THE MEDIATING EFFECTS OF INNOVATION ON THE RELATIONSHIP OF MARKET ORIENTATION DIMENSIONS AND ICT SMALL AND MEDIUM SIZED ENTERPRISES' PERFORMANCE

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Dissertation submitted to the College of Business, Universiti Utara Malaysia in partial fulfillment of the requirement for the degree of Doctor of Business Administration

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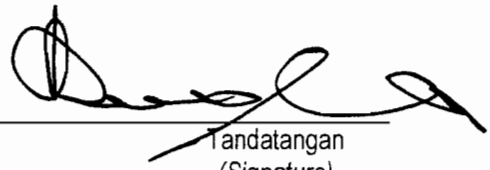

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ABSTRAK

Kajian-kajian lepas telah menunjukkan bahawa orientasi pasaran mempunyai pengaruh positif ke atas prestasi firma besar dan kecil. Bagaimanapun, tidak banyak yang diketahui mengenai kesan pengantaraaan inovasi ke atas hubungan di antara orientasi pasaran dan prestasi firma kecil. Kajian ini memenuhi jurang dengan menyelidiki hubungan antara orentasi pasaran, inovasi dan prestasi perniagaan enterprais kecil dan sederhana dalam industri ICT di Malaysia. Hipotesis-hipotesis untuk perhubungan ini di bentangkan.

Orientasi Pasaran diukur melalui tiga komponen atau konstruk iaitu orientasi pelanggan, orientasi pesaing-pesaing dan koordinasi inter-fungsi. Inovasi telah di ukur melalui skala ke atas produk dan perkhidmatan baru (didefinisikan sebagai peningkatan sambungan produk, pembangunan produk yang unik, perkhidmatan atau proses atau satu produk baru), dan kaedah baru pemasaran, yang di perkenalkan oleh syarikat sebagai cara baru melayan pelanggan, manakala ukuran bagi prestasi perniagaan adalah berasaskan kepada pertumbuhan jualan, keuntungan kasar (sebelum cukai), keberuntungan, persepsi kejayaan perniagaan keseluruhannya.

Data kajian diperolehi melalui kaji selidik yang di hantar terus kepada pemilik/pengurus sebagai responden. Sebanyak 1000 pemilik/pengurus enterprais kecil dan sederhana dalam bidang ICT yang berstatus MSC telah di hantar dengan borang kaji selidik, dan sebanyak 272 atau 27.2 peratus mengembalikannya. Data yang di perolehi dianalisis dengan menggunakan aplikasi SEM AMOS 6.0 dan SPSS 16.0. Kajian ini memberi sumbangan kepada literatur bidang pemasaran dengan menunjukkan bahawa orientasi pasaran dan inovasi membawa kepada prestasi perniagaan yang besar. Orientasi pasaran tidak memberi kesan kepada prestasi secara terus. Bagaimanapun inovasi mempunyai kesan positif secara terus yang signifikan terhadap prestasi perniagaan. Inovasi juga mengantarakan model hubungan di antara orientasi pasaran dan prestasi perniagaan. Dapatan kajian ini, disamping menyumbang kepada keilmuan, akan membantu pembuat-

pembuat dasar dan pemilik-pemilik enterprais kecil dan sederhana dalam usaha mereka meningkatkan pasaran dan inovasi. Kekangan kajian dan cadangan-cadangan untuk penyelidikan akan datang juga dibincangkan.

ABSTRACT

Past research had shown that market orientation has a positive influence on the performance of large and small firms. However, little is known on the mediating effect of innovation on the relationship between market orientation and small firm performance. This study fills up the gap by investigating the relationship between the market orientation, innovation and business performance of SMEs in the ICT industry in Malaysia. Hypotheses on these relationships were presented.

Market orientation was measured through three dimensions or construct namely; competitors orientation, customer orientation and inter-functional coordination. Innovation was measured on the scale of new product and services (defined as improved product extension, development of novel of unique product, service or processes or a new product line) and new method of marketing, introduced by the company with a new way to serve customer, while measurement of business performance was based on ROA (return of asset), sales growth, gross profit (before tax), profitability and overall perceived business success.

The research data were obtained by means of mail survey directly to owner/manager respondents. There were 1000 SMEs ICT with MSC status business who were sent with the questionnaires and 272 or 27.2 percent of them responded. The analysis method of research used structural equation model (SEM) AMOS 6.0 and SPSS 16.0. The study contributed to the marketing literature by showing that market orientation and innovation lead to greater business performance. Market orientation does not affect business performance directly. However Innovation has a positive significant direct effect to business performance. Innovation also mediates the market orientation and business performance model relationship. Finding of this study, while contributing to the body of knowledge, will also assist the policy makers and the SMEs owners in their marketing effort and in fostering the innovation. Limitations and recommendations for future research were also discussed.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

It has been recognized that small and medium sized enterprises (SMEs) play an important role in the Malaysian economy. Studies have also shown that SMEs are able to create employment, new industries, develop new and innovative products and form an integral part of value chain in the production network (Normah, 2007). A nationwide census of establishment and enterprises conducted in 2005 revealed that SMEs were a major source of employment whereby it was found that SMEs provided employments for over three million work force or a good 65.1 percent of total employment in Malaysia. The employment area was engaged in three main sectors of the economy whereby the largest number of employment was found in the service sector which comprised of 2.2 million employees, whereas 740,438 and 131,130 were employed in the manufacturing and agricultural sectors, respectively. In terms of contribution to the economy, SMEs generated RM154 billion or 47.3 percent of value added and RM405 billion or 43.5 percent of total output (Bank Negara Malaysia, 2008; SMEinfo, 2008). The census also showed that 4,257 SMEs exported their goods and services with a total figure of RM38 billion (Bank Negara Malaysia, 2008; SMEinfo, 2008).

It was noted that although SMEs accounted for the bulk of business enterprises and employed a big majority of the workforce, their contribution of 32 percent to the gross

domestic product (GDP) and 19 percent of the total export value was relatively insignificant (Bank Negara Malaysia, 2008). Furthermore, productivity levels of SMEs were found to be significantly lower than large firms with a recorded value-added per establishment of only RM0.3 million compared to RM41 million for large enterprises (SMIDEC, 2008). It was revealed that SMEs in Malaysia had low levels of investment in research and development (R & D) and this contributed to low productivity (SMIDEC, 2008; SMEinfo, 2008). In addition, the SMEs had few marketing and promotional activities. Only RM2 billion was invested annually on R&D while less than 10 percent of the SMEs investment were engaged in marketing and promotional activities (SMIDEC, 2008). A study by Saleh and Ndubisi (2006) also found that SMEs in Malaysia were constantly facing various types of challenges and obstacles which had resulted in the stagnation of their growth and low performance. These challenges had caused the SMEs the inability to face stiffer competition which arose from the effect of globalization, greater economic liberalization and this was compounded by changes that took place at the organizational, institutional and technological levels in the SMEs. Some of the problems highlighted in this study were caused by the insufficient knowledge on markets and customers, low productivity, lack of technology capabilities as well as knowledge acquisition (Saleh & Ndubisi, 2006). Thus, the focus of the study is to investigate the factors affecting SMEs performance with respect to market orientation dimension and innovation using resource base theory.

In the 1990s, the Malaysian economy had evolved from one that was capital and labour intensive to the more knowledge based services with the establishment of Multimedia

Super Corridor (MSC). The MSC's policy was to catalyze and nurture local companies and SMEs to become global players who could forge successful smart partnerships between Malaysian companies and international companies (MDeC, 2008). Through the MSC's initiative, the country has managed to attract leading Information Technology Communication (ICT) companies globally to undertake research, to develop new innovative products and technologies, and to provide the base for export. In 2006, the ICT industry contributed to 5.7 percent of the Malaysian GDP (Frost & Sullivan, 2007). Furthermore the ICT industry possesses several important features when compared with other industries, as for instance, the industry is also most heavily dependent upon scientific knowledge.

The Multimedia Super Corridor is an ideal growth environment for the Malaysian ICT small and medium sized enterprises to transform themselves into world-class companies. These SMEs have been trained, nurtured and aided by the government to promote on research and development and to focus on product development. However, the nature of ICT based SMEs are that they are dynamic and inherently risky because the future is less predictable. Therefore these SMEs not only face competition from bigger players but also competition from new players as they lack in market orientation focus (NSDC, 2006). Porter (1985) argued that technology development and technology capabilities are an important gateway to enter industries that face rapid technological change and dynamic environment. Therefore to remain competitive in the ICT industry, these SMEs must not only possess technological capabilities but also focus on marketing.

Why is marketing important to SMEs? According to Kotler (1994), marketing activities are important factors that influence the success of business. However, most SMEs do not place enough importance on in-depth market information but instead rely too much on intuition when estimating market potential (Van Dierman, 1995; Kinsey, 1987). In today's competitive environment, the globalization in world market and the increasingly uncertainty of customers taste makes it essential for small firms to understand their customers' need when marketing products and services (Pelham, 2000). Marketing is often noted as a critical constraint to the development of SMEs. Marketing is also an important aspect where SMEs have to look at their business strategy and offer new approaches in order to create differentiation and brand perspectives.

