

THE MEDIATING EFFECT OF KNOWLEDGE MANAGEMENT ON THE
RELATIONSHIP BETWEEN HUMAN RESOURCE MANAGEMENT
PRACTICES AND ORGANIZATIONAL INNOVATION PERFORMANCE

SHILA SHAHNAEI

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DEDICATION

I shall forever be grateful to my beloved parents
for their endless support, guidance, and patience.

Finally, I would like to thank you those friends and colleagues
who helped me to accomplish this study

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ABSTRACT

Strive competitive in market place drives enterprises to view human capabilities as critical asset for excellent organizational innovation performance (OIP). Hence This study investigated the relationship between human resource management (HRM) practices and organizational innovation performance (OIP) through knowledge management (KM). The previous studies on the relationship between HRM practices and OIP were focused on four main HRM components outlined in Guest Model, which are recruitment and selection (RS), training, performance appraisal (PA) and compensation. However, there is lack of evidence on which components of HRM practices could significantly influence OIP, especially within the environment of small and medium enterprises (SMEs). The uniqueness of SMEs from HR perspective is exhibited by the smaller numbers of employees. Hence, employees in SMEs tend to have wider opportunity to be involved in the business decision-making process. In addition, the focus on employee career development within SMEs is greater compared to in larger organizations. Hence, the purpose of this study was to extend the Guest model by adding employee participation (EP), and career development (CD) as the new HRM components, and to explore the impact of employee's knowledge management towards OIP based on the Black Box Model. This quantitative investigation utilized a survey instrument, which was distributed face-to-face and online to SMEs listed in the official SME list in Malaysia. The respondents consisted of 33 individuals who worked in different managerial levels at the respective organizations. Data analyses were conducted using the Smart-PLS 3.2.4 software for structural equation modeling. The findings from the study revealed that RS, training and compensation could significantly influence OIP, whereas the impact of PA, EP and CD towards OIP were insignificant. In addition, the findings suggested that KM played a significant role as a mediator between HRM practices and OIP. This study contributes towards HR knowledge enhancement via the expansion of the Guest Model, as well as the formation of the new HRM, KM and OIP frameworks. The importance of HR practices and the vital role of knowledge management to improve the effect of HR practices on OIP serve as important practical implications for HR practitioners and managers. Exploring additional factors, such as organizational strategy or organizational culture, which could both affect OIP within the SMEs, could be considered for further studies.

ABSTRAK

Persaingan sengit di pasaran telah mendorong perusahaan-perusahaan melihat menilai keupayaan sumber manusia sebagai aset penting bagi kecemerlangan prestasi inovasi organisasi (OIP). Oleh demikian, Kajian ini menyiasat hubungan antara amalan pengurusan sumber manusia (HRM) dan OIP melalui pengurusan pengetahuan (KM). Kajian terdahulu berkenaan hubungan antara amalan HRM dan OIP tertumpu kepada empat komponen utama HRM yang digariskan dalam Model Guest, iaitu pengambilan dan pemilihan (RS), latihan, penilaian prestasi (PA) dan pampasan. Walau bagaimanapun, terdapat kekurangan bukti tentang komponen amalan HRM yang mana satu mempunyai pengaruh signifikan terhadap OIP, terutamanya dalam persekitaran perusahaan kecil dan sederhana (PKS). Keunikan PKS dari perspektif sumber manusia dapat dilihat dengan bilangan pekerja yang lebih kecil. Oleh itu, pekerja di PKS mempunyai peluang yang lebih luas untuk terlibat dalam proses pembuatan keputusan perniagaan. Tambahan lagi, tumpuan terhadap pembangunan kerjaya pekerja di dalam PKS adalah lebih luas berbanding di organisasi yang lebih besar. Oleh itu, tujuan kajian ini adalah untuk memperluaskan model Guest dengan menambah penyertaan pekerja (EP), dan pembangunan kerjaya (CD) sebagai komponen HRM yang baru, serta meneroka kesan pengurusan pengetahuan pekerja terhadap OIP berdasarkan Model Kotak Hitam. Siasatan kuantitatif ini menggunakan instrumen survei yang diedarkan secara bersemuka dan atas talian kepada PKS yang tersenarai dalam senarai rasmi PKS di Malaysia. Para responden terdiri daripada 33 individu yang bekerja dalam peringkat pengurusan yang berbeza di organisasi masing-masing. Analisis data dilakukan menggunakan perisian Smart-PLS 3.2.4 untuk pemodelan persamaan struktur. Dapatan kajian menunjukkan bahawa RS, latihan dan pampasan dapat mempengaruhi OIP dengan ketara, manakala kesan PA, EP dan CD terhadap OIP adalah tidak signifikan. Tambahan lagi, keputusan kajian menunjukkan bahawa KM memainkan peranan signifikan sebagai pengantara antara amalan HRM dan OIP. Kajian ini menyumbang kepada peningkatan pengetahuan HR melalui pengembangan Model Guest, serta pembentukan rangka HRM, KM dan OIP yang baru. Kepentingan amalan HR, dan peranan penting pengurusan pengetahuan untuk meningkatkan kesan amalan HR terhadap OIP berfungsi penting sebagai implikasi praktikal bagi pengamal dan pengurus HR. Penerokaan faktor-faktor tambahan seperti strategi organisasi atau budaya organisasi yang kemungkinan kedua-duanya boleh memberi kesan ke atas OIP dalam PKS dapat dipertimbangkan bagi kajian selanjutnya.

