ORGANIZATIONAL LEARNING, INNOVATION AND ORGANIZATIONAL PERFORMANCE: AN EMPIRICAL STUDY OF SMALL AND MEDIUM-SIZED FIRMS IN THE ICT INDUSTRY IN MALAYSIA

BY

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ABSTRACT

With the emergence of information and knowledge-based economy, the competitive power of many companies lies in their ability to develop and improve organizational skills and capabilities. Substantial research on the importance of strategic resources as source of competitive advantage has mainly focused on developed economies covering large corporations across different industries. The results of these studies may not hold for developing nations and in particular, small and medium sized enterprises (SMEs) because of the differences in resources and human capital. To address this gap, this research therefore, builds on theories of resource-based, organizational learning (OL) and innovation to examine the strategic links between OL, innovation and organizational performance (OP) in the SMEs. The study was conducted in a Malaysian context from a sample of 450 SMEs which have attained the Malaysian Super Corridor (MSC) status. Four main hypotheses were formulated and tested using structural equation modeling techniques with Analysis of Moment Structure (AMOS Version 18.0) and multiple regression analysis with Statistical Package for Social Science (SPSS Version 17.0). Analysis of the data provided support for all the four hypotheses, and the following findings are established: (i) positive relation between OL and innovation; (ii) positive relation between innovation and OP; (iii) positive relation between OL and OP; and (iv) the mediating effect of innovation between OL and OP. Several implications for theory, management and policy are discussed in light of the findings of the study. The use of single-informant method, cross-sectional research design and focus on a particular industry are some of the constraints of this study. Future research may therefore incorporate multiple response method, longitudinal design and cover samples across different industries.

ملخص البحث

مع ظهور المعلومات والاقتصاد القائم على المعرفة، فإن القوة التنافسية للعديد من الشركات قائمة على تطوير وتحسين المهارات والقدرات التنظيمية. وقد ركزت معظم البحوث السابقة حول أهمية تطوير الموارد الاستراتيجية على الدول المتقدمة والشركات الضخمة في مختلف الصناعات. وعليه فإن نتائج هذه الدراسات لا تنتطبق في الدول النامية والمؤسسات الصغيرة والمتوسطة الحجم وذلك بسبب الاختلاف في الموارد ورأس المال البشري. لمعالجة هذه الفجوة ، يهدف هذا البحث المبني على نظريات التعلم القائمة على الموارد الطبيعية والتنظيمية والابتكار إلى دراسة العلاقات الاستراتيجية بين التعلم التنظيمي والابتكار والأداء في المؤسسات الصغيرة والمتوسطة. وقد أجريت هذه الدراسة على 450 مؤسسة ماليزية في قطاع تقنية المعلومات والاتصالات. وضع الباحث أربع فرضيات رئيسية وتم اختبارها باستخدام تقنيات النمذجة الهيكلية (Structural Equation Modeling) عن طريق تحليل الهيكل التنظيمي (AMOS)، واستخدام تحليل الانحدار المتعدد Linear regression عن طريق SPSS. أظهرت التحاليل للبيانات دعم لجميع الفرضيات الأربع ، وتم الوصول إلى النتائج التالية: (أ) العلاقة الإيجابية بين التعلم التنظيمي والابتكار (ب) العلاقة الإيجابية بين الابتكار والأداء، (ج) العلاقة الإيجابية بين التعلم التنظيمي والأداء و (د) دور الابتكار في التوسط بين التعلم التنظيمي والأداء. وتم مناقشة ما يترتب على هذه النتائج في مجال الإدارة والتنظيم والسياسة العامة. ومن الملاحظات على هذه الدراسة: الاعتماد على التقرير الذاتي والتركيز على صناعة معينة وهي تقنية المعلومات والاتصالات. ويمكن للبحوث المستقبلية دفع هذه الملاحظات باستخدام طرق أخرى، وأخذ العينات من مختلف القطاعات.

