumptions and beliefs that serve as the guideline for behaviours. In this respect, a culture supporting innovation encourages behaviour that appreciate creativity, risk taking, freedom, teamwork, value seeking and solutions oriented, instil trust and respect and respond swiftly in making decisions (Padilha and Gomes 2016). These arguments lead to the first hypothesis:

H1: Organizational culture (adaptability, involvement, mission and consistency) relates positively to innovation culture.

3.2 Organizational Learning and Innovation Culture

In a dynamic and changing environment, innovation is crucial to foster long-term stability, growth and sustainable performance (Cook 1998). In order to stimulate innovation, previous scholars argued that learning orientation is essential to boost innovation. This is because, organizational learning is a process related to the generation of new knowledge and ideas (e.g. Perez Lopez et al., 2004; Dishman and Pearson 2003; Huber 1991), hence affects organizational innovation (Smith 2005). Many past studies have noted on the positive relationship between organizational learning and organization innovation (e.g. Calantone, Tamer Cavusgil, and Zhao 2002; Jiménez-Jiménez and Sanz-Valle 2011). In this respect, organizations that are committed to learning are likely to possess state-of-the art technology which leads to greater innovation capability, both in products and processes (Calantone, Tamer Cavusgil, and Zhao 2002). Nonetheless, learning-oriented organizations acknowledge that for innovation to take place, there is a need for an organizational culture, namely innovation culture in which creativity and innovative behaviour are stimulated and fostered among them. In this connection, innovation culture nurtures new ideas, and encourages internally based capabilities to successfully adopt new knowledge, processes and products (Hurley and Hult 1998). In Malaysia, there is evidence that SMEs practice organizational learning on innovation culture to enhance innovation performance (Abdul Halim et al. 2015). SMEs tend to have flexible innovation cultures, which are normally categorized by relatively low resistance to change, low risk aversion and tolerance of ambiguity. As such, SMEs are open for new learning orientation which enables the SMEs to improve their competitiveness and responsive to change (Halim et al. 2014).

Huber (1991) and Lopez et al (2004) view organizational learning as a mix of four processes, namely information acquisition, information distribution, information interpretation and organizational memory. The creation, acquirement and transfer of knowledge are strong in organizations with good learning culture, as well as changing the behaviour to echo the recent knowledge and insight (Garvin 1993). Therefore, organizations focusing on organizational learning must first acquire information, interpret it to fully understand its meaning and transform it into knowledge. Additionally, the important part is to implement behaviour and cognitive changes – converting words into action must also put into place (Tsang 1997; Cook and Yanow 1993). The cognitive aspect is normally concerned with knowledge, understanding and insights. However, the issue to be

cautious is whether a change in actual of potential behaviour that is required. By potential behavioural change, the lesson learned by an organization would affect its future behaviour (Tsang 1997). Even though the literature agrees on the relationship between organizational learning and innovation, there are very limited studies that adopt a cultural approach for measuring the organizational learning particularly among SMEs (Keskin 2006; Lee and Tsai 2005; Mavondo, Chimhanzi, and Stewart 2005; Ussahawanitchakit 2008). Past research had focused on the orientation of innovation, i.e. the degree of firm culture in promoting and supporting innovation (Hult, Hurley, and Knight 2004; Hurley and Hult 1998; Keskin 2006; Lee and Tsai 2005; Ussahawanitchakit 2008) and heading towards an innovation culture holistic model, a vital element of organization learning. Yet the primary essence behind such achievement is instilling innovation culture that encourages the improvement in know-how and technology (Mahmoud et al. 2017) is still lagging behind. In this connection, organizational learning may influence innovation culture in three ways: as learning occurs through acquisition, organizations tend to interact with environment, as learning is acquired, the organizations must know how to interpret the knowledge and spur the culture of creativity and ability to understand and finally as organization knows how to interpret the knowledge, it is now to put them into action. Based on the above arguments, it is proposed that:

H2: Organizational learning (information acquisition, information interpretation and behavioural & cognitive) relates positively to innovation culture.