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LIST OF ABBREVIATIONS

AVE	-	Average variance extracted
C	-	Compensation
CA	-	Cronbach's alpha
CBSEM	-	Covariance based structural equation modelling
CD	-	Career development
CFA	-	Confirmatory factor analysis
CM	-	Change management
CMV	-	Common method variance
CR	-	Composite reliability
DOSM	-	Department of statistic Malaysia
EFA	-	Exploratory factor analysis
EL	-	Educational level
EP	-	Employee participation
GDP	-	Gross domestic product
HR	-	Human resource
HRM	-	Human resource management
ICT	-	Information and communications technology
IMP	-	Industrial master plan
IT	-	Information technology
KA	-	Knowledge acquisition
KAP	-	Knowledge application
KBV	-	Knowledge based view
KM	-	Knowledge management
KM	-	Knowledge management
KS	-	Knowledge sharing
NEP	-	New economic policy
NSDC	-	National SME development council

OIP	-	Organizational innovation performance
PA	-	Performance appraisal
PLS	-	Partial least squares
RBV	-	Resource based view
RS	-	Recruitment and selection
SECI	-	Socialization, externalization, combination, and internalization
SEM	-	Structural equations model
SME	-	Small and medium enterprise
SME Corp	-	SME Corporation
SMIDEC	-	Small and medium industries development corporation
PSS	-	Statistic package for social sciences
T	-	Training
TQM	-	Total quality management
UNDP	-	United nations development program
VAF	-	Variance account for
VIF	-	Variance inflation factor

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This study investigates the relationship between human resource management (HRM) practices and organizational innovation performance (OIP) through knowledge management (KM). The study adopts the knowledge based view (KBV) theory, Guest and Black Box models for examining the correlation between variables. The impact of globalization increases the competition in manufacturing activities and changes the business environment, which results in changes in the processes, products, techniques and services of organizations. This transformation from conventional activities to improved performances is known as organizational innovation performance (OIP) (Ministry of Higher Education of Malaysia, 2012). For attaining such standing, enterprises need to treat their human capabilities as crucial assets that need to be retained (Tan and Nasurdin, 2011; Al-bahussin and El-garaihy, 2013; Noordin and Karim, 2015).

Khin. Hazlina and Ramayah (2010) defined competition as different offerings of innovation in order to gain competitive advantage. Innovation can also facilitate new developments in a profitable way (Brunswicker *et al.*, 2013). The Ministry of Higher Education of Malaysia (2012) explained that Malaysia should shift into higher gear in order to become a high-income nation in accordance with the recent policy of the new economic model. Towards that end, Malaysia need to extend new economic model to put an emphasis on organizational innovation performance (OIP) and quality of human capital as part of its effort to achieve Vision 2020.

Innovation initiatives depend largely on the knowledge and expertise of employees as the major inputs in the process of creation and innovation (Chen and Huang, 2009). Kong, Chadee and Raman (2011) explained that knowledge of human resource is a valuable asset for enterprises. Thus, all the organizations need to manage their own human resource as a key factor in gaining competitive advantage towards ensuring its survival. Therefore, knowledge management is critical for enabling organizations to be innovative and competitive (Crossan *et al.*, 2010; Al-bahussin and El-garaihy, 2013, Rahim *et al.*, 2015). Human resource management (HRM) practices play a crucial role in knowledge management (KM) and organizational innovation performance (OIP) through the offering of suitable practices, which would contribute to the employee's knowledge and expertise and finally lead to identification of opportunities. This suggests that it is essential to examine the relation between suitable human resource management (HRM) practices and organizational innovation performance (OIP) in order to ensure the organization's survival in a focused domain through organizational innovation performance. In addition, Kosogova and Araslanova (2015) emphasized the importance of investment on education to facilitate organizational development. The authors pointed out that scientists with higher educational degree can create a great number of new and unique industrial ideas (Eljutin, 1980).

This study recognizes the relationship between human resource management (HRM) practices (recruitment and selection, training, compensation, employee participation, performance appraisal, and career development) and knowledge management (acquisition, sharing and application) with organizational innovation performance (OIP). The researcher focused on the ICT industry of Malaysian SMEs sector, as it is an innovative industry. This chapter presents the background of the study, the statement of the problem, the research questions, objectives, significance of study, scope of research, definitions of terminologies used in this research as well as the structure of the thesis.

1.2 Background of Study

Innovation has become a powerful tool in today's world. Innovation is challenging for the people in business and make them think out of the box to create new ideas, new processes, new products, and new markets that would essentially transform their business into an innovative entity (Rahim *et al.*, 2015). Moreover, Tabassi, Ramli and Bakar (2012) believed that the ability to innovate is an essential factor contributing to an organization's competitive edge. Innovation is also a pertinent contributing factor to economic growth by means of new business creations and new product developments. Business organizations that aspire to create significant and sustainable growth would benefit greatly from innovative practices (Ahlstrom *et al.*, 2005; Christensen *et al.*, 2003; Tabassi *et al.*, 2012). Organizational innovation performance (OIP) has been broadly examined within developed countries especially USA and EU (Lundvall *et al.*, 2003). For developing countries such as Malaysia, studies related to innovation are still in their infant stages (Tan and Nasuridin, 2011; Zakaria *et al.*, 2015; Rahim *et al.*, 2015). Thus, it is vital to investigate the drawbacks faced by organizations in developing countries such as Malaysia in practicing innovation.