The marketing concept represents the base philosophy upon which the marketing discipline is established. Kohli and Jaworski (1990) use the term market orientation to explain the implementation of the marketing concept. Narver and Slater (1990) found that market orientation and performance were strongly related. Besides that, Drucker (1985) and Kanter (1989) also found that a firm's market orientation has been recognized as essential attributes of high organizational performance. Kohli and Jaworski (1990) stressed that market orientation emphasizes the firm's responsiveness toward changes in customers' needs and wants. Therefore it can be said that the adoption of a market orientation sums to making the target markets as central focus for all business activities as a market oriented firm is presumed to have superior market sensing and customer linking capabilities and these capabilities are presumed to assure them higher profits in comparison with firms that are less market oriented (Day, 1994).

DeMoranville (1999) pointed out that decision-makers often need guidance in how to start and use market orientation to increase their competitive advantage. Determining the needs and wants of the customers is embedded in the values and beliefs of the market oriented firms (Kotler, 1980). Besides, satisfying the target customer is the focal point of market-oriented businesses. Evidently the values and beliefs of placing the customer as the focus has market-oriented firms to set specific behaviours to higher the level of customer satisfaction and to greater business performance (Narver & Slater, 1990).

Studies also show that market orientation consists of certain behaviours and activities to achieve a positive result in business performance (Hurley & Hult, 1998). As such, market orientation should focus around understanding the determinants of a firm's behavioural orientation toward the market place (Lukas, 1996). According to Narver and Slater (1990) there are three behavioural components of market orientation; customer orientation, competitor orientation and inter-functional coordination. Customer orientation refers to understanding the target customers to continuously create super values for the customers while competitor orientation refers to understanding the current and potential competitors' strengths and weaknesses and capabilities and strategies. Inter-functional coordination refers to coordinately using the firm's resources to create super value for the target customers. The implementation of all the three behavioural components of market orientation will provide a business firm with the comprehensive framework to create sustainable superior value for its current and future customer needs and preferences (Lukas, 1996).

1.2 PROBLEM STATEMENT

Small and medium sized enterprises (SMEs) constitute 99 percent of the total business establishments in Malaysia. However, their contribution to the Gross Domestic Product (GDP) was only 32 percent, which is relatively insignificant. It appears that SMEs are not yet major contributors to the economic output although they represent the majority of the business sectors. This is despite various government policies and support programs aimed to stimulate the growth and enhance competitiveness of the SMEs (Amin, 2001). It is acknowledged that strong, dynamic and efficient SMEs would play a key role in creating competitive advantages and ensuring sustainable economic development. As key drivers to the economic growth, there is a need to study the behaviours of SMEs in order to provide insights on ways to enhance competitiveness and improve performance. In addition, there is also a need to focus the service sector of the SMEs, especially the information and communication technology (ICT) industry, since this sector becomes a more important contribution to the GDP as Malaysia moves toward a developed nation status.

Past studies have recognized that the firm's market orientation is an essential attributes of high organizational performance (Drucker, 1985; Kanter, 1989). It is believed that market orientation can provide a solid foundation for a sustainable competitive advantage for a firm, which in turn will enhance the firm's performance (Narver & Slater, 1990; Slater & Narver, 1994b; Hunt & Morgan, 1995). Although there were studies that confirmed the positive association of market orientation with performance in other sectors such as non-

profit organizations (Siu & Wilson, 1998; Gainer & Padanyi, 2002; Vazquez, Alvarez & Santos, 2002), public organizations (Caruana, Ramaseshan & Ewing, 1999; Cervera, Molla & Sanchez, 2001), and political parties (Lees-Marshment, 2001; O'Cass, 2001), most of the studies on market orientation were conducted in large business firms and organizations or in countries whose economies have witnessed maturity and stability (Kumar, Subramaniam & Yauger, 1997; Schayek, 2008). At the same time, mixed findings were reported regarding the direct and indirect influences of market orientation and performance. Some studies have linked market orientation to favourable performance (Slater & Narver, 1994; Pitt, Caruana & Berthon, 1996; Atuahene-Gima, 1996; Egeren & O'Conner, 1998; Homburg & Pflesser, 2000; Dwairi, 2004), while some other studies have linked market orientation to unfavourable performance (Bhuin, 1997; Gray, Matear, Boshoff & Matheson, 1998; Grewal & Tansuhaj, 2001; Bhuian & Habib, 2001). Still others have found that market orientation has no effect on firm performance (Greenly, 1995; Han, Kim & Sirvastava, 1998; Siguaw, Simpson & Baker, 1998; Perry & Shao, 2002; Langerak, Hultink & Robben, 2004). Interestingly most of these inconsistencies emerged in the non-developed economies (Diamantopoulos & Hart, 1993; Greenley, 1995, Appiah-Adu, 1998; Dwairi, 2004). Therefore, it is important to extent the study on the effect of market orientation on the business performance of ICT based SMEs in an emerging economy like Malaysia. Exploratory studies which focused specifically on factors that contribute to the performance of Malaysian ICT based SMEs are inadequate and limited, and still low in number due mainly to the fact that the country's foray in the ICT based industries is at its infancy (MDEC, 2009). Dalrymple and Parsons (1995) argued that if a developing country implements economic reforms, then market

orientation is required as that particular country strives to survive in new markets. Thus in the context of Malaysia, there is a need to conduct a study on how marketing factors contribute to the performance of SMEs so as to produce more successful and resilient entrepreneurs, especially in the information and communication technology sector. In addition, most studies on market oriented firms focused on a single dimension of market orientation (Hurley & Hult, 1998). Narver and Slater (1990) and Lukas (1996) also suggested that only the implementation of all the three behavioural orientations provided an organization with the comprehensive framework to create sustainable superior value. Therefore, it is important to extend the study on the market orientation's effect on business performance as a multi-dimensional measures consisting of customer orientation, competitor orientation, and inter-functional coordination.

When considering today's fast changing technology and aggressive competition in the markets, SMEs need unique and innovative ideas and products to compete with larger and more established firms. SMEs also need to rely on a steady flow of innovative products for survival and competition (Deeds, Decarolis & Coombs, 2000). Innovation is thus a critical element for the SMEs to improve and maintain their competitiveness (Rothwell & Dogson, 1991). In addition, market orientation is also seen as a continuous innovative behaviour (Kohli & Jaworski, 1990) as the activities and behaviour of market orientation appeared to influence the innovative activity in small and medium sized firms. Han, Kim and Srivastava (1998) found that firms that are less market oriented are less likely to consider innovation. It was also found that market oriented firms also tend to implement greater innovation in products and services that offer value and benefits to

customers. Lumpkin and Dess (1996) and Hamel (2000) suggested that innovation may be the most important strategy of a firm since it contributes to business performance and this has been backed by empirical evidence that showed a positive relationship between high innovation and superior profitability (Robert, 1999). Innovation is also linked to successful firms in both industrial and service sectors (Gupta, Macmillan & Surie, 2004), and effective innovations help to create a competitive advantage by creating new value for customers (Mizik & Jacobson, 2003). Grewal and Tansuhaj (2001) also found positive relationships between market orientation and innovation, and between innovation and performance.

In their research, Narver and Slater (1994) introduced innovation as a core capability and as a catalyst mediating the market orientation and performance relationship. However, the construct of innovation has been absent in market orientation models (Hurley & Hurt, 1998). It has also been shown that market orientation by itself does not singularly contribute to an organization's achievement on competitive advantage (Han, Kim & Srivastana, 1998). Hurley and Hurt (1998) argued that market orientation models should include innovation as it is a pivotal mechanism of capability development. Innovation is the fundamental internal capability that provides a firm with a competitive advantage resulting from higher levels of performance. Thus, it is also important to extend this study on the mediating effect of innovation on the relationship between market orientation and performance of ICT based SMEs in the Malaysian context.

1.3 RESEARCH QUESTIONS

The existing empirical evidence regarding the effects of market orientation on performance is mixed. Some studies have linked market orientation to favourable performance, while other studies have linked market orientation to unfavourable performance. In addition, most of these studies focused market orientation as a uni-dimensional construct with three equally weighted behavioural components; customer orientation, competitor orientation, and interfunctional coordination. Only the implementation of all the three components provides an organization with the competitive advantage. Furthermore, most of the models and research on market orientation lack assimilation of the influence of innovation. Therefore, the following research questions are addressed:

1. Are there significant relationships between components of market orientation and innovation?
2. Are there significant relationships between components of market orientation and business performance?
3. Is there a significant relationship between innovation and business performance?
4. Does innovation mediate the relationship between components of market orientation and business performance?

1.4 RESEARCH OBJECTIVES

The objective of this study is to investigate the relationship between market orientation components and business performance and the effects of market orientation on innovation and business performance of SMEs in the ICT sector in Malaysia. This study also aim to investigate the mediating effects of innovation on these propose relationship.

Specifically, the objectives of this study are:

1. To determine the relationships of market orientation components and innovation of the SMEs:
    a. To determine the relationship between competitor orientation and innovation of the SMEs,
    b. To determine the relationship between customer orientation and innovation of the SMEs, and
    c. To determine the relationship between inter-functional coordination and innovation of the SMEs.

2. To determine the relationships of market orientation components and business performance of the SMEs:
    a. To determine the relationship between competitor orientation and business performance of the SMEs,

b. To determine the relationship between customer orientation and business performance of the SMEs, and
c. To determine the relationship between inter-functional coordination and business performance of the SMEs.