3.3 Marketing Orientation and Innovation Culture

Previous empirical studies on market orientation were conducted in large-scale organizations and ignored SMEs in developing countries, for instance, Malaysia (Mokhtar et al. 2014). This is because SMEs have limited resources, skills, lack of specialists and limited impact on the market place as compared to large organizations. Nevertheless, there are studies which reported that market orientation affects innovation adoption among SMEs in Indonesia (Suharyono, Imam, and Zainul 2014) and the impact of market orientation on the establishment of technological and non-technological innovation among SMEs in Malaysia (Mashahadi, Ahmad, and Mohamad 2016). As such, the studies on the relationship between market orientation and organizational outcomes such as innovation success are significantly overwhelming across sizes and industries (Nasir, Al Mamun, and Breen 2017; Suharyono, Imam, and Zainul 2014; Baker and Sinkula 2009). In consequences, studies on the impact of market orientation on innovation culture are almost non-existent in the context of SMEs in developing countries (Hanifah 2017). This relationship is crucial because market orientation is the culture of organizations that supports the behaviour that determines how an employee should think and act in view that it is related to the execution of marketing concept (Day 1990; Narver and Slater 1990). The elements under market orientation encompass market sensing, customer linking, competitor sensing and customer service. Other elements, namely technological development, new product/service development and organizational communication are also deemed as the key capabilities. To date, the endeavour to discover the constructs of market orientation in the cultural antecedent context has been significant (Kohli and Jaworski 1990; Dobni 2008). This is being driven by the fact that the areas of market orientation and innovation are connected, and policies examined in innovation scale are significantly adopted by market-oriented organizations (O’Cass & Ngo, 2007; 2016).

In general, market orientation is related to culture that stresses on the orientations of customer and competitor, interfunctional coordination as well as responsiveness, which are vital to the success of an organization (Kohli and Jaworski 1990; Narver and Slater 1990; Pérez-Luño, Saporito, and Gopalakrishnan 2016). In the context of SMEs, customer and competitor orientation play a significant role to alleviate the innovation performance (Appiah-Adu & Satyendra, 1998; 2014; 2017). According to Low et al. (2007, p. 879), market orientation is depicted as a customer-led practice. This is because, market orientation requires organizations to monitor rapidly changing customer needs and wants, determine the impact of such changes on customer satisfaction, enhance the innovation success and organizations’ competitive advantages. Understanding present and future needs of customers is crucial for organization to spur the culture of innovation in the organization so as to continuously improve and develop products and services that meet customer wants and needs (Pelham and Wilson, 1995). On the other hand, competitor orientation involves active monitoring of all existing and potential competitors in the market place and collect competitive intelligence to differentiate the competitors’ approaches (Narver and Slater 1990). The key objective of market-oriented organizations is to be attentive towards competitor’s activities and consider this as a source of ideas for new product development. In fact, the greater understanding of competitor orientation may reduce the failure of new products (Mahmoud et al. 2017).

Market orientation focuses on orientation from customer and competitors by producing market-based assets which triggered competitive advantage, while innovation culture emphasizes on leveraging internal-based competences. In other words, market-oriented organizations is driven by the innovation culture which mani-

fest itself in these activities. In doing so, the organizations need to inculcate innovation culture that heavily emphasize the research and development function and the development of technology in order to successfully enhance innovation performance. Therefore, an absence in this scope has provided interest to initiate an investigation on the relationship between market orientation and innovation culture among Malaysian SMEs. Based on the arguments above, it is conjectured that:

H3: Market orientation (consumer orientation and competitor orientation) relates positively to innovation culture.

4 Application of Conceptual Model to SMEs

Innovation has become an approach to create value to customer in order to remain competitive in the market and innovation also has become the main agenda in development of the economy in Malaysia. However, as mentioned above, the innovation performance for Malaysian SMEs in particular is not impressive (11th Malaysian Plan, 2015) and this is attributed to low application of innovation culture in developing countries (Waheed 2013). A majority of studies focused on the elements of intra-organization which examine the structure, culture, strategies, communication and managerial concept of organizations in determining innovation culture (for e.g. Hartmann 2006; Martins and Terblanche 2003; Obenchain & Johnson, 2004). However, empirical studies on the factors influencing innovation culture mostly among SMEs are still lacking. Attempts to innovate among SMEs may require the development or improvement of new products and process that account for extensive and intensive culture. As such, culture is relied upon by organization that succeeded in innovation, which are the employees' actions and behaviour (Madhousi, et al 2011). From here, the vital point of innovativeness is to dwell in detail on the relationship between organizational culture, organizational learning and market orientation on innovation culture. Figure 1 exhibits research framework for this study.