Human resource management is an important issue because it is an appropriate source for achieving competitive advantage. Human resource management can convert other resources like money, machine, methods and material into output (product and service) (Yeganeh and Su, 2008). Some researchers have noted that the management of people is harder than that of technology. Besides, competitor can imitate other resources like technology but the human resource is unique. Those enterprises that manage effectively and control the expertise and knowledge embedded within people's minds will be able to create more value for achieving competitive advantage (Zakaria and Hashim, 2015). Researches on HRM practices have been done from time to time and by many researchers. Some researchers referred to certain sets of HRM practices as best practice (Pfeffer, 1998; ECO Canada's, 2009). HRM practices are related to enhancing the OIP through their impact on employees' activities (Chen and Huang, 2009; Tan and Nasuridin, 2011). An enterprise can use these HRM practices to provide employees with higher skills

and create resources to develop and improve OIP. However, Hooi and Ngui (2013) revealed that Malaysian SMEs have no plan to manage their human capital and are not concerned about human capital development. With respect to the importance of human capital management in competitive advantage enhancement, it is necessary to examine the role of HRM practices, which reflect OIP with the particular focus on SMEs.

Knowledge management system is needed for managing existing organizational knowledge, which plays a role in innovation and operational improvements. Since knowledge management system is an important innovation driver, SMEs have to face major challenges in sustaining their knowledge management capabilities (Rahim *et al.*, 2015). In addition, Du Plessis (2007) indicates that the first category of OIP refers to the introduction of KM systems. Organizations have opportunities for higher innovation capabilities and performance when they are able to expand, disseminate, and exploit organizational knowledge. However, very few research have been done on how a knowledge management system could increase innovation performance particularly in developing countries such as Malaysia (Rahim *et al.*, 2015). Therefore, it is essential to conduct an empirical study to explore the knowledge management practices and innovation performance in SMEs.

In its effort to become a knowledge-based economy, Malaysia has put much emphasis on the need to undertake innovation in all sectors although innovation level in Malaysia is still low (Trading Economics, 2014). SMEs have an important role in OIP, which means that SMEs have contributed to the improvement in innovation performance in the twentieth century (Brunswicker and Ehrenmann, 2013). According to the Malaysian Department of Statistics (2011), the Malaysian government is concerned with the development of SMEs since the 1970s. The 'New Economic Policy' (NEP) was put forward in 1971, which targeted to improve the well being of the people. The Government's commitment towards the development of SMEs was presented in the 2nd Industrial Master Plan (IMP2), which completed in 2005. The 3rd IMP was launched covering the period from 2006 to 2020, coinciding with the nation's Vision 2020 (Hazlina Ahmad *et al.*, 2013). Malaysia,

SMEs have a very high potential in supporting the nation's economic development and wealth creation (Rahim *et al.*, 2015). Dato' Hafsa Hashim, CEO of SME Corporation Malaysia, in her presentation at the Mandarin Oriental Hotel on 23 September 2013 stated that innovative activities carried out by SMEs are very effective for Malaysia and organizational innovation performance has a positive impact on capital for both developed and emerging economies.

Knowledge has been recognized as one of the important success factors for ICT based SME, especially for software companies. Knowledge is dynamically accumulated over the time and it is helpful for the organization to achieve their goals (Bjornson and Dingsoyr, 2008). The software industry is resource-oriented and it has become an essential section to confirm that knowledge in the minds of resources is safeguarded (Aurum *et al.*, 2008). Kammani and Aljahdali (2013) developed a case study on KM capability for software development. Based on the result, the software product development faces many challenges. KM can help system integrators to capture and retain the business process knowledge derived out of working on various projects and apply the learning on newer projects. Therefore, the study observed the way in which software companies are working hard in streamlining their processes to make themselves more cost efficient, build better products, offer better customer service than their competitors and retain the best talent. KM activities in these companies can help them to achieve their goals.

In summary, based on the above-mentioned facts, the knowledge management of an enterprise is currently the most prominent topic to study with regard to the organizational innovation performance. Another valuable asset for organizations is human capital with their expertise, skill sets and knowledge. Hence, this study attempts to investigate the way in which organizations manage and control the expertise and knowledge of their human capital effectively and whether they are able to create better value and attain superior competitive improvement. The following section examines the problem statement of the study.