3. To determine the relationship between innovation and business performance of the SMEs.

4. To determine the mediating effect of innovation on the relationships of market orientation components and business performance of the SMEs:
   a. To determine the mediating effect of innovation on the relationship between competitor orientation and business performance of the SMEs.
   b. To determine the mediating effect of innovation on the relationship between customer orientation and business performance of the SMEs, and
   c. To determine the mediating effect of innovation on the relationship between inter-functional coordination and business performance of SMEs.

1.5 SIGNIFICANCE OF THE STUDY

The importance of SMEs to the Malaysian economy has never been accepted as one of the most important driving forces for economic development and social advancement. SMEs have often been described as the engine of growth and account for many new job creations. Therefore, this study is significant for a number of reasons. First, this study helps to identify various interacting variables with the business performance of SMEs in the Malaysian context. By understanding these relationships and new methods, strategies could be developed to improve the firms' performance, which will directly help them to become more competitive in today's dynamic market.

Second, this study will assist the policy-makers, other government agencies and SME owner-managers in understanding the problems SMEs face in their attempt to compete and survive in this competitive business environment.

Third, the findings of this study will contribute to the development of improved theories and models of market orientation in order to improve the firm's performance. It is generally accepted that no models on market orientation have been fully verified and empirical evidences have been lacking as well.

Fourth, this study provides the basis for more extensive and intensive studies on improving the performance of SMEs in Malaysia. Due to the heterogeneity of the SMEs, the findings and implications of this study may not necessarily generalize to all small and medium sized firms in the country. Finally, as the government has assigned considerable huge amount of funds and grants to this sector, it is crucial to witness its contribution to the economy via continuance of the business. The outcomes of this study is hoped to be

used by Malaysian Government in establishing the best strategies in developing SMEs entrepreneurs in Malaysia.

1.6 DEFINITION OF TERMS / CONCEPTS

Market Orientation: Market orientation is the organizational culture that most effectively creates the necessary behaviours for the creation of superior value for customers, and thus continuous superior performance for the business. Market orientation creates superior value for customers through three behavioural components; competitor orientation, customer orientation and inter-functional coordination (Pelham & Wilson, 1996; Narver & Slater, 1990).

Competitor Orientation: Competitor orientation is explained as the understanding of the strengths and weaknesses as well as capabilities and strategies of key competitors so as to satisfy target customers' current and future needs. Competitor orientation is necessary for maintaining a competitive advantage in the market place (Lukas, 1996; Narver & Slater, 1990).

Customer orientation: Customer orientation is a set of organizational activities and behaviours to increase benefits to target customers. Its primary focus is finding ways to provide superior customer value on a continued basis. Customer orientation also

advocates continuous proactive engagement towards customers' urgencies (Jaworski & Kohli, 1990; Narver & Slater, 1990).

Inter-functional Coordination: Inter-functional coordination is a set of activities and behaviour that relies upon the interdependence of each functional area in the organization to ensure that the firm resources are utilized in such a way to create value and benefits to the customers (Porter, 1985).

Innovation: Innovation is defined as the willingness to support creativity and experimentation in introducing new products/services and novelty, technological leadership, and R&D in developing new processes (Lumpkin & Dess, 1996). Innovation can also be interpreted broadly as encompassing new product development or new service development, new method of market development, development or implementation of new technology as strategy or establishment of new markets (Verhees & Meulenberg, 2004). Besides, innovation should be positively related to success because with new ideas, one can capture important segments of the market (Lumpkin & Dess, 1996). The role of innovation mediate between the market orientation and business performance in this study will be measured based on the scale of new product and services introduced by the SMEs with new ways to serve customers (Han et al.,1998).

Business Performance: Business performance is determined by subjective self-reporting measures via structured questionnaire, where the firms would be asked to assess their

financial and market performances relative to key competitors. Measurement will be based on the gross profit, return on asset (ROA), profitability, growth in sales, and overall perceived business success (Kohli & Jaworski, 1990).

Small and Medium Enterprises (SMEs): SMEs are defined as firms or enterprises in the service and information and communication technology sectors with full time employees not exceeding 50 or with annual sales turnover not exceeding RM5 million (Bank Negara Malaysia,2008; SMIDEC, 2008; SMEinfo, 2008).

1.7 SCOPE AND LIMITATION OF THE STUDY

There are some methodological and theoretical limitations in this study. The study focuses only on the SMEs whereby their core businesses are in the ICT services industry and with MSC status within Cyberjaya, Selangor. The study addresses the small firm from the market orientation and innovation perspective.

The primary limiting factors of the study are listed as follows:

- The location - this study is on MSC status companies within Cyberjaya, in the State of Selangor, Malaysia.
- Sample size and single sources - there was reliance upon the maximum number of respondents utilized. Some of the respondents from which the sample was drawn were reluctant to respond and some were not able to be contacted.

- Distribution - the sample size was based on the total of 1911 firms in Cyberjaya and the number of small firms that were listed as SMEs, accounted to 1000 firms and hence the population of this study was on the 1000 firms.
- SME and Internationalization - the study relied upon the perception of Malaysian small firms. Future researches might investigate the effect of market orientation globally by studying the internationalization of Malaysian SMEs, as market orientation and innovation are bigger prospect and face more challenges to be implemented when these Malaysian SMEs go abroad.

1.8 ORGANIZATION OF THE DISSERTATION

The dissertation is organized into five (5) chapters. Chapter One provided an introduction to the study. It included the background to the research problem, objectives of the study and organization of the dissertation. Chapter Two incorporates the following topics: review of the SMEs, review of market orientation, review of innovation, and relationships between market orientation, innovation and business performance. Chapter Three covers five (5) sections: research design and sampling procedure, measures and instrumentation, reliability and validity, and data collection process.

Chapter Four presents the analysis and results of the study. This chapter discusses measurement validity for market orientation, innovation and business performance with respect to a confirmatory factor analysis. The later part of the chapter discusses the

statistical model and analysis including structural equation model (SEM) and hypotheses test results for the SEM. Chapter Five discusses the study's conclusions and implications of the study. The first half of the chapter discusses about the conclusions of market orientation and performance, market orientation and innovation, innovation and performance, and the mediating effect of innovation in the market orientation and performance relationship. The second half presents theoretical and managerial implications. Finally, limitations and future research issues are offered to conclude the chapter.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter aims to review selected literature, formulate hypotheses for the study and support a theoretical framework for the development of the research model. The chapter begins with the definition of SMEs in Malaysia, and further explains how the SMEs in Malaysia developed. The next part of the chapter discusses literature review of the concepts and variables associated with market orientation, innovation and firm performance. Research hypotheses and the model to be tested are presented as the final part of this chapter.

2.2 SMALL AND MEDIUM ENTERPRISES IN MALAYSIA

2.2.1 Definition

There is no universally accepted definition of a small firm or SME. Definition varies from one country to another. The most common measure of the size of an enterprise or firm is the number of employees. However, a firm may be regarded as small in some countries but may not be categorized as such in other countries (Mahmood, 2001). This study adopts the definition employed by the Small and Medium Industries Development

Corporation (SMIDEC), which is now known as SME Corporation Malaysia. SME Corp is an agency under the Ministry of International Trade and Industry (MITI), and as a one stop agency that undertake the overall coordination of SME policy formulation and assessment of the SME development programme. The definition is categorized into two sectors ; that are SMEs in manufacturing sectors and SMEs in service sector. SMEs in the manufacturing or manufacturing related services and agro-based industries are enterprises with full-time employees not exceeding 150 or with annual sales turnover not exceeding RM25 million. Whereas SMEs in the service or primary agriculture and information and communication technology (ICT) sectors are enterprises with full-time employees not exceeding 50 or with annual sales turnover not exceeding RM5 million.

This study investigates small and medium enterprises in the service sector specifically among the ICT firms in Malaysia. A great majority of these firms are independently owned and operated by individuals and families.

2.2.2 The Development of SMEs in Malaysia

The contribution of the SME sector in Malaysia began to emerge in the late 1960s. It was during this period when the government first recognized the need to assist in solving the problems of these small businesses, especially those owned by the Bumiputeras. The main concern of the government then was to promote the activities of the Bumiputera communities. This assistance was expanded rapidly under the Second Malaysian Plan

(1971-1975) when the New Economic Policy (NEP) was launched. The emphasis was to include developing Bumiputera entrepreneurship, increasing production and employment, ensuring higher incomes for the largest and poorest segments of the population and achieve regional dispersion of businesses and industrial activities in order to secure better use of natural resources (Mahmood, 2001).

By the time the Third Malaysian Plan (1976-1980) was implemented, the SMEs had been acknowledged as a training ground for future entrepreneurship and as a mean for restructuring racial economic imbalance. The important roles played by the SMEs were further emphasized under the Fourth Malaysian Plan (1981-1985), especially in the training, savings, mobilization of resources, entrepreneurship development and inter-industry linkages. It was during this period that the Small Enterprise Division (SED) was established under the Ministry of Trade and Industry. Following this, a Division of Small-scale industry was also set up under the Ministry of National and Rural Development.

During the Fifth Malaysian Plan (1986-1990), the Industrial Master Plan (IMP) or the Second Outline Perspective Plan (OPP2) was launched and the manufacturing sector was reorganized from a domestic-oriented sector to an export oriented sector. By now the emphasis of the SME sector was on the expansion, improvement and modernization the objective of making it an important and viable vehicle for industrial expansion, and the creation of inter-industry linkages and support of OPP2 ended in 2005.