APPROVAL PAGE

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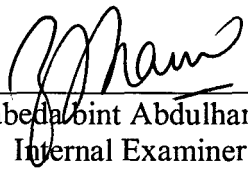

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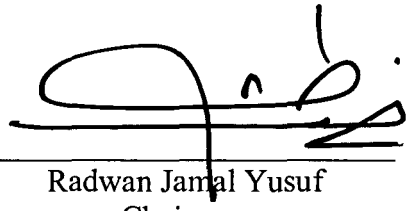

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

Islam Mohamed Salim

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CHAPTER ONE

INTRODUCTION AND OVERVIEW

1.1 INTRODUCTION

The first chapter introduces the research agenda and specifies the research problem and aims of the study. Following the background in section 1.2, the next sections proceed to specifying the research problem, research questions and research objectives. After this, the scope of the research and its significance are identified. The introduction also provides a glimpse of the research setting and context, which followed by definition of key terms used in the study. Thesis structure is presented prior to summarizing the chapter.

1.2 BACKGROUND OF THE STUDY

Organizations are in a continuous process of searching for strategies that would provide them with a competitive advantage. Efficiency in stable environments is achieved through standardized routines, division of labor and management control (Grant, 2005, 2010). However, recent changes in the business environment have compelled firms to search for new strategies for competitive edge as the conventional strategies have become obsolete (Chirico & Salvato, 2008). Economic globalization, which refers to integration of operations and markets in a borderless economic space (Johnson & Turner, 2003), and advances in information and communication technology are among the central environmental forces faced by contemporary organizations (Griffin & Moorhead, 2007; Hanna, 2010; Roy, 2005).

In order to cope with the current external opportunities and threats, organizations have to learn, that is, acquire new knowledge and skills that will improve their current and future performance (Child, Faulkner, & Tallman, 2005; DiBella, 1998; Ortenblad, 2001; Schein, 1993; Weiss, 1998). According to De Geus (1988: 70), "the only competitive advantage the company of the future will have is the ability of its managers to learn faster than the competitors." Many other researchers suggest that the effective strategy for sustaining and improving a firm's competitive edge and performance is organizational learning (OL) (e.g. Mavondo, Chimhanzi, & Stewart, 2005; Senge, 1990; Sinkula, Baker, & Noordewier, 1997).

Scholars such as Baker and Sinkula (1999), Huber (1998), Keiser and Koch (2008), and Nonaka (1994) also attest that the new knowledge and skills obtained through learning enhances firm's innovative capabilities thus improving the level of firms' competitiveness and performance. Research shows that innovation is linked to the concepts of generation, acceptance, and implementation of new ideas, processes, products and services (Damanpour, 1991; Drucker, 2002), and is determined by the firm's OL (Baker & Sinkula, 1999; Calantone, Cavusgil, & Zhao, 2002). Research by scholars such as Baker and Sinkula (1999), Bates and Khasawneh (2005) and Huber (1998) also indicates that the effect of OL on firm performance is likely to be both direct and indirect because the creation of innovative culture through OL allows firms to achieve a better competitive position and above-average performance.

Due to the growing interest in OL as an effective strategy for firm performance, the present research investigates the relationships between OL, innovation and organizational performance (OP) in small and medium enterprises (SMEs). The reason for choosing SMEs is that they play an integral role in the overall well-being of a country's economy both in developed and developing communities

(Demediuk, 2005; Turner, Ledwith & Kelly, 2010). Through flexibility, which allows them to quickly adapt to changing market conditions, SMEs also generate employment, help diversify economic activities, and contribute significantly to export and trade (Kamel, 2010; Organization for Economic Cooperation and Development [OECD], 2010).

The study's conceptual framework hypothesizes that a firm's level of OL contributes to its innovation, which in turn influences the firm's OP. It is also hypothesized that the OL directly affects performance. An integrative model of OL, OI and OP, which is based on prior literature, serves as the conceptual framework for the study.