1.3 Problem Statement

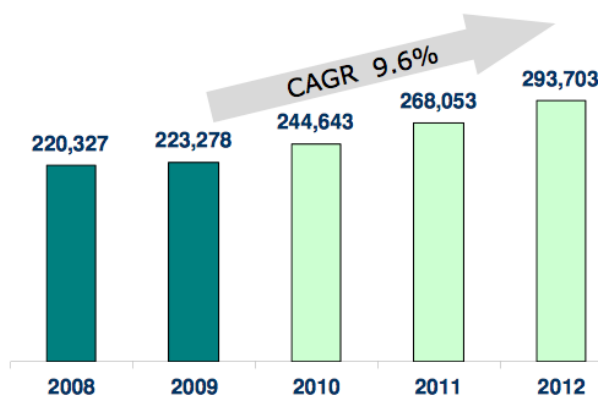
Scholars have defined the issue of how performance reflects on sustainability of any entity within the fast changing business landscape of the 21st century (Brunswicker and Ehrenmann, 2013; Kong *et al.*, 2011; Ramlan *et al.*, 2007). In the developing countries, there is growing recognition on the important role of SMEs as an economic agent (Tajasom *et al.*, 2015). Ministry of Higher Education of Malaysia (2012) acknowledged that Malaysia is in the middle level income. Thus, inactivity will hinder the attainment of Vision 2020 unless there is a shift to a higher gear. Among the reasons for SMEs not surviving in the industry is the lack of competitiveness in a dynamic environment.

According to the Malaysian Department of Statistics (2011), the Malaysian government has been concerned with the development of SMEs since the 1970s. The Government's commitment towards the development of SMEs was presented in the 2nd Industrial Master Plan (IMP2), which was introduced in 2005. The 3rd IMP was launched covering the period from 2006 to 2020, coinciding with the nation's vision 2020 as a developed country (Hazlina Ahmad *et al.*, 2013). Prime Minister, Dato' Sri Najib Tun Haji Abdul Razak chaired the 13th National SME Development Council (NSDC) put emphasis on the direction and overall implementation strategy of the SME Master plan (2012). The SME Master plan envisions create globally competitive SMEs that enhance innovative firms and also promote competition (SME Corporation Malaysia, 2016). SMEs are the backbone of the Malaysian economy and contributed 32.7% to the country overall GDP in 2012 (SME Corp, 2014). From an employment perspective, SMEs also play a crucial role as they comprise more than 90% of all businesses in Malaysia, and employ over 37 million individuals or over 59% of total private sector employment (Kaliannan, Abraham and Ponnusamy, 2015; NSDC, 2013; SME Master plan, 2012).

SME Master plan recommended that a high priority has to be given to developing human capital for business owners. In this context, there were 139 programmers were employed by various ministries and agencies in 2012 with the budget up to 7.1 billion in order to build up the capacity of SMEs which clarify the

important role of human capital in Malaysian SMEs (SME Corp Malaysia, 2013). Based on SME Master Plan, the Malaysian government reported relatively low performance among SMEs and attributed this to highlight the concerns such as long-term sustainability and business competitiveness. Malaysia moves towards an innovation growth for the next phase of development, increasing focus has been given to programs for innovation and technology adoption. This has been cited as the most important element of SME performance under the SME master plan and overall competitiveness of SMEs (SME Corp, 2013). The SME master plan would accelerate the growth of SMEs to achieve a high-income nation status by 2020. Based on SME Master plan (2012 - 2020) the master plan will be for all SMEs in Malaysia, irrespective of sector, gender, geographical region and ethnic background. Successful implementation of the master plan will result in raising the contribution of SMEs to the economy by 2020 for instance, GDP 41% (2010: 32%); employment: 62% (2010: 59%); and exports: 25% (2010: 19%) (SME Corp, 2016).

SMEs in the ICT industry in many countries are examples of a new industry with newly emerging product clusters, which demand product innovation. In addition, ICT companies are expected to contribute substantially to technical innovation and product renewal (Brunswicker and Ehrenmann, 2013). Malaysia had identified the ICT industry as a key economic driver in its effort to shift to a knowledge-based economy and become a developed nation (DOSM, 2011). Malaysian Communications and Multimedia Commission (MCMC) (2016) in the latest report determined the percentage of internet users in 2015 showed a remarkable increase of 11.0 points (2015: 77.6% and 2014: 66.6%) making the online community from two-third to three-fourth of the entire national population. The number of internet users in 2015 was approximately 24.1 million (or 77.6% of all inhabitants in Malaysia). Jabar, Sidi and Selamat (2010) indicated that Malaysian people tend to use efficient products that related to ICT and also use internet. Figure 1.3 shows the increasing growth rate of ICT demand in recent years.



Source: MDeC, 2013

CAGR: Compound annual growth rate is a useful measure of growth over multiple time periods.

Figure 1.1 : ICT demand analysis

Hence, investments in ICT capital are essential to benefit from ICT advancement. Malaysia master plan indicates that ICT Malaysia is an aspiring global hub (Dutta, Geiger and Lanvin, 2015). Nevertheless, the ICT Working Group (2015) report points to some of its weaknesses. The ICT penetration rate in Malaysia is better than its neighbors but is only half in comparison to that of Australia, New Zealand and Hong Kong. Besides, Malaysia is comparatively behind with regard to internet, e-commerce uptake, content development and R&D (Dutta, Geiger and Lanvin, 2015). During the 9th Malaysia Plan (2006-2010), the government initiated the program and expanded ICT into a network of cyber cities and centers throughout Malaysia. ICT sector continued its growth during the 10th Malaysia Plan (2011-2015) at an average rate of 6.8 percent per annum. Under the 11th Malaysia Plan (2016 – 2020) the government is striving to increase the ICT contribution to GDP to 17 percent from 13.1 percent during the 10th Malaysia Plan. (Malaysia Department of Statistics, 2017). The Malaysian ICT market is gaining momentum and capabilities that are built in digital content, software development and testing, data centers and cloud services, cyber security (Malaysia - Information & Communications Technology, 2017). Hence, it is necessary to conduct a study related to innovation performance of ICT based SME with the focus on software companies.