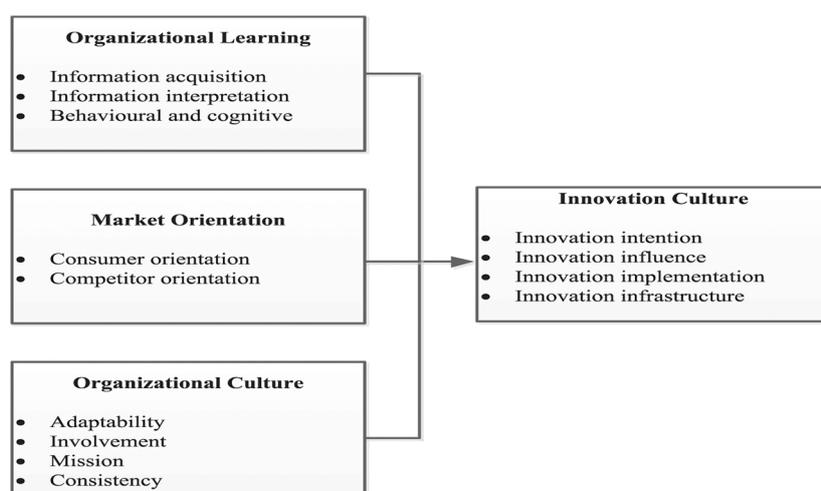


Figure 1: Research framework.

5 Methodology

5.1 Sample and Procedures

This empirical study, which is quantitative, employs purposive sampling in the gathering of data from Malaysian SMEs through self-administered questionnaire. The unit of analysis of this study is the SMEs' owners. In view that this study concentrates on SME entrepreneurs, the definition of SME is adopted from the Small and Medium Industries Development Corporation in identifying the appropriate businesses for the study. The SME Corps' directory will be utilized to identify the sample that has the following characteristics: (1) belongs to innovative sector; (2) less than 150 employees for manufacturing, and less than 50 employees for service sector and (3) a stand-alone company, not part of franchise or larger companies. Those franchised SMEs or part of larger companies are excluded as most of them do not have the control over their operations. Shefsky (1994, p.82) stated that for the franchisees, "there does not seem much room to do your own thing" as they are supervised by parent company and have to follow the stipulated rules and regulations.

In this study, 183 data were usable for analysis out of 196 respondents. The respondents' company has been established since year 1976 till 2014. Most of the respondents were from the service sectors (56.3%) and the remaining respondents were from manufacturing and agriculture. Among the surveyed SMEs, 50.8% of the SMEs were operating their businesses in Malaysia and the rest were either in local or foreign market. In terms of educational level, around 27.9% of the respondents held a bachelor degree, 24% of them only went to high school, 20.8% obtained certificate and 18.6% received diploma and almost 5% of the business owners had master and above degree. Finally, only 4.4% of them had less than high school education.

5.2 Measurement Instruments

Multi-item scales were used to measure organizational cultures, organizational learning, market orientation and innovative culture. A 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*) was used to measure the level of respondents' agreeableness on the statement posed to them. A questionnaire was developed from past studies and modified to suit the context of the study.

Organizational Culture: In order to develop the scale for organizational culture, these items have been developed from Denison et al. (2006). This approach concentrates on the aspects of organizational culture that seem to affect the effectiveness of an organization. It focuses on four traits and those are involvement, consistency, adaptability and mission. The focus of these traits is also supported by other studies of organizational culture and effectiveness (Heskett and Kotter 1992; Denison and Neale 1996).

Organizational Learning: To measure the dimensions of organizational learning, the scales were adapted from Pérez López, Manuel Montes Peón, and José Vázquez Ordás (2004) which were based on four dimensions namely information acquisition, information interpretation and behavioural & cognitive.