The Third Industrial Master Plan (IMP3) which began in 2006 reflected the high level of commitment in promoting SMEs in the country (MITI, 2005). In the Ninth Malaysian Plan (2006-2010), the continuous support given by the government on the development of SMEs included the RM2.1 billion fund for SME development compared to RM1.5 billion allocated under the Eight Malaysian Plan. A sum of RM463 million was allotted for enhancing technology content and knowledge, venture capital financing for start-up companies, funding for priority segments and new growth areas such as ICT and biotechnology services industry, and specific programs to enhance entrepreneurial and technical capabilities. A further RM927.5 million was allocated for industrial sites, while RM833 million was sanctioned for business premises and RM1.5 billion was endorsed for Techno-Fund (MITI, 2005). This commitment showed the government's recognition that the SMEs are a major contributor to the country's economic development and certainly would assist the country to face increasing challenges.

2.2.3 The Development and Problems of SMEs in the ICT Sector

The enormous potential contribution of information and communication technology (ICT) in enhancing competitiveness has prompted the government to formulate policies and programs aimed at stimulating the growth of the ICT industry and at promoting the utilization of ICT in economic and social activities (Mohd Amin, 2001). ICT is also a vital component of the infrastructural support needed for the development of the nation's economy.

Although the formal planning to promote the use of ICT and to stimulate the growth of the ICT industry began in mid-1980s (Raman & Yap, 1996), the government only launched this formally with the creation of the National Information Technology Council (NITC) in 1994. A National ICT Agenda introduced in 1996 articulated the strategies and actions to achieve the NITC's objectives (Mohd. Amin, 2001). The government had also provided substantial investments in the development of state-of-the-art infrastructure and created the institutional framework to implement policies and programs aimed at stimulating the growth of the ICT industry. One of the earliest strategic initiatives was the development of the Multimedia Super Corridor (MSC). The MSC is an initiative designed to help Malaysia leapfrog into an information and knowledge based economy by the year 2020. A number of incentives, both financial and non-financial, were provided to attract world-class foreign firms to participate in the development of the MSC. Malaysia has since grown into a thriving dynamic ICT hub, hosting thousands of multinationals, foreign-owned and home-grown Malaysian ICT companies. The government also created the Multimedia Development Corporation (MDeC) to lead in the development and management of the MSC. As a result, the ICT industry has now emerged as a strong contributor to employment and economic growth. In fact in 2006, the ICT industry contributed to 5.7 percent of the Gross Domestic Product (Frost & Sullivan, 2007).

Besides the financial and non-financial incentives given to both Malaysian and foreign firms, the government also provided additional financial support to enhance the competitiveness of Malaysian SMEs. The financial support programs were in the form of

grants for research and design (R&D) and venture capital. Grants were also provided to promote the utilization of ICT for economic and social development. The policy of MSC is to catalyze and nurture local companies and to groom SMEs to become global players by forging successful partnership between Malaysian and international companies.

SMEs are of growing importance to technological innovation (Acs & Audretch, 1990). Technological innovation is a critical element in the competitiveness of a firm, and innovativeness is where a firm innovates and competes in the market place. Innovation is a key feature of the ICT industry (Djellal & Gallouj, 1999). It is imperative that the SMEs in the ICT sector will grow in importance, and perhaps may replace the manufacturing sector as the engine of economic growth as Malaysia moves towards a knowledge-based developed nation status. Information on the innovative behaviors of the SMEs would provide valuable input in the formulation of policies and programs in the ICT industry (Djellal & Gallouj, 1999). Since no such study has been conducted on the ICT sector, an investigation of the SME in this sector would provide insight on ways to enhance SME competitiveness and improve performance. Business performance has also become an important aspect to determine whether a firm is successful or not (Dess & Robinson, 1984).

But then again, several of problems of SMEs' ICT have been highlighted. Headd (2003) claim that nine out of 10 United States small businesses fail in the first 3 years. In Malaysia, only 10% of SMEs startup survived beyond the first 10 year mark (Raduan, Naresh, & Lim, 2006). According to Nusaibah (2007), it is well documented worldwide

that many high technology based business start ups, end up failing within couple of years of starting their business and the total failure of ICT SMEs in Malaysia is reported to be very high.

The failure was identified as due to weak marketing – not only poor promotion but also failure to identify and meet the SME customers' needs. Besides that many great ideas by Malaysian ICT based businesses were left unfunded (Nusaibah, 2007). Hall and Wahab (2007) investigated the influences on the survival and failure of small firms in Malaysia and their finding confirmed that the innovation of product differentiation appears to be the most important factor for firm survival.

2.2.4 Conclusion of SMEs

SMEs have the potential to be a strong growth engine for the Malaysian economy provided they are nurtured and encouraged (Bank Negara Malaysia, 2008; Normah, 2007; Zalina & Marziah, 2007). The government has developed policies and programs to upgrade the technological capabilities and enhance the competitiveness of the SMEs. The SME entrepreneurs have also been trained, nurtured and helped by the government to promote the research and development (R&D) work and focus on product development (SMIDEC, 2008 ; MDeC, 2008; Normah, 2007). But building a successful SME is not an easy task. Among the factors that contribute to a SME success include products and services that are competitively positioned, a strong business model, stable distribution

channels, component management teams, ability to read better than rivals and market support, and of course financial assistance (Zalina & Marziah, 2007).

For a SME to be successful, it needs to sell goods and services at a profit. Therefore, for a business to sustain profits and remain competitive it needs to get new customers and retain its existing customers. Customers' choices and preferences have become a major concern for small and big business organizations and meeting these customers' needs is now considered the main objectives of the SMEs. The realization of the importance of customers has eased the path towards understanding the marketing concept and market orientation. A better understanding of the market orientation and innovativeness behaviours of SMEs is necessary in formulating more effective policies and programs at promoting their marketability and innovativeness and thus enhancing their competitiveness.

2.3 MARKET ORIENTATION

Marketing orientation represents the implementation of the marketing concept. The marketing concept is an expression that businessmen appreciate the importance of the consumers in the buying and selling process (Houston, 1986). According to Kohli and Jaworski (1990), marketing concept is also the philosophical foundation of a market orientation and the authors defined market orientation as the organizational generation of market intelligence pertaining to current and future needs, dissemination of the intelligence across departments and organization-wide responsiveness to it.

In their earlier study, Kohli and Jaworski (1990) built a theory of market orientation by asking the respondents about several issues related to market orientation, the questions included the respondents' understanding of the term 'market orientation', organizational factors that either encourage or discourage its implementation and what were the possible consequences of a market orientation. The authors found that market orientation appears to provide a unifying focus for the efforts and projects of individuals and departments within the organization, thereby leading to a superior performance. Kohli and Jaworski (1990) also believed that market orientation comprises of three sets of activities; the generation, dissemination and responsiveness to market intelligence. They posited that these three components influence the endogenous variables in the same direction.

Meanwhile, Narver and Slater (1990) conducted a study on the effect of market orientation on business profitability, and their study however developed a scale to measure market orientation. The findings supported a positive relationship between market orientation and business profitability as measured by return on investment. Besides that, the study too found that the businesses with the highest degree of market orientation are associated with the highest profitability. Narver and Slater (1990) also believed that market orientation is a type of organizational culture that comprises of three main constructs or components of customer orientation, competitor orientation, and inter-functional coordination. Customer orientation is about an intimate understanding of the firm's customers and a commitment to continuously creating superior value for them. A customer orientation requires firms to collect information about, and obtain understanding of, a customer's entire value chain (Day & Wensley, 1988). A customer

orientation advocates a continuous, proactive disposition toward meeting customers' needs. Thus, a customer orientation in itself has a positive influence on firm performance (Deshpande, Farley & Webster, 1993; Lukas & Ferrell, 2000). Competitor orientation refers to a timely and accurate understanding of a firm's current and future competitors. Competitor oriented firms directly measure themselves against target competitors (Day & Wensley, 1988), and seek to identify their own strengths and weaknesses (Han, Kim & Srivastava, 1998). Effective benchmarking and imitation can be effective deployment of resources (Zott, 2003; Vorhies & Morgan, 2005). Therefore, competitor orientation also has a positive influence on firm performance. Inter-functional coordination refers to a coordination of all the firm's resources to create super value for the target customers. Narver and Slater (1990) argued that in order to be market oriented, it is important for all departments in the firm to communicate information gathered from customers and competitors, and to coordinate their efforts in order to create superior value for customers. The firm's structure, cultural characteristics and procedural styles have been considered a hotbed for innovation. Participative decision-making and organizational learning have been found to be significantly related to innovativeness (Hurley & Hult, 1998). A collaborative culture encourages the development of organizational learning and improves competitive performance (Lopez, Peon & Ordas, 2004). Firms with strong inter-functional coordination would have greater ability to create, retain, and transfer knowledge (Argote, McEvily & Reagans, 2003). Thus, a smooth and tight inter-functional coordination in and of itself has a positive effect on firm performance.

Another researcher, Ruekert (1992), examined the relationships between the degree of market orientation from an organizational strategy perspective and organizational processes, individual attitudes and long run financial performance. Results of the study provided support on earlier studies that market orientation is positively related to a broader organizational process, individual attitudes towards their job and business unit performance over the long run. However, Diamantopoulos and Hart (1993) who replicated the earlier study of Kohli and Jaworski (1990) did not find unequivocal support for a contention that a positive link exists between market orientation and business performance.