There are some studies that support the relationship between human resource management (HRM) practices and organizational innovation performance (OIP) in different sectors (Tan and Nasurdin, 2011; Zakaria, 2012; Zareai *et al.*, 2013). Tan and Nasurdin (2011) in their empirical study on large manufacturing companies in Malaysia explained the relationship between HRM practices (such as recruitment and selection, performance appraisal, compensation and career development) and innovation performance via the resource based view (RBV) theory. Finally, the results of their study indicated that there is a lack of studies in Malaysian SMEs sector with respect to large manufacturing.

Based on the above-mentioned studies, most of the researchers focused on specific practices such as training, performance appraisal, recruitment and selection but no sufficient attention was paid to employees participation, and career development, as HRM practices can impact on organizational innovation performance (Chen and Huang, 2009; Tan and Nasurdin, 2011; Zakaria, 2012; Zareai *et al.*, 2013). Although Chen and Huang (2009) used employee participation as one of the strategic human resource (SHR) practices that can influence innovation performance, they examined this relationship via the resource based view (RBV) theory on large manufacturers in Taiwan. Since the number of employees and managerial layers in SMEs are less than those in large manufacturing companies, employees may be able to participate in the decision making process in SMEs and in helping organizations to achieve innovation performance. As a result, examining participation as one of the dimensions in HRM practices can be considered as a gap in this area to which previous researchers have not paid any attention.

In an effort to improve employee commitment and overall organizational performance, human resource professionals rely largely on career management and development (DeNisi and Kluger, 2000; Gao, 2011). HRM scholars have argued career development and practitioners as having a feedback loop i.e. the individual's learning capability based on receiving feedback. Tan and Nasurdin (2011) concurred that career development is a highly effective strategy for attracting and retaining talented and capable employees. Since the number of staff in SMEs is less than those in large manufacturing companies, finding the suitable alternative for employees is

not easy. Therefore, retaining employees has a substantial effect on the organization. As a result, examining career development as one of the dimensions in HRM practices can be considered as a gap in this area to which previous researchers have not paid any attention.

Hazlina Ahmad, Ramayah, Muda and Diana (2013) focused on strategic innovation in the software products manufacturing sector in Batu Pahat, Johor. Based on this empirical study, there is a major problem associated with innovation in the manufacturing industry that can be solved via the knowledge based view (KBV) theory. Meanwhile in developing countries, there is growing recognition on the important role of SMEs as an economic agent (Tajasom *et al.*, 2015). Rahim, Mahmood and Masrom (2015) cited that Malaysian SMEs have a very high potential in supporting the country's economic development. However, the Ministry of Higher Education of Malaysia (2016) stated that the SME GDP had decreased in 2015 as compared to 2014. Being in the middle level income, Malaysia will not be able to achieve Vision 2020 if it does not shift to a higher gear. In recent years, this industry has become increasingly prominent due to the developments in high-tech industries and rampant utilization of information and communication technologies (ICT) (Wu *et al.*, 2015). Many countries plausibly make large investments worldwide for the advancement of their ICT industry. Malaysia has acknowledged the ICT industry is the primary economic driver in its effort to transition to knowledge-based economy in order to ultimately achieve the status of a developed nation (DOSM, 2011). Jabar, Sidi and Selamat (2010) pointed out that Malaysians are willing to used ICT. However, the Malaysia Productivity Corporation (2016), acknowledged the contribution of the ICT industry to the SME sector in Malaysia despite the decreasing GDP rate. These statements can justify the reason for choosing the ICT industry of Malaysian SMEs sector as a developing country. Innovative moves can help the SMEs improve their GDP growth rate, which in turn could raise the overall economic performance in Malaysia. Therefore, the current research contributes to the body of knowledge about the organizational innovation performance in ICT industry of Malaysian SME sector.

The perception of suitable HRM practices that influence OIP is one of the critical issues addressed by the current study. Previous studies mostly focused on the recruitment and selection, training, compensation and performance appraisal (Tan and Nasurdin, 2011; Zakaria, 2012; Zareai *et al.*, 2013), whereas the current study aims to partially fill the gap in most of the studies conducted in the Malaysian SME sector regarding “employee participation”, and “career development”. Therefore, the current study contributes to the body of knowledge by evaluating the role of employee participation and career development as HRM practices in Malaysian SME sector. Based on the important role of human capital in increasing competitive advantage, the reason for choosing this factor is justified.