Market Orientation: Narver and Slater (1990, p.21) had determined market orientation as "the organization culture that most effectively and efficiently creates the necessary behaviours for the creation of superior value for buyers and, thus continuous superior performance for the business". For this study's purpose, the items for market orientation scale were based on two dimensions; namely consumer orientation and competitor orientation which were adapted from Narver and Slater (1990) and Nasution et al. (2011).

Innovation Culture: The development of the innovation culture scales was rooted in strategic management and innovation literature. The innovation culture scale developed in this study was adapted from Dobni (2008). Four dimensions of innovation culture are intention, infrastructure, influence and implementation.

6 Data Analysis

According to Podsakoff et al. (2003), if the data were collected from single source, common method variance needs to be examined. A usual method of identifying this problem is by utilizing the Harman's single factor test; that is by the admission of all main constructs into principal component factor analysis (Podsakoff and Organ 1986). The findings shows that 9 factor explains 63.36% and the first factor explained 36.94%, which is lower than the 50%. It indicates that common method bias is not an issue in this study.

To analyse the study model, we applied the Partial Least Squares technique by the SmartPLS 3.0 software (Ringle, Wende, and Becker 2015). Measurement model (validity and reliability) and structural model (testing the relationship among variables) were tested using this software.

6.1 Measurement Model

Innovation culture was measured based on four dimensions in which the scale was adapted from Dobni (2008). In Dobni (2008)'s study, innovation culture was measured on individual dimensions in which all the variables were tested as a first-order construct. In this research, the latent variable of innovation culture had been considered as a second-order reflective construct where first-order constructs (innovation intention, innovation influence, innovation implementation and innovation infrastructure) hold reflective measurements that refer to the reflective-reflective type. In the context of SMEs, the approach towards innovation is significantly different from large organizations and requires different approach. With the nature of SMEs that are fragile, instable and precarious to engage in the fierce competition, the concept of innovation culture is appropriate to be examined as the second-order factor in order to get a much broader conceptualization and consensus comprehension on innovation culture. Statistically, second order is performed to decrease the number of relationships (and simultaneously the number of hypothesis to be tested) in the structural model so that the PLS path model be more

parsimonious and easier to understand (Hair et al., 2014; 2005). Following Becker, Klein, and Wetzels (2012), repeated indicator approach has been used in this research to model hierarchical latent variables. In the first stage of the repeated indicator approach, the latent variable scores obtained for the first-order constructs which in the second stage served as manifest variables in the hierarchical order construct.

The convergent validity and discriminant validity were used to examine the measurement model. As suggested by Hair et al. (2014), factor loading, average variance extract (AVE) and composite reliability are to be considered in determining convergent validity. The results showed that all the items loading were higher than 0.5, the AVE were higher than 0.5 and also the CR were above 0.7 (Table 1).

Table 1: Measurement model.

First-order construct	Second-order construct	Item	Loading	AVE	CR	Cronbachs Alpha				
Information acquisition		IA1	0.749	0.563	0.794	0.622				
		IA2	0.679							
		IA3	0.816							
Information interpretation		II1	0.865	0.645	0.845	0.727				
		II2	0.755							
		II3	0.787							
Behavioural and cognitive		BC1	0.737	0.551	0.786	0.592				
		BC2	0.785							
		BC3	0.702							
Consumer orientation		ComO1	0.800	0.701	0.875	0.786				
		ComO2	0.863							
		ComO3	0.847							
Competitor orientation		ConO1	0.853	0.750	0.900	0.834				
		ConO2	0.883							
		ConO3	0.863							
Adaptability		Adap1	0.568	0.603	0.816	0.677				
		Adap2	0.869							
		Adap3	0.856							
Involvement		Involv1	0.785	0.645	0.879	0.817				
		Involv2	0.820							
		Involv3	0.809							
		Involv4	0.798							
Mission		Mission1	0.841	0.73	0.915	0.877				
		Mission2	0.873							
		Mission3	0.866							
		Mission4	0.838							
Consistency		Cosis1	0.788	0.628	0.871	0.802				
		Cosis2	0.813							
		Cosis3	0.785							
		Cosis4	0.783							
Innovation implementation		IImple1	0.854	0.714	0.882	0.800				
		IImple2	0.855							
		IImple3	0.825							
Innovation influence		IInflu1	0.868	0.656	0.851	0.736				
		IInflu2	0.792							
		IInflu3	0.766							
Innovation infrastructure		IInfra1	0.849	0.680	0.864	0.765				
		IInfra2	0.804							
		IInfra3	0.821							
Innovation intention		IInten1	0.736	0.657	0.884	0.827				
		IInten2	0.836							
		IInten3	0.818							
		IInten4	0.848							
		IInten4	0.848							
		Innovation culture	Implementation				0.839	0.730	0.915	–
			Influence				0.839			
	Infrastructure	0.863								
	Intention	0.876								