In another study by Jaworski and Kohli (1993), the authors discussed market orientation in terms of its antecedents and consequences. The authors developed a comprehensive framework of market orientation which included three sets of antecedents: strong commitment of top management; low interdepartmental conflict allowing more intelligence dissemination; and less formal and centralized organizational structure and two sets of consequences: increased firm performance and increased organizational commitment of employees. The results of the study indicated that efforts invested to improve a firm's market orientation do pay off in terms of better performance. Kohli, Jaworski and Kumar (1993) extended the literature on market orientation by developing a MARKOR scale with sound psychometric properties. This MARKOR scale assesses the degree to which a firm engages in multi-departmental market intelligence generation activities, disseminates this intelligence vertically and horizontally through both formal and informal channels, and develops and implements marketing programs on the basis of

the intelligence generated. The MARKOR scale instrument periodically review the effect of changes in the business environment, such as technology changes or regulation changes on customer, hence will measure the market orientation and improve the existing link between market orientation and business performance.

In their study, Slater and Narver (1994a) found that components of market orientation is not only positively related to sales growth but new product success as well. The study gave little support for the proposition that competitive environment has an effect on the strength of the market and performance relationship, and that businesses that are more market oriented are best positioned for success under any environmental conditions. In their follow up study, Slater and Narver (1994b) explained that the heart of a market orientation is a firm's customer focus. According to the authors, the firm not only need to understand the dynamics of their current customers but also their future target buyers. The authors also stressed the need to understand immediate as well as downstream customer needs.

Deng and Dart (1994) developed a scale to measure market orientation in an attempt to resolve the inconsistency that exists within the literature concerning the definition of 'marketing concept' and 'market orientation'. They successfully developed a scale that contained 25 items and displayed sound psychometric construct. The Deng and Dart scale were developed based on the firm's structured programme that obtained feedback, complain or comments from its customers as these feedback helps the firm to understand

better about its customers and therefore will improve the market orientation and business performance relationship.

Further to that, Day (1994) discussed a managerial approach in order to understand how market orientation can be achieved and sustained. The author argued that superior business performance is the result of heightened skills directed towards understanding and satisfying customers. He also stated that two capabilities were necessary to enhance the firm's market orientation: first is a market sensing capability that determines how well the firm is equipped to continuously sense changes in its market and to anticipate the responses to market actions; second is a customer-linking capability that comprises the skills, abilities, and processes needed to achieve collaborative customer relationships so individual customer needs are quickly apparent to all functions and well-defined procedures are in place for responding to them. Businesses must have superior skills related to the understanding, satisfying, and retaining of customers or they will never achieve their full potential.

A study by Siguaw, Brown and Widing (1994) investigated the impact of a market orientation on the attitudes and behaviours of sales people. Empirical results indicated that market orientation did influence the attitudes and customer orientation of the salesperson. The authors found that the firm that has a high market orientation will have a sales force that practices a greater customer orientation, reduces job conflict, and expresses greater job satisfaction and organizational commitment. Pitt, Caruana and Berton (1996) empirically investigated the relationship between market orientation and

performance in the UK and Malta. Subjective perceptual measures of organization performance were used. The results showed that market orientation had a positive effect on performance in both countries.

In another related study, Pelham and Wilson (1996) examined the impact of market orientation on small business performance in an integrated model using longitudinal data. Performance measures consisted of relative product quality, new product success, growth/share, and profitability. The authors found that market orientation was significantly and positively related to product quality, new product success, and profitability, but not to growth/share.

Selnes, Jaworski and Kohli (1996) proposed a conceptual framework consisting of a theoretical model of market orientation, organizational antecedents, and consequences embedded in a context of two cross-national factors, political-economy and national culture. They empirically studied market orientation in the US and Scandinavia. The results showed that market orientation had a positive effect on all performance variables except market share. Evidence also suggests that market orientation and overall performance was stronger in a market driven economy like the US than in a more regulated markets of the Scandinavia.

Pelham's (1997) empirical study of market orientation-performance relationship consisted of three dimensions for performance: profitability/cash flow; market position/growth; and firm effectiveness. Moderating variables included product

differentiation whereby the marketing variables consisted of competitive intensity, market growth, customer differentiation, low-cost strategy, growth differentiation strategy, technical dynamism, and market dynamism. The results showed that market orientation-performance relationship is strongest in differentiated markets characterized by low levels of customer differentiation and high levels of product differentiation. The authors too found that market orientation significantly influence firm's effectiveness when the relationship was moderated by high customer differentiation. Finally the authors concluded that the industry environment has little impact on the strength of the market orientation-performance relationship.

A study on the relationship between market orientation and performance in health care industry was done by Kumar, Subramaniam and Yauger (1998) The authors used a market orientation scale which was based on a 25 items scale revised from Narver and Slater (1990). The industry performance criteria was accessed included growth in revenue, return on capital, success of new services or facilities, success in retaining patients, and success in controlling expenses. The results found that market orientation was positively related to all of the performance criteria. Another study examining the relationship between market orientation and performance was carried out by Ngai and Ellis (1998) in Hong Kong. In their study, the performance measures included sales growth/market share growth and profitability. The authors found a positive relationship between market orientation and performance in Hong Kong. Following these two studies, Han, Kim and Srivastava (1998) proposed a framework to test the postulated 'market orientation-innovation-performance' chain. The effect of market orientation on

performance was tested with Narver and Slater's (1990) market orientation framework. The study found that market orientation was positive but not significant on performance. However, when innovations were accounted for, market orientation was a significant contributor to superior performance. The study also found that market orientation was significant to both technical and administrative innovations, which in turn helped corporate performance.

A study to investigate the relationship between market orientation and financial performance among organizations in South Africa by Loubser (2000) concluded that only one performance measurement; return on equity, was significantly correlated with market orientation. The author used data collected from 449 unlisted and 51 listed organizations in South Africa to derive to this conclusion. Seven performance indicators used in the study: growth in market capitalization, growth in total assets, return on equity, return on assets, growth in sale and price earning-organization versus sector. The results of the study besides showing there is a significant correlation between return on equity and market performance, also showed that businesses behavior was significantly correlated with two performance measurements – growth in total assets and return on equity. However, external variables, such as technology change, price sensitivity, market growth, competitive intensity and others were not significantly correlated with market orientation. The researcher defined market orientation as business culture that focused on creating mutually rewarding relationship between customers and the organization based on the interest of stakeholders, organizational competitive advantage and core competencies.

Matsuno and Mentzer (2000) studied the effects of strategy type as a moderator on the relationship between market orientation and performance. Their study used four strategy types as defined by Miles and Snow (1978) consisting of defenders, prospectors, analyzers and reactors. Performance measures were return on investment (ROI), market share growth, relative sales growth and new product sales as a percentage of total sales. The study's results showed that the strength of relationship between market orientation and performance is greater for prospectors in market share growth, relative sales growth, and new product sales, and for defenders in ROI. A study by Sin and Tse (2000) investigated the relationship between market orientation and performance in China whereby the Chinese economy was regulated under the command and direction of their government. Results confirmed that market orientation was positively and significantly related to sales growth, customer retention and overall performance. Following the study by Sin and Tse (2000) another study related to China was carried out by Liu, Luo and Shi (2003) who also found a positive relationship between market orientation and organizational performance in China. However, a study by Sin, Tse, Yau, Chow and Lee (2003) in Hong Kong found that market orientation has a greater effect on business performance in a market-driven economy than in a regulated and government controlled ones like China.

Wren, Souder and Berkowitz (2000) explored the relationship of market orientation dimensions and new product development of high technology companies. Their research results indicated that two dimensions of market orientation-market intelligence and customer orientation-were found to be critical skills in new product success. This study

was supported by Cravens and Guilding (2000) who evaluated the relationship between market orientation and brand valuation and found that brand valuation creates a financial value for all of the intangible elements of a brand. The authors concluded that companies with strong brands and which pursue a market orientation were more likely to use brand valuation.

A study by Schlegelmilch and Ram (2000) examined market orientation from a strategic perspective in terms of how it was shaped by corporate attitudes and strategic intent. They found that strategic market orientation was positively related to long term future priorities, aggressive marketing objectives, close coordination between marketing and other functional areas, higher intensity of competition, and higher rates of technological change. Besides that, Pleshko and Heiens (2000) analyzed the effects of customer and competitor focus and the associated impact on market share in the financial services industry. Results indicated that increases in competitor focus lead to increases in performance as measured by market share performance. However, the study also found that increases in customer focus did not lead to increases in performance.

Grewal and Tansuhaj (2001) did a study on the nature of the influences of market orientation and strategies flexibility on firm performance after a economic crisis has occurred. The study was conducted on SMEs in Thailand and the findings indicated that market orientation had an adverse effect on firm performance after a crisis and that this effect was moderated by demand and technological uncertainty, and was enhanced by competitive intensity. In contrast to that, strategies flexibility had a positive influences

on firm performance after a crisis, which was enhanced by competitive intensity and moderated by demand and technological uncertainty. In conclusion, it appeared that market orientation and strategic flexibility complemented each other in their efficacy to help firms manage varying environmental conditions.