Knowledge based view (KBV) theory regards knowledge as a firm’s most valuable resource due to its inimitability (Choi *et al.*, 2016). Malaysia transitioned from a resource based view (RBV) economy to knowledge based view (KBV) with the unveiling of the knowledge economy master plan in 2003 (Nadarajah *et al.*, 2012; Tajasom *et al.*, 2015). This study relies on the KBV theory when most of the aforementioned scholars prefer the RBV theory. An organization’s aptitude in expanding, disseminating, and exploiting KM could very likely result in higher innovation capabilities and better performance. There is still a lack of research on how knowledge management system could improve innovation performance especially in developing countries like Malaysia (Rahim *et al.*, 2015). Therefore, the current study fill in the gap by using knowledge management (KM) for increasing OIP in ICT industry of Malaysian SMEs sector.

The current research examined the relationship between variables through the Guest and Black Box models and knowledge based view (KBV) theory. The findings of the study will help the decision making process in adopting KM as a mediator and HRM practices as the independent variable that influences on OIP as the dependent variable. The result provides sufficient information about the impact of human resource management (HRM) practices on organizational innovation performance (OIP) through knowledge management. This research can impact on managers who attempt to design a strong innovation mechanism to improve the performance of the

ICT industry of Malaysian SMEs sector. Table 1.1 shows the research problem of the current study.

Table 1.1 : Research problem

Variables	What has been done?	What needs to be done?
Human resource management (HRM) practices	Investigation the impact of HRM practices on organizational performance based on economic and financial perspective and choosing RBV theory.	Investigating the impact of HRM practices on OIP with choosing KBV theory . Studying the employee participation and career development as a HRM practices dimension.
Knowledge management (KM)	Mainly investigates as unique valuable knowledge .	Investigating the KM cycle (acquisition, sharing, and application) and also impact of KM on OIP as a mediator .
Organizational innovation performance (OIP)	Mainly implemented in large manufacturing and developed country .	Implemented on SME organization in developing country such as Malaysia.

1.4 Research Question

Human resource management is an important issue because HRM is unique and inimitable thus helping organizations to become more competitive and innovative. This study investigates the impact of certain HRM practices (recruitment and selection, training, compensation, employee participation, performance appraisal, and career development) on OIP through KM (acquisition, sharing and application) as a mediator in the ICT industry of Malaysian SMEs sector. As the previous discussion suggests, OIP is the key to developing and maintaining a business's competitive ability in the global arena. In the commentary of KM, the current study aims at identifying employee knowledge and expertise as major inputs in the process of creation and innovation. The KM approach can influence on the development of an employee's knowledge and skills, which lead to improve OIP. Therefore, increasing the capability of KM has become a major focus in business

performance improvement (Bessant *et al.*, 1997). Based on the statement of the problem, the study will therefore address the following research questions:

RQ1: What is the relationship between HRM practices (recruitment and selection, training, compensation, employee participation, performance appraisal, and career development) and organizational innovation performance in the ICT industry of Malaysian SMEs sector?

RQ2: To what extent the human resource management practices (recruitment and selection, training, compensation, employee participation, performance appraisal, and career development) influence on knowledge management in the ICT industry of Malaysian SMEs sector?

RQ3: What is the relationship between the knowledge management (acquisition, sharing and application) and organizational innovation performance in the ICT industry of Malaysian SMEs sector?

RQ4: Does knowledge management (acquisition, sharing and application) as a mediator can affect on the relationship between the human resource management practices (recruitment and selection, training, compensation, employee participation, performance appraisal, and career development) and organizational innovation performance in the ICT industry of Malaysian SMEs sector?

1.5 **Research Objectives**

Based on the research question statements, research objectives have been developed as follows:

RO1: To investigate the relationship between human resource management practices (recruitment and selection, training, compensation, employee participation,

performance appraisal, and career development) on organizational innovation performance in the ICT industry of Malaysian SMEs sector.

RO2: To examine the relationship between human resource management practices (recruitment and selection, training, compensation, employee participation, performance appraisal, and career development) and knowledge management in the ICT industry of Malaysian SMEs sector.

RO3: To examine the relationship between the knowledge management (acquisition, sharing and application) and organizational innovation performance in the ICT industry of Malaysian SMEs sector.

RO4: To investigate the mediating effect of knowledge management on the relationship between the human resource management practices and organizational innovation performance in the ICT industry of Malaysian SMEs sector.

1.6 Significance of Research

The theoretical area generally explains the purpose of theory and provides a framework to explain what can be observed in the future events. Indeed, the theory provides the basis for developing and testing hypotheses about how some aspect of the world works. The current study proposes a framework about concerning the relationship between HRM practices and OIP in the ICT industry of Malaysian SME sector. The present study describes six practices, which are called the best practices that affect on the increasing OIP based on Guest model. Moreover, based on the Black box model there is an unknown device, which helps increase the innovation performance during organization. The current study describes knowledge management as an unknown device by using knowledge based view theory that explains knowledge as crucial factor of organization. Therefore, organization can create new and inimitable ideas, which lead to achieving more competitive advantage through increasing the level of knowledge management. Bearing this in our mind, the current study tests three main hypotheses based on the framework. Thus, it can be

inferred that the results of the current study will have significant beneficial for academics and ICT provider and makes them aware of the current situation of OIP and what can be observed in the future events in the context of Malaysian SMEs and observe differences between developed and developing countries.