In assessing discriminant validity (i.e. the extent the items distinguish constructs or examine different concepts), the Fornell and Larcker (1981) criterion has been utilized in comparing the correlations between constructs and the square root of the average variance extracted for that construct. Table 2 shows the results of discriminant validity in the study. The measures were found to be discriminant in view that all values in diagonals were more than the corresponding row and column.

Table 2: Discriminant validity.

		1	2	3	4	5	6	7	8	9	10
1	Adaptability	0.777									
2	Behavioural and cognitive	0.216	0.742								
3	Competitor orientation	0.527	0.286	0.837							
4	Consumer orientation	0.465	0.381	0.533	0.866						
5	Consistency	0.583	0.427	0.505	0.611	0.792					
6	Information acquisition	0.386	0.454	0.394	0.453	0.481	0.750				
7	Information interpretation	0.444	0.192	0.268	0.520	0.514	0.437	0.803			
8	Innovation culture	0.650	0.500	0.626	0.587	0.719	0.543	0.405	0.702		
9	Involvement	0.596	0.269	0.378	0.543	0.686	0.337	0.571	0.624	0.803	
10	Mission	0.574	0.376	0.509	0.598	0.681	0.490	0.474	0.762	0.605	0.854

6.2 Structural Model

To assess the structural model, R^2 , beta, t -values via a bootstrapping procedure with a resample of 1,000, the predictive relevance (Q^2) and the effect sizes (f^2) as suggested by Hair Jr et al. (2014) was performed. Figure 2 demonstrates that the innovation culture was tested on the second-order construct. The factor loadings for each dimensions of innovation culture (Table 1) produced high factor loadings (implementation = 0.839, influence = 0.839, infrastructure = 0.863 and intention = 0.876) which indicated that innovation culture should be treated as uni-dimensional.

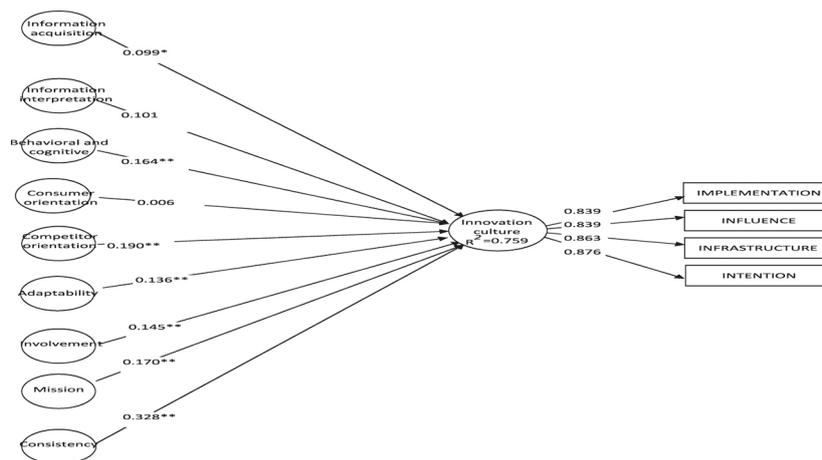


Figure 2: Structural model.