Another similar study was carried out by Sartika (2001) who investigated the market orientation of small and medium scale industry in Jakarta. The study covered industries involving food, garments, leathers, wood and rattan. The results of the study indicated a significant relationship between the implementation of market orientation and return of sales. The author found that the entrepreneurial behaviour of the owner is motivated by hard working creating ideas taking risk, and willingness to sacrifice and this is enhanced by the educational level and entrepreneur behaviourial that influence the implementation of the market orientation. The research also discovered that return on sales and sales performance was positively significant to the implementation of market orientation. And lastly the data collected showed that correlation exists between market orientation and sales growth. Soehadi, Hart and Tagg (2001) investigated the market orientation in the Indonesian retail industry and their findings indicated that there was a positive impact of market orientation effect on both supplier partnership and retail performance.

A study by Subramaniam and Gopalakrisna (2001) in India found a strong positive relationship among market orientation and growth in overall revenue, return on capital, success of new products and services, ability to retain customers, and success in controlling operating expenses. They also found that competitive hostility, supplier's

power, and market turbulence did not moderate the market orientation and performance relationship. Interestingly Grewal and Tansuhaj's (2001) study found that market orientation had negative effect on firm performance. This relationship was moderated by demand and technological uncertainty, and enhanced by competitive intensity. In contrast, strategic flexibility has a positive influence on firm performance which was enhanced by competitive industry, and moderated by demand and technological uncertainty. Lado and Maydeu-Olivares (2001) investigated the influence of competitive environments on the uses of market orientation in insurance firms in the EU and the US, and the effects of market orientation on innovation. The results indicated that there is a positive impact of overall market orientation on the firms' innovation degree and innovation performance in both the EU and US markets.

Vazquez, Santos and Alvarez (2001) investigated market orientation, innovation and competitive strategies in industrial firms in Spain. The researchers examined the psychometric properties of the newly developed market orientation scale as well as the relationship between market orientation and the following variables: firms' commitment to the innovation activities, effective innovation rates, degree of innovativeness of the new products developed, firms' competitive strategy and companies performance. Their findings indicated that market orientation had a direct and positively significant effect on a firms innovativeness but there is no direct and no significant effect of market orientation on the company's innovation rate and performance. Furthermore market orientation was found to have an indirect effect on firms' innovation rate and performance.

A study in Canada by Gainer and Pandanyi (2002) examined the relationship between market orientation and organization performance from the perspective of nonprofit art organizations. Three indicators were used to measure organization performance: customer satisfaction, peer reputation and resources attraction. The findings of the empirical study confirmed market orientation culture was positively significant and positively related to growth in resources, customer satisfaction and growth in reputation among peers.

Rose and Shoham (2002) studied the relationship between market orientation and export performance in Israel. The four dimensions of export performance were sales, profitability, change in sales, and change in profits. The authors found that except export sales, export performances were positively related to overall market orientation, intelligence generation and responsiveness, but not to intelligence dissemination. To further discuss on this issue, a research by Cadogan, Diamantopoulos and Siguaw (2002) found that export-oriented activities influenced export performance, measured as satisfaction with export sales, export profits, export market share, and rate of new market entry. Their research results however, did not show the moderating effects of environmental turbulence on such a relationship. Meanwhile, Matear, Osborne, Garrett and Gray (2002) studied the inter-relationship between market orientation and innovation in order to examine alternative mechanisms through which market orientation contributes to service firm performance. The authors found that market orientation contributed to

performance through a dual mechanism in that it contributes both directly and through innovation, with innovation mediating the contribution.

A study by Helfert, Ritter and Walter (2002) argued that the market orientation perspectives should not only focus on conceptual point of view but that a relational perspective is also needed. The authors' argument follows the logic that the goal of marketing is to develop and maintain long-term relationships. Results from a study by Perry and Shao (2002) indicated that market orientation did not directly affect performance, nor did the interaction of market orientation and perceptions of new competitors. However, perceptions of traditional competitors directly affected performance and interacted with market orientation to affect performance.

Matsuno, Mentzer and Ozsomer (2002) investigated how market orientation and entrepreneurial proclivity affect business performance. The authors found that entrepreneurial proclivity has not only a positive and direct relationship on market orientation but also an indirect and positive effect on market orientation through the reduction of departmentalization. The findings also suggested that entrepreneurial proclivity's performance influence is positive when mediated by market orientation but negative or non-significant when not mediated by market orientation.

A study in USA by Choi (2002) investigated the relation of a market orientation and innovation on small business firm in small towns, with a community of 20,000, and the result indicated that business innovation significantly influenced the gross profit of

business firm of a small town. Overall the business success is perceived only when customer market orientation made the most significant influence over the small business.

Noble and Sinha (2002) explored the relative performance effects of various dimensions of market orientation using a longitudinal approach based on letters to shareholders in corporate annual reports; the relative effects of alternative strategies orientation that reflected different managerial priorities for the firm; and the mediating effects of organizational learning and innovativeness on the orientation performance relationship. Annual reports of companies were analyzed using cognitive mapping technique, which converted texts of the reports into quantitative data by coding each sentence of the letters for the firms and years studied. The results showed that firms possessing higher levels of competitor orientation, national brand focus and selling orientation exhibited superior performance.

A study by Tay and Morgan (2002) investigated and tested the theory of market orientation in the context of chartered surveying industry in the UK. The empirical study indicated that market orientation had a positive impact on a firm's business and marketing performance. Further, it was found that firms with more risk tolerant senior managers and more formalized and specialized marketing organization structure had higher levels of market orientation. The study also conforms that the relationship between market orientation and business performance is robust across different environments.

Delbaere, Sivaramakrishnan and Brunning (2003) tested the moderating and mediating effects of knowledge management on market orientation and business performance link.

The performance indicators used were customer loyalty and financial performance. The findings of the study suggested that market orientation did not have a direct impact on financial performance of companies and that having a market orientation generally resulted in greater inclination to engage in knowledge lead to higher customer loyalty, which in turn lead to higher financial returns.

A study by Pulendran, Speed and Widing (2003) examined the relationships between marketing planning, market orientation and business performance and they found that the quality of marketing planning is associated with a higher level of market orientation. However, the impact of marketing planning quality on business performance is indirect rather than direct. Besides that, Lai (2003) investigated the impact of market orientation in quality oriented organizations and its relationship to performance and the results indicated that market orientation is positively associated with quality management implementation and a significant predictor of business performance in quality oriented organizations. Consequently, firms with a market orientation are likely to have favorable quality management implementation and positive performance results.

Darroch and McNaughton (2003) extended the market orientation literature to knowledge management. The authors found that firms with a knowledge management orientation were more likely to develop a broad spectrum of innovations and perform better across a range of financial performance measures as compared to firms without such a capability. Agarwal, Erramilli and Dev (2003) examined the relationship between market orientation and performance with data from 201 international hotels, and found that market

orientation is positively associated with both judgmental measures of performance-service quality, customer satisfaction, and employee satisfaction, and objective measures of performance-occupancy rate, gross operating profit and market share.

A study by Singh (2003) ascertained the extent to which Indian industrial firms mainly from New Delhi, Bombay and Calcutta, had adopted the concept of market orientation, as a result of economic reform, by examining the link between the market orientation and business performance. The potential effects of competitive intensity and market dynamism were also examined. The findings of the study suggested that there was a positive change in the market orientation and that the market orientation was significantly and positively related to return on investment and customer retention. Further analysis indicated that for a high level of competitive intensity and a low level of market dynamism, the relationship between the market orientation and performance was stronger.

Im and Workman (2004) examined market orientation, creativity and new product performance in high-tech firms. The authors investigated the mediating role of new products and marketing program creativity between market orientation and new product success. Results showed that new products and marketing program creativity mediates the relationship between market orientation and new product success. Gounavis, Avlonitis and Papastathopoulou (2004) investigated how a firm's behaviour is modified when the principles of market orientation are adopted. The authors findings states that adopting a market orientation does influence certain business practices such as the

planning process, strategy formation, strategy implementation and control. A study by Lings and Greenley (2005) conceptualized a new multidimensional construct labeled as internal market orientation (IMO). The dimensions are customer satisfaction, relative competitive position, staff compliance, staff retention and staff attitudes. The authors' research indicated that this new IMO scale possesses sufficiently strong psychometric properties.

Sin, Tse, Heung and Yim (2005), investigated the relationship between market orientation and business performance in the hotel industry. This study used the market orientation construct and related scale developed by Narver and Slater (1990). The instrument consisted of three subscales: customer orientation, competitor orientation and inter-functional coordination. The study indicated a positive and significant relationship between market orientation and financial performance.

Kara, Spillan and DeShields (2005) investigated the relationship between market orientation and firm performance on small and medium-sized service retailers using the MARKOR scale developed by Jaworski and Kohli (1990). The sample for this study was business owners and managers from 153 small and mid-sized firms in three states: Maryland, Pennsylvania and New York. The results indicated that the MARKOR scale provided a good measure of market orientation for this study. The Cronbach alpha reliabilities for intelligence generation, dissemination, and responsiveness were .69, .74, and .83, respectively, indicating a good level of reliability for dissemination, and responsiveness and marginal reliability for intelligence generation. The statistical

analysis of the results indicated a strong linkage between market orientation and firm performance.

A study by Kenneth, Green, Brown and Willis (2005), investigated on the market orientation in relation to structure and performance and found that the proposed structure dimensions (formalization, specialization, decentralization and integration) once tested, resulted with only formalization dimension was found to be a positive predictor of market orientation. The study also confirmed that market orientation was found to be a positive predictor of both financial and marketing performance.