Whereas in the practical aspect, Hazlina Ahmad, Ramayah, Muda and Diana (2013) projected that SMEs will experience expansive growth in the coming years due to an expected increase in the contribution to the national product. Various industries are made up of SMEs that are pertinent to the economies of developed and developing countries including Malaysia. Ngah and Ibrahim (2012) also explained that ninety-nine out of 100 Malaysian businesses belong to SMEs and almost 5.6 million Malaysians jobs in the SME sector. However, based on their empirical study on the Malaysian manufacturing sector, which represents that the performance of Malaysian SMEs has not reached to their full potential yet. For enhancing their performance, the SMEs need to realize their abilities and manage all the possible opportunities for upgrading them to become more competitive. SMEs have to adopt best to the industry business practices for improving performance.

The United Nations' global development network is an organization advocating for change and connecting countries to knowledge, experience and resources to help people build a better life, which is working in 177 countries and territories. This organization is fully engaged in supporting Malaysia's national priorities and the implementation of national medium and long-term development plans such as the Malaysian master plan. UNDP Malaysia (2007) reported that SMEs are affected by globalization. Therefore, SMEs should find a way to be competitive globally. The innovation can be one of the best predictor to facilitate new development in a profitable way (Brunswicker and Ehrenmann, 2013). Khin, Hazlina and Ramayah (2010) explained that innovation is a significant factor for improving any entity's performance, especially for ICT enterprise. Since ICT products always need to be advanced and innovative as no one wants to buy an obsolete product. Therefore, the innovative activities play a critical role in this sector. Hence, innovation can be investigated as a facilitator for new development in a profitable way. Furthermore, human resource management in ICT industry has a vital role and

most of the novelty and creation comes from human capital that leads to development and manufacturing (Rahman, 2012).

Knowledge management is critical to enable organizations to be innovative and competitive (Crossan and Apaydin, 2010). Auernhammer and Hall (2013) in their study have examined the role of KM on OIP. They stated that knowledge acquisition and knowledge sharing could affect the knowledge application in order to solve the problem and improve OIP. This was focused on the General Electric, where the IT engineers can develop a system for documenting every customer complaint and inquiries in a database to which all employees can have the access. This system enables the employees to find the answers to the queries of customers very quickly as it facilitates the sharing of experiences and problems of every employee in solving and improving innovativeness. Chen and Huang (2009) conducted an empirical study on 146 large Taiwanese manufacturing companies. According to their study knowledge acquisition comes from external atmosphere and from internal sources. Hence, employees provide opportunities for organizations to recombine present knowledge and create new knowledge. Since knowledge prevails within individuals and in all levels of an organization, individual members of an organization need to share their information so as to develop new routines. Therefore, the organization can gain crucial knowledge in the competitive environment and quickly attain competitive advantage.

The significance of theoretical contribution of this research is to introduce a research framework to provide better understanding about the role of HRM practices inside the ICT industry of Malaysian SMEs sector as a developing country. Through such practices organizations can improve the employees' knowledge and skills to facilitate the Malaysian vision (2020). Moreover, knowledge management (acquisition, sharing, and application) can help an enterprise to solve the problems and make a better decision. This research provides a perspective for SMEs sector in ICT industry to increase their OIP by managing their employees and prospers in a competitive industry. In addition, the significance practical contribution of this study help ICT providers to make decision to adopt the OIP and develop the HRM practices in order to enhance the decision making process in adopting the OIP in the

SME sector. Top manager also can identify the details of HRM practices and KM as well as trying to use the efficient practices and sufficient knowledge to solve the problems. This helps to promote innovative activities and change the growth rate in SME sector. Trading Economics for adopting the OIP in the SME sector lead to achieve high income and shift to a higher GDP rate in the SME sector based on Malaysia vision 2020. Finally, this is useful for Ministry of Higher Education to provide and improve employee's knowledge, expertise and establish talents for achieving organizational innovation performance.

1.7 Scope of the Study

The target population in this research includes managerial level working in the IT department of ICT (software) industry in Malaysian SMEs sector. The study focuses on all states of Malaysia; however, most of the enterprises are located in Kuala Lumpur and Selangor. Therefore, the size of the population of the current study is large enough to reflect the entire picture of the ICT industry of Malaysian SMEs sector. There are several reasons for choosing ICT software-based SME specifically in the ICT industry of Malaysia:

- i) ICT Software-based SME have a significant role in the economic performance of Malaysia especially in competing with other countries, but due to the global economic crisis the SMEs are now facing several issues (Rahim *et al.*, 2015; Dato Sri Mohd Najib, 2016).
- ii) The software is human-based and involves more innovative industry, which means that the role of humans is more superior than the technologies employed (Ministry of higher education, 2012; NKEA, 2014; Chowhan, 2016).
- iii) ICT industry has developed in recent years and is getting the right approach in HRM practices which can help gain sustainable competitive advantage by improving OIP (Ramachandran, 2012).

This research identifies the relationship among HRM practices (recruitment and selection, training, compensation, employee participation, performance appraisal, and career development) with organizational innovation performance via knowledge management (mediator).