The results (Table 3) indicated that out of nine predictors for innovation culture, seven predictors had significant relationship with innovation culture. Information acquisition with $\beta = 0.099$ and $p < 0.05$, behavioural and cognitive with $\beta = 0.164$ and $p < 0.01$, competitor orientation with $\beta = 0.190$ and $p < 0.01$, adaptability with $\beta = 0.170$ and $p < 0.01$, involvement with $\beta = 0.136$ and $p < 0.01$, mission with $\beta = 0.328$ and $p < 0.01$ and consistency with $\beta = 0.145$ and $p < 0.01$ had positive relationship with innovation culture. Thus, for H1, dimensions for all organizational culture were supported (Adaptability, Involvement, Consistency and Mission). For H2, two dimensions for organizational learning were supported namely information acquisition and behavioural & cognitive). Finally, for H3, market orientation was supported in term of competitor orientation. Information

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interpretation (organizational learning) and consumer orientation (organization culture) were not significantly related to organizational culture. The R^2 value for innovation culture is 0.759 which is above the 0.26 value as suggested by Cohen (1988) indicating a substantial model. Hair Jr et al. (2014) have suggested that to examine the change in the R^2 value see the f^2 . The method suggested is to omit a specific exogenous construct from the model and see the R^2 change. It can be used to evaluate whether the omitted construct has a substantive impact on the endogenous constructs. Table 3 shows the results of f^2 . Following the Cohen's Cohen (1988) guideline, the effect size of 0.02, 0.15 and 0.35, respectively, represent small, medium and large effects.

Table 3: Structural model.

		Beta	SE	t-value	Decision	R^2	f^2	Q^2
H1	Information acquisition > Innovation Culture	0.099	0.048	2.093*	Supported	0.759	0.024	0.363
H2	Information interpretation > Innovation Culture	-0.101	0.054	1.879	Not Supported		0.023	
H3	Behavioural and cognitive > Innovation Culture	0.164	0.048	3.425**	Supported		0.078	
H4	Consumer orientation > Innovation Culture	-0.006	0.054	0.114	Not Supported		0.000	
H5	Competitor orientation > Innovation Culture	0.190	0.059	3.231**	Supported		0.085	
H6	Adaptability > Innovation Culture	0.170	0.051	3.308**	Supported		0.059	
H7	Involvement > Innovation Culture	0.136	0.057	2.405**	Supported		0.031	
H8	Mission > Innovation Culture	0.328	0.057	5.797**	Supported		0.188	
H9	Consistency > Innovation Culture	0.145	0.056	2.584**	Supported		0.031	

** $p < 0.01$, * $p < 0.05$.

In addition, Table 3 exhibits the predictive relevance of the model through the blindfolding procedure. If the Q^2 value is larger than 0, the model has predictive relevance for a certain endogenous construct (Hair et al., 2014). Based on the results, the Q^2 value for innovation culture ($Q^2 = 0.363$) is more than 0 suggesting that the model has sufficient predictive relevance. Hair Jr et al. (2014) have stated that values of 0.02, 0.15 and 0.35 indicate, respectively, that an exogenous construct has a small, medium or large predictive relevance for a certain endogenous construct.

7 Discussion

SMEs need innovation to enhance their performance in the ever changing business environment. To embark on innovation, SMEs need to possess the culture of innovation. This study contributes to innovation culture by showing that organization culture, organizational learning and market orientation contribute to the development of innovation culture in the SMEs. Specifically, the findings suggest that all four dimensions of organizational culture namely adaptability, involvement, consistency and mission are important in enhancing innovation culture of the organizations. In contrast, two dimensions have been found to be crucial in assisting SMEs to improve on their employees' innovation culture; those are acquisition of information and behavioural & cognitive. In terms of market orientation, only competitor orientation is significantly related to innovation culture.

The SMEs' innovation culture will allow them to ensure their competitiveness in an unstable market. They can take the advantage of innovation culture as to ensure their businesses are innovative, creative, efficient and accomplish the targeted goals and to be spread to other divisions of the organization (Shahrifirad & Ataei, 2012). To instil innovation culture among SMEs, organizational culture proved to be significant; however, organizational culture may encourage or halt creativity and innovation if it is not adequately nurtured. Cultural openness to innovation is also pertinent with the existence of organizational learning. As organizational learning deals with the sharing of knowledge and information, this motivates the generation of ideas for development of new products and services. To have such platform will assist the SMEs to espouse innovation and search for new process methods. This will result in the SMEs benefiting from the innovation culture while competing in

a competitive market. Information sharing will result in the degree of idea development to improve. Nonetheless, the collected knowledge has to be easily understood and improve their knowledge. Indeed, behaviour and cognitive play an important role in innovation culture; hence leading to innovative performance.