A study conducted in Hong Kong by Chien (2006) who investigated the measurement skill of knowledge management strategy implementation and to test the knowledge management model in cooperating a market orientation capabilities and organizational performance in the hotel industry. The study supported that there is a significant relationship from market orientation to knowledge management and from market orientation to hotel performance. However, market orientation was found not to have an indirect effect on hotel performance. Knowledge management did not have a direct effect on hotel performance. The mediating role of knowledge management was not applicable in all final full structure models.

Low, Chapman and Sloan (2007) explored the nature of interactions between innovation and market orientation. Their study aimed to identify key components of market orientation that are antecedent factors of the innovation performance of the firm. The

findings revealed that innovation was positively correlated to market orientation, and both innovation and market orientation were positively correlated to firm performance and the degree of change in the firm's competitive environment. Pinho (2007) examined the synergistic relationships between total quality management (TQM), performance, consumer orientation and innovation. The findings revealed that most of TQM components have an impact on SME performance and consumer orientation. Results also confirmed both the impact of innovation on performance as well as that of consumer orientation on innovation.

A study by Ruokonen and Nummela (2007) analyzed the role of market orientation in the internationalization of small software firms. Market orientation in the internationalization of knowledge intensive firms consists of three elements namely; customer orientation, competitor orientation and value-network coordination. Results indicated that achieving a successful balance between these elements considerably smoothen the internationalization process.

A study by Gladson (2008) investigated the strategies of market orientation and business performance in the food and beverages industry in Nigeria. The finding from the study confirmed that there is not any strong association between market orientation and business performance in the Nigerian context using food and beverages organizations. The reasons underlying the weak relationship between the market orientation and business performance of food and beverages organizations include government policies, new product development, diversification innovation and devaluation of the Nigerian

currency. The finding also found that the one important contribution of this study is that market orientation leads to business performance through some moderating variables.

Gokus (2008) investigated how organization strategies are implemented to produce enhanced organizational performance by utilizing market oriented culture and organizational structure. The researcher found that positive significant relationship of ideal configuration of market orientation, customer orientation, competitors orientation and inter-functional coordination that led to superior performance. On top of that, the study also found that environment turbulent such as strategy on business used and product are not mediated between relation market orientation and business performance.

Lin, Peng and Kao (2008) formulated a structural equation model to examine the relationship between learning, market orientation, entrepreneurial orientation and innovativeness function as key success factors in technology intensive firms. The findings revealed that learning orientation plays a full mediating role in the relationship between market orientation and innovativeness. However, the organizational structure does not play a moderating role in the relationship between innovativeness and business performance.

An investigation by Lonial, Tarim, Tatoglu, Zaim and Zaim (2008) on the critical factors of market orientation and the measurement of its effect on new service department (NSD) and financial performance of hospital industry in Turkey resulted that while market orientation has a strong and positive effect on NSD performance, it has no

significant effect on financial performance. However, a strong and positive relationship was noted between NSD-performance and financial performance. Besides that, the findings also provided evidence for the mediating role of NSD performance in the relationship between market orientation and financial performance.

Zhang (2008) researched the integration of market and entrepreneur orientations in manufacturing company in Canada whereby the finding confirmed that the market orientation leads to improved customer satisfaction and loyalty in which ultimately leads to a positive financial performance. The findings evidently indicated that entrepreneur orientation is not significant to customer satisfaction and loyalty but instead entrepreneur orientation has a direct relationship to financial performance.

A study by Masroor (2009) investigated the combined effect of market orientation and owner manager innovativeness on innovation and business performance of small and medium sized manufacturing firms in Pakistan. The finding from the study noted that the empirical result of owner / manager innovativeness permeates all variable in the model and has a positive influence to market innovation and firm performance. Moreover the study also confirmed that innovativeness dimension of entrepreneurs orientation, market orientation and innovation, have a linear relationship to SME performance.

2.4 INNOVATION

SMEs in today's environment are challenged by rapid change, shortened product and industry life cycles and rapidly changing technology. It appears that innovation can be

one of the mechanisms for firm survival and success (Porter, 1996). Schumpeter (1934) was one of the first economists who stressed innovation as the engine of economic growth. He described innovation in terms of introducing new products or services, new processes or methods of production to create or manufacture a good or service, opening new markets or new sources of supply, or reorganizing industries.

Caruana, Morris and Vella (1998) defined innovation as the development of novel or unique products, services, or processes and their definition stems from Rogers' (1995) definition on innovation as an idea or object that is perceived as new by an individual or an agency. The perceived newness of the new idea from the individual's point of view determines his or her reaction to it. If the idea seems new to the individual, it is then an innovation (Robertson & Yu, 2001).

Innovation is also defined as the generation, acceptance and implementation of new ideas, processes, products or services. The innovation process includes the acquisition, dissemination, and use of new knowledge (Calantone, Cavusgil & Zhao, 2002), and successful implementation of creative ideas within an organization (Amabile, Conti, Coon, Lazenby & Herron, 1996). Hauser, Tellis and Griffin (2006) argue that innovation is a focus on research and development, technology oriented and new product development. An innovation consists of certain technical knowledge about how the things can be done better than existing state of the art. The innovativeness capability of the firms is important because it presents the opportunities for these firms in terms of

growth and expansion into new areas as well as allowing them to gain competitive advantage (Howells & Teether, 2006; Tyler, 2001).

Innovation may also be the most important strategy of the firms since innovation contributes to business performance (Hamel, 2000; Lumpkin & Dess, 1996). Empirical evidence exists showing a relationship between high innovation and superior profitability (Robert, 1999). Innovation is also linked to successful firm performance for firms in both industrial and service sectors as well as to entire economics (Gupta, Macmilan & Surie, 2004; Kluge, Meffert & Stein, 2000). Effective innovations help to create a competitive advantage by creating new value for customers (Mizik & Jacobson, 2003). The capability to develop and introduce new products to the market appears to be a primary driver of a successful global strategy (Subramaniam & Venkataraman, 1999).

Atuahene-Gima (1995) studied the direct effect of market orientation on new product activities and performance. The result showed that market orientation was positively related to market performance, proficiency of product development and product advantage. The author also investigated the influence of market orientation on innovation characteristics and performance and the results indicated that market orientation had significant relationships with innovation characteristics such as innovation-marketing fit, product advantage, and inter-functional teamwork but not with product newness or innovation-technology fit. The results however did not support the hypothesis that market orientation has a stronger impact on service innovation performance as compared to product innovation performance.

Hurley and Hult (1998) evaluated the integrated market orientation-organizational model to better understand how firms adapt to their environment and develop competitive advantage. Their findings showed a strong positive relationship between the innovativeness of a group's culture and the capacity for that group to innovate. This in turn, promotes the development of a higher number of innovations relative to competitors.

Han, Kim, and Srivastava (1998) examined the link between market orientation and performance in terms of innovation. The study tested how the three dimensions of market orientation (customer orientation, competitor orientation and inter-functional coordination) affect organizational innovativeness. The findings suggested that market orientation did not directly lead to superior firm performance but it directly lead to innovation, which is in turn related to performance. The findings also indicated that innovation plays a mediating role in the relationship between market orientation and performance.

Besides that, Lukas and Ferrell (2000) investigated the effect of market orientation components (customer orientation, competitor orientation, inter-functional coordination), on product innovation and their findings indicated that product innovation varied with market orientation. The authors mentioned that specifically, customer orientation increases the introduction of new-to-the-world product and reduces the launching of me-too products. Competitor orientation increases the introduction of me-too products and reduces the launching of line extensions and new-to-the-world products. Inter-functional

coordination increases the launching of line extensions and reduces the introduction of me-too products.

Lado and Maydeu-Olivares (2001) explored the link between market orientation and innovation in the European Union (EU) and United States (US) insurance markets. Results showed that market orientation is significantly related to innovation degree and innovation performance in both the EU and US markets. The implication of this finding is that the magnitude and the effectiveness of the innovation activities of a firm can be enhanced through the adoption of market orientation principles. Vazquez, Santos and Alvarez (2001) examined the relationship between innovation and market orientation and performance. Their study supported the findings of Hurley and Hult (1998) that most market oriented firms, in addition to having a greater willingness to innovate, commercialized a higher number of innovations than their competitors.

Atuahene-Gima and Ko (2001) examined the impact of the alignment between market and entrepreneurial orientations on product innovation activity and performance. Results indicated that the interaction between market and entrepreneurial orientations plays an important role in fostering product innovation and its outcomes. The study also found that market oriented firms have higher new product performance and were more effective in the product innovation process.

Langerak, Hultink and Robben (2004) investigated the structural relationships among market orientation, new product advantage, proficiency in new product launch activities

and organizational performance. Their findings indicated that market orientation is positively related to product advantage and to the proficiency in market testing, launch budgeting, launch strategy and launch tactics. Im and Workman (2004) examined the mediating role of new product and market program creativity in the relationship between market orientation and new product success. The results supported the market orientation and new product/market program creativity-new product success model.

A study by Gonzales (2005) found that the market orientation as mediated by market turbulence, competitive intensity and technological turbulence, have an impact on the organizational performance of the new web based service industries in the United States of America. The literature supported the measurement scale of Jaworski and Kohli (1993) model framework. The finding confirmed that there is a positively significant relationship between market orientation and business performance but there was no statistically significant relationship between market orientation and organizational performance when the relationship was moderated by the environmental variable (market turbulence, competitive intensity and the technology turbulence). The study also confirmed that there is a correlation between organizational performance and each of the components of market orientation (collection, dissemination and response to market intelligence).