1.8 Definition of Conceptual and Operational Terms

Human Resource Management (HRM): Tiwari and Saxena (2012) defined HRM as a process to extend expertise for enhancing the performance and the domains of performance, which include the enterprises, team, individuals and groups. This study examines HRM as a discipline to manage employees inside the organization in order to improve the competency of their approach and performance (Itika, 2011).

HRM Practices: HRM practices can be defined as a system for attracting, developing, motivating and retaining employee for the survival of the organization (Rahman, 2012). This study focuses on recruitment, selection, training, compensation, employee participation, performance appraisal and career development as main HRM practices to attract, develop, motivate and retain employees who are the key factors to increase OIP during Malaysian SMEs sector.

Knowledge Management (KM): Dalkir (2013) defined KM as deploying a comprehensive system for enhancing the growth of enterprise knowledge. This study describes KM as a management function, which includes acquisition of knowledge from inside and outside of the organizations, sharing the knowledge within managerial level and also applying knowledge in an effective way in the long run for the benefit of the organization (Nonaka and Takeuchi, 1996).

Organizational Innovation Performance (OIP): Academic works have given various definitions for innovation where each of them reveals its crucial aspects. This study ultimately defines innovation as employees' ability to function creatively, allowing the solving same problem in different ways, recognizing who are innovative

and give free time for creative idea inside the organization and also adequate resources devoted to innovation in the organization.

Recruitment and Selection: Recruiting and selection are crucial elements of a business, which allow the enterprises to have better performance (Chen and Huang, 2009; Zhu *et al.*, 2010). This study defines the recruitment and selection process through recruiting from internal and external organization. Moreover, the study measures RS through conducting structural interview or test activity to assess candidates with great characteristics or specific skills, which lead to improvement in terms of organizational innovation performance.

Training: Training is defined as a factor for enhancing the present and future performance of employees through development of the required knowledge and skills (Gao, 2011; Rahman *et al.*, 2012). In this study training is defined as a set of formal activities inside the organization provided for employees. Besides, appraisal performance mechanism identifies the training needs of problem solving ability in the organization. Based on the current study, training facilitated the capability of learning new knowledge and skills, which lead to enhanced innovation inside the organization.

Compensation: Compensation can be a strong message to the employee to seek or maintain some needed behaviors in the enterprise (Lively, 2014). The current study investigates compensation as a link between employees' performance and competencies with incentive pay which is financial and nonfinancial (profit sharing), which is useful for employees' motivation, improves their skills and attitude to continue the previous activities to accomplish the organizational goals.

Employee Participation: Employee participation refers to the process of empowering employees to play an active role in activities related to decision-making and improvement suited to their organizational level (Ghamsari, 2009). In this study, employee participation is describing as how employees make appropriate decisions and giving suggestion at work. Moreover, it examines how employees' voices to be

heard and valued by the organization which finally lead to rewarding employees for making appropriate suggestions in the organization.

Performance Appraisal: Lively (2014) found that appraisal is correlated with good achievement. The current study describes performance appraisal based on a regular basis inside the organization. Besides, organizations apprise their employees based on their continuous improvement and appropriate behaviors. Performance appraisal is described as a review of the employee's performance of given duties.

Career Development: Career development involves the process of upgrading an employee's work capability and performance with the objective of preparing the employee for the responsibilities in a future higher position (Gao, 2011). This study measures career development through career guidance and clear career ladder or path. This helps employees develop skills needed for future and is also inspiring new employees with the career development system in the organization. Career development is a very effective strategy which keeps valuable talents in an organization.

Small and medium enterprises (SMEs): SMEs play a vital role in developing the economy of Malaysia (SME Annual Report, 2006; Zakaria *et al.*, 2015). In this study, SMEs are examined based on 3 groups, microenterprise (employee less than 5 person), small enterprise (employee between 5-75 person) and medium enterprise (employee between 75-200 person). These classifications are based on the number of staff and the enterprises' sales turnover (SMIDEC, 2014).

1.9 Structure of the Thesis

Chapter 1 will discuss the background of the research, the problem statement of the research, significant and contribution of the research, and the research questions, which were derived from the problem statement. The objectives, scope and purpose of the research as well as the definitions of terms are also provided.

Chapter 2 will provide the literature review of the research through detailed discussion about the models, which were used to develop the research framework. All the constructs are explicitly discussed in this chapter along with their hypotheses.

Chapter 3 will provide an insight of the research methodology. The research design of the study and the sampling design are also discussed. The chapter presents an overview of the response rate of the questionnaire survey and provides a proper justification for the quantitative data analysis approach. The measurement scale and its reliability and validity are also reported.

Chapter 4 will examine the research hypotheses. The collected data are processed with the statistical software for Social Science (SPSS) version 22 and Partial Least squares (PLS) version 3.2.4 for Structural Equation modeling. In measuring the model, the coverage and discriminant validity were tested. Structural models were used to test the hypothesized relationships.

Chapter 5 will provide the findings of the study. The chapter starts with a discussion of the research process adopted for this study. The subsequent sections focus on a discussion on each research objective and provide a thorough explanation on the findings of the study. The theoretical, managerial and empirical implementations of the study are also provided following the limitations and future recommendations. The final section concludes the whole research and provides a revised framework for the study.

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