In addition, SMEs also view market orientation, specifically competitor orientation, playing an important role to foster innovation culture. Particularly, when market is unstable or competition is intense, competitive orientation is critical to inculcate innovation. Apparently, customer orientation does not affect innovation culture and this is because the SMEs have not given priority on the required resources in responding to their consumers' demand. Perhaps, when the SMEs are competitive and respond well to dynamism of competition in the marketplace, they could concurrently provide multiples choices of products and services to consumers. In turn, SMEs will remain as market oriented in order to compete effectively.

7.1 Implications to Theory and Practice

Even though this study has discussed on the basic conceptual framework that is handy to the study of innovation among SMEs, there is a huge opportunity for future research to expand the framework and explain on the major constructs' role in influencing innovation culture. This study contributes to the entrepreneurship literature by proposing organizational culture, market orientation and organizational learning as the determinants to innovation culture among SMEs. Specifically, this study makes contribution to the body of knowledge whereby all dimensions of organizational culture namely adaptability, involvement, mission and consistency were important to instil the culture of innovation in SMEs. This study also contributes to theory by showing support on the importance of organizational learning (information acquisition and behavioural & cognitive) in generating innovation. First, the SMEs must be able to attain the knowledge and then interpret the knowledge in great detail and finally to practice the knowledge effectively in order to embrace the concept of innovation culture. This result is also appealing in which competitor orientation has been proven to impact innovation culture. Comprehending the movement of the competitors may provide valuable inputs for SMEs to engage with innovation activities by leveraging on the innovation culture. Therefore, a common perspective integrating all these three core dimensions is a prerequisite for the SMEs' innovation culture. In fact, this study's findings will provide the SMEs with a fresh perspective that the concept of innovation culture needs to be adopted by them, to move from traditional business operation to being innovative.

This study's major implication for practitioners and academics is that not all SMEs have the access to innovation at all times; instead, it is only for those SMEs with the correct internal characteristics. This is because SME owners may encounter difficulties in terms of defining innovation culture as well as understanding the appropriate methods of producing real innovation. The difficulties are not setbacks of innovation, but they are due to the lack of understanding of the challenging conditions necessary in adopting the culture of innovation. In this respect, the SMEs must be able to understand that internal and great amount of resources may not be necessary to achieve innovation. Organizational culture, capability of organizational learning and market orientation are the appropriate examples of internal conditions needed by SMEs in inculcating innovation culture. In this manner, it may provide insight to the policymaker about considering ways to facilitate the development of relevant strategies for SMEs. Providing assistance for SMEs in developing an effective innovation culture allows them to understand the best approach to create culture of innovative in order to enhance innovation performance.

8 Conclusions, Limitations, and Future Directions

This study's main limitation is its dependence on single respondent (owner of SMEs). In this manner, Podsakoff and Organ (1986) have posited that data obtained from survey that is based on self-report might be subjected to social desirability bias. Despite the disadvantage of single respondent, it is preferred by most researchers. Nevertheless, the guarantee of anonymity may reduce the bias. The common method bias utilizing Harman's one-factor test was undertaken and it was found that there is no such bias (Podsakoff and Organ 1986; Scott and Bruce 1994). Secondly, the cross-sectional design has constrained this study. Even though nearly all plausible directions for the framework's pathway had been performed, the longitudinal research is desired in order to observe the relationship's causality direction and identify possible process of reciprocal.

In summary, innovation culture concept is the pillar of innovation. It is where entrepreneurs feel encouraged and assured to constantly attempt new endeavours. Here, the entrepreneur is equipped with the right knowledge, skill and ability to successfully produce and execute new ideas. Nonetheless, innovation only prosper in the long run as business owners need to be fully committed in the nurturing of innovation as their employees might resist change. The management of innovation is related to the creation of culture whereby new ideas are

produced, appreciated and backed. To attain the status of “innovation performance” is a challenging endeavour in the absence of suitable road map or planning, in which they are outlined and practised.

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