1.3 PROBLEM STATEMENT

Since the beginning of the third millennium, the rules of doing business have greatly been influenced by globalization, innovation, and technology (Griffin & Moorhead, 2007; Kiggundu, 2002; Rainey, 2006). In order to successfully face the challenges of changing business environment, organizations need to focus on their core capabilities that would provide them with an advantage over their competitors (Drejer, 2002; Leonard-Barton, 1992; Nordin, 2008).

The increasing domestic and global competition in product markets is forcing the prices down while driving up the requirements for quality and innovation (Abonyi, 2007). This increasing competition creates a difficult competitive environment for enterprises that do not comply with the changing rules of business. The challenges faced by SMEs while competing in domestic or even global markets are compounded by their size and limited resources as opposed to the well established corporations which enjoy advantages of economies of scale (Audretsch, 2009).

In the Malaysian context, SMEs are faced with challenges such as limited adoption of technology, lack of skilled expertise, and competition from large corporations and globalization (Ahmad, Abdul Rani & Kassim, 2010; Saleh & Ndubisi, 2006).

In the face of these challenges confronting the SMEs, it is argued that one of the critical ways to achieve a competitive edge is through an efficient and systematic management of knowledge, which has become a strategic asset (Bollinger & Smith, 2001; Grant, 1996a; Ward & Wooler, 2010). If learning at organizational level, is not the only sustainable competitive advantage (De Geus, 1988; Hatch & Dyer, 2004; Pietersen, 2010; Probst & Bu chel, 1997; Stata, 1989), it can be considered as one of the most important factors in competitiveness (Karlsson, Flensburg & Ho rte, 2004; Rugman & Cruz, 1991; Wright, Suh & Legget, 2009). Survival in today's competitive business world is limited to organizations that are able to respond to market signals and that can quickly and efficiently exceed customer expectations (Caloghirou, Protogerou, Spanos & Papagiannakis, 2004; Porter, 1985).

OL is believed to highly influence innovation, which in turn helps organizations withstand increased competition in the industry. OL is also argued to help firms in formulating appropriate responses to challenges in the market and industry environment (Baker & Sinkula, 1999; García-Morales, Matías-Reche, & Hurtado-Torres, 2008; Jiménez-Jimenez, Sanz Valle & Hernandez-Espallardo, 2008).

Because of paucity of research in SMEs especially in developing nations, the problem which this research aims to resolve is whether the implementation of OL and innovation in SMEs will significantly lead to improvement in OP. The research also seeks to examine whether the influence of OL on OP can be mediated by innovation

especially in a technology-driven industry. The industry has been chosen for its role in improving productivity and economic growth of Malaysia (Kurihara, 2008).

1.4 SCOPE OF THE RESEARCH

This research focuses on studying OL, innovation and performance in small and medium sized ICT firms in Malaysia. The unit of analysis is individual businesses representing SMEs. According to Small and Medium Enterprise Corporation Malaysia (SME Corp. Malaysia), SME in the services and ICT sectors are enterprises with full-time employees not exceeding 50 or with annual sales turnover not exceeding RM 5 million (Harvie & Lee, 2008; SME Corp. Malaysia, 2010).

1.5 RESEARCH QUESTIONS

Four key questions represent the main areas to be investigated in this study. According to Creswell (1994) and Jones (1998), limiting the study to four research questions allows a narrow focus, and does not lead to overly constraining the research. The main research questions are:

i. What is the influence of OL on innovation for SMEs in the ICT sector?
ii. What is the influence of innovation on OP of SMEs in the ICT sector?
iii. What is the influence of OL on OP of SMEs in the ICT industry?
iv. Will innovation mediate the effect of OL on OP of SMEs in the ICT industry?