Yinghong (2006) investigated the market orientation and successful new product innovation in high technology industry zones in China. In detail, the study investigated how market orientation may create rigidity, known as a competency traps that reduce the

innovation performance. This study sought to enhance understanding of successful new product innovation by developing and testing a new theory framework for explaining the market orientation– product innovation relationship in the context of firms' new product development (NPD) processes. The empirical finding confirmed that the customer orientation leads to a routinization trap, in which ultimately routinization traps are positively significant with NPD creativity and NPD efficiency. Vision traps are negatively significant with NPD creativity. The technology traps and new product innovation is indirect relationship and moderated by entrepreneurial orientation and network learning. Entrepreneurial orientation but not network learning is the remedy for highly market-oriented firms to reduce technology traps.

Lin, Peng and Kao (2008) studied the innovativeness effect of market orientation and learning orientation on business performance in innovation and venture companies in the info-electronic industry in Taiwan. They found that learning orientation plays a full mediating role in the relationship between market orientation and innovativeness. Their study's results indicated that organizational structure (formalization and decentralization) do not play a moderating role in the relationship between innovativeness and business performance. However, the extent of formalization of an organizational structure negatively correlates with business performance.

2.5 PERFORMANCE

Studies on firm performance have adopted various approaches to conceptualize and measure performance. It has emerged that performance is a multi-dimensional construct that cannot be adequately reflected in a single performance item (Dess & Robinson, 1984). These arguments suggest that a composite measure of performance would reflect more accurately firm improvements as opposed to a single quantitative or accounting related performance measure. According to Haber and Reichel (2005) firm performance and success can be examined both objectively and subjectively. Objective examination usually includes comparing firm performance with hard financial measures, whereas subjective examination can be related to more personal issues.

In the small and medium sized firms, there is a common problem among the owner/managers to refuse or unwilling to provide financial information or accurate objective measures to outsiders. In addition, objective financial data on SMEs is not publicly available, and it is not possible to check the accuracy of any reported financial performance figures (Covin & Slevin, 1989). Thus, it is better to use subjective perceptual measure as an alternative. In this study, the term 'firm performance' refers to self-reported measures on the perceptions of owner/managers in terms of improvements in market share, profitability, sales growth, return on performance and overall performance. Subjective, self-reported performance measures have been found to be highly correlated with objective measures of firm performance (Robinson & Pearce, 1988; Dess & Robinson, 1984). Several studies have employed the subjective

assessment for business performance, and they have shown that the method can yield useful insights (Tan, Lyman & Wisner, 2002; Curkovic, Veickery & Droge, 2000). For this study the measurement of business performance was based on non financial measure which addresses overall perceived success, profitability, sales growth and return of assets.

2.6 MARKET ORIENTATION AND INNOVATION

Market orientation involves being responsive to changing customer needs with innovative marketing programs and strategies can be viewed as a continuous behaviour (Bretani, 2001; Choi, 1999). Singh (2002) suggests that organization headed by managers who have extensive formal education and young are more likely to pursue risky and innovative strategies. These findings suggest that the market orientation of a SME may be the function of the innovation level of managers (Kohli & Jaworski, 1990). According to Kohli and Jaworski (1990) and Choi (1999) market orientation (which components are customer orientation, competitor orientation and inter-functional coordination) emphasizes on customers and tends to implement greater innovation in product and services in order to improved customer benefits. Though evidence has been provided regarding the effect of market orientation on innovation in various business firms including manufacturing and services firms (Lukas & Ferrel, 2000; Harryson, 1997; Atuahence-Gima, 1996), less attention has been paid to the impact of market orientation especially the dimensions of competitor orientation, customer orientation and inter-

functional coordination on innovation in the SMEs. Based on these facts the following hypotheses are formulated.

Hypothesis 1a: There is a significant positive relationship between competitor orientation and innovation in the SMEs.

Hypothesis 1b: There is a significant positive relationship between customer orientation and innovation in the SMEs.

Hypothesis 1c: There is a significant positive relationship between inter-functional coordination and innovation in the SMEs

2.7 MARKET ORIENTATION AND BUSINESS PERFORMANCE

Empirical studies have been conducted to examine the relationship between market orientation and organizational performance (Han, Kim & Srivastava, 1998; Greenley, 1995; Slater & Narver, 1994; Jaworski & Kohli, 1993; Deshpande, Farley & Webster, 1993; Narver & Slater, 1990). However, findings provided mixed support for the proposition that the business performance is positively related to its market orientation. Narver and Slater (1990), and Slater and Narver (1994) found a positive association between market orientation and performance. Jaworski and Kohli (1993) studied the relationships between market orientation and two measures of performance, objective performance and judgmental performance. They found that market orientation is positively associated with judgmental performance, but it is not associated with objective

measures of performance. This finding is in direct contrast to those of Narver and Slater (1990). Deshpande et al. (1993) studied the impact of customer orientation and organizational culture on performance of Japanese firms. This study also did not find evidence to support the assumed positive relationship between customer orientation and performance. Greenley (1995) who replicated the Slater and Narver (1994) study did not find direct relationships between market orientation and various measures of objective performance. In contrast, Agarwal, Erramilli and Dev (2003) found positive association of market orientation with both judgmental and objective measures of performances. Pelham (2000) also found positive associations between market orientation and performances in small and medium sized firms. He further argued that market orientation provided the small firms with more competitive advantages when compared to large firms. In addition to these studies, Narver and Slater's (1990) constructs of market orientation, namely customer orientation, competitor orientation and inter-functional coordination, were also the focus of some researchers. Deshpande, Farley and Webster (1993), and Lukas and Farrell (2000) found a positive influence of customer orientation on firm performance, while Vorhies and Morgan (2005) and Zott (2003) found competitor orientation can be an effective deployment of resources, and thus have a positive influence on firm performance. Firms with a smooth and tight inter-functional coordination were also found to have positive effect on performance (Argote, McEvily & Reagans, 2003). Therefore to determine further these relationships in the context of SMEs, the following hypotheses are formulated.

Hypothesis 2a: There is a significant positive relationship between competitor orientation and business performance of the SMEs.

Hypothesis 2b: There is a significant positive relationship between customer orientation and business performance of the SMEs.

Hypothesis 2c: There is a significant positive relationship between inter-functional coordination and business performance of the SMEs.

2.8 INNOVATION AND BUSINESS PERFORMANCE

Innovation may be the most important of a firm's strategy since it contributes to business performance (Hamel, 2000; Lumpkin & Dess, 1996). Empirical evidence exists showing a relationship between high innovation and superior profitability (Robert, 1999). Innovation is also linked to successful performance for firms in both the industrial and service sectors (Gupta, Macmillan & Surie, 2004; Kluge, Meffert & Stein, 2000). Innovation is also important to SMEs, and a critical element for these firms to improve and maintain their competitiveness (Rothwell & Dogson, 1991). Acs and Audretch (1990) found that on average the innovation rate of small firms is larger than that of large firms. To compete with larger and more established firms, SMEs may need unique and innovative ideas and products. These firms should also rely on a steady flow of innovative products for survival and competition in today's fast changing and aggressive markets (Deeds, Decarolis & Coombs, 2000). The interest shown by past researchers on innovation among SMEs is indicative of the important contribution that innovative SMEs

could make to organizational performances. Thus the following hypothesis is formulated:

Hypothesis 3: There is a significant positive relationship between innovation and business performance of the SMEs.

2.9 MARKET ORIENTATION, INNOVATION AND BUSINESS PERFORMANCE

Han, Kim and Srivastava (1998) questioned the weak, mixed, or insignificant findings pertaining to the hypothesized positive association between the components of market orientation and performance. The authors proposed a framework in which the relationship between components of market orientation and performance is mediated through innovation. Their findings suggested that market orientation did not directly lead to superior firm performance but it directly lead to innovation, which in turn related to performance. Narver and Slater (1990) also introduced innovation as a core capability and as a catalyst mediating the market orientation and performance relationship. Hurley and Hurt (1998) argued that the construct of innovation has been absent in many market orientation models, and they suggest that the market orientation should include innovation as it is pivotal mechanism of capability development. Innovation is the fundamental internal capability that provides a firm with a competitive advantage resulting from higher levels of performance. Im and Workman (2004) also supported the mediating role of innovativeness in the relationship between market orientation and

performance. Therefore, to further understand the mediating role of innovation in the market orientation especially those of the three dimensions of competitor orientation, customer orientation, and inter-functional coordination and performance relationships, the following hypotheses are formulated:

Hypothesis 4a: Innovation mediates the relationship between competitor orientation and business performance of the SMEs.

Hypothesis 4b: Innovation mediates the relationship between customer orientation and business performance of the SMEs.

Hypothesis 4c: Innovation mediates the relationship between inter-functional coordination and business performance of the SMEs.

2.10 THEORETICAL FRAMEWORK

After taking into consideration the research questions and objectives of this study, hypotheses were formulated and the following research model is developed. The model aims at explaining market orientation and innovation and their impact on business performance of the SMEs. In the model, market orientation as conceived by Narver and Slater (1990) is adapted to analyse the relationships among market orientation dimensions; customer orientation, competitor orientation and inter-functional coordination, innovation and firm performance. Following those of Slater and Narver (1995) and Han, Kim and Srivastava (1998) it is assumed that innovation mediates the

relationship between the three dimensions of market orientation and business performance of the SMEs.