All the four research questions implicitly contain subquestions (Creswell, 1994; Miller & Yang, 2007), but are not included to avoid question proliferation, which diminishes the flexibility of the research (Jones, 1998). For instance, a subquestion for Question 1 could be, "what is the extent of OL in Malaysian SMEs in the ICT sector"

For Question 2, the subquestion could be, "to what extent are ICT-based firms innovative?" For Question 3, the subquestion could be, "to what level does commitment to learning influence OP?"

1.6 RESEARCH OBJECTIVES

This study investigates the relationship between OL, innovation and OP of the Malaysian SMEs in ICT sector. It aims at advancing empirical research on OL by examining its impact on innovation and OP. The specific objectives of the present research are:

i. To examine the influence of OL on OI for SMEs in the ICT sector.

ii. To examine the influence of OI on OP for SMEs in the ICT sector.

iii. To investigate the influence of OL on OP for SMEs in the ICT sector.

iv. To examine whether the OL-OP relationship is mediated by innovation.

1.7 SIGNIFICANCE OF THE RESEARCH

This study advances and validates the underlying theories of organization (e.g. the resource-based theory and OL theories) through examination of the links between OL, OI and OP. A conceptual model is developed and tested statistically and the resulting findings compared with the leading empirical studies in the same domain. Also, given the increasing number of countries in Asia and Africa that exhibit similar market conditions with Malaysia and share similar structures and strategies, the current study might be relevant as a benchmark for future replication studies.

From practical point of view, managers will be provided with suggestions and insights of how to develop learning-oriented and innovative organizations, which are significant for enhancing employee commitment and performance. In addition, by

empirically testing the links between OL and innovation, managers will be encouraged to apply either both or one of them according to the needs and cost-benefit analysis.

1.8 THE RESEARCH SETTING

This research is motivated by a gap in the literature on understanding the interrelationships among OL, OI and OP in the SME context. It is noted that majority of the conceptual and empirical studies in the literature focus on large and established corporations (e.g. Domivski & Skerlavaj, 2009; Jashapara, 2003; Lopez et al., 2005), and little attention has been given to SMEs.

For example, Chaston, Badger, Sadler-Smith and Mangles (2001) argue that OL is one of the neglected areas of small firm research. This implies that our knowledge of the interaction between OL and the entrepreneurship process is limited (Deakins, 1998). Thus, by acknowledging the significant contribution of SMEs to the community, it is highly important to understand the SMEs specificity of OL processes in relation to their innovation.

The rationale for selecting ICT sector, which encompasses the hardware, software, services and telecommunications clusters, is that the sector accounted for about 9.8 per cent of Malaysia's total gross domestic product (GDP) in 2009 (Kumar, 2010). The contribution of the ICT industry to GDP is targeted to increase to 10.2 % by 2015 (Kumar, 2010). The Malaysian ICT industry is demonstrating high growth rates and emerging as a strong contributor to the country's employment and economic growth (Hamzah & Isa, 2010).

Another justification for the choice of ICT sector is that ICT-related industries are becoming a niche area for investment and growth. The rapid technological change has led to a surge in the use of digital technologies (Komninos, 2008) thus leading to

the liberalization of the telecommunication industry and fast growth of the internet economy (Charles & Furar, 1998). This accelerated rate of ICT diffusion and growth encourages both local and foreign firms to invest in the ICT-related technologies (Mudd, 2007).

The rationale for choosing Malaysia for conducting this research is that the country is one of the fastest developing nations in terms of economic and technological developments (Munoz, 2010). It has made great strides in improving its peoples' quality of life through the advancement of its infrastructure and industries. Furthermore, the Malaysian government has strengthened the role of ICT in national economic development (Akhtar & Arinto, 2009). It has set up various institutes and developed several economic plans aimed to provide stronger platform for the country's transition towards a knowledge-based economy (Akhtar & Arinto, 2009). For example, in the Ninth Malaysian Plan (2006-2010), the focus was on advancements in the global digital environment and promoting wider ICT usage in all aspects of life (Akhtar & Arinto, 2009). An overview of the Malaysia's ICT environment is provided below:

1.8.1 Overview of Malaysia's ICT Environment

The Malaysian National ICT Agenda defines ICT as both production sector and an enabler in its growth development strategy and in moving the country into knowledge society and knowledge economy. In the Eighth Malaysian Plan, ICT was considered a key strategic driver to support and contribute directly to the growth of the economy and to enhance the quality of life of the population (The Economic Planning Unit [EPU], 2006). Similarly, in the Ninth Malaysian Plan, ICT was regarded a key determinant in the development process to move the economy up the value chain

(EPU, 2006). Since then, various ICT strategies have been developed in order for the Malaysian economy to become more competitive in the globalized market.

Government spending on ICT has continued to grow annually over the past decade. Figure 2.3 depicts that, in 2006, ICT spending accounted for 10.7 percent of the national GDP. Following the 2008 financial crisis which affected the ASEAN region, the spending plummeted to 9.8 percent of the GDP. After the recovery, the spending increased again such that by 2010, the ICT expenditure accounted for 10.2 percent of GDP, equivalent to RM 5.80 billion (Figure 1.1).

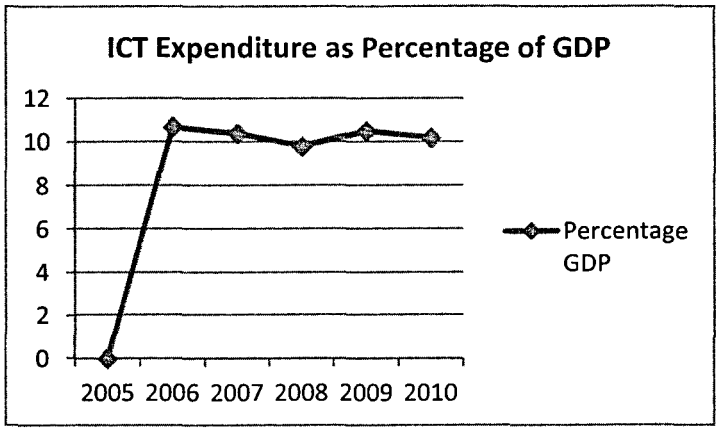

Figure 1.1: Government ICT Spending (%GDP)

ICT expenditures include computer hardware (computers, storage devices, printers, and other peripherals); computer software (operating systems, programming tools, utilities, applications, and internal software development); computer services (information technology consulting, computer and network systems integration, web hosting, data processing services, and other services); communications services (voice and data communications services) and wired and wireless communications equipment.

The World Economic Forum uses the network readiness index (NRI) to assess the degree of preparation of a nation or community to participate in and benefit from ICT (Dutta & Jain, 2004). According to the Forum's report, Singapore is the most networked nation in Asia, and second in the world after Sweden. Meanwhile, Malaysia ranked first among upper-middle income group of countries, and sixth in the Asian region. The country's score increased from 4.65 in 2010 to 4.74 in 2011 (Table 1.1).

Table 1.1
Malaysian Ranking and Score of NRI (World Economic Forum, 2011)

Rank in Asia	Country	Score 2011	Score 2010	Global Rank
1	Singapore	5.60	5.60	2
2	Taiwan	5.30	5.20	6
3	South Korea	5.19	5.14	10
4	Hong Kong	5.19	5.33	12
5	Japan	4.95	4.89	19
6	Malaysia	4.74	4.65	28
7	China	4.35	4.31	36
8	India	4.03	4.09	48
9	Indonesia	3.92	3.72	53
10	Vietnam	3.90	3.87	55

The Multimedia Super Corridor (MSC) is Malaysia's most prominent initiative for the global ICT industry (Figure 1.1). The corridor, incepted in 1996, hosts more than 1000 foreign and local companies focused on computer hardware, software and communications products (Turpin & Krishna, 2007). The MSC is also an ideal growth environment for Malaysian SMEs to transform into world-class firms (Ronchi, 2009; Turpin & Krishna, 2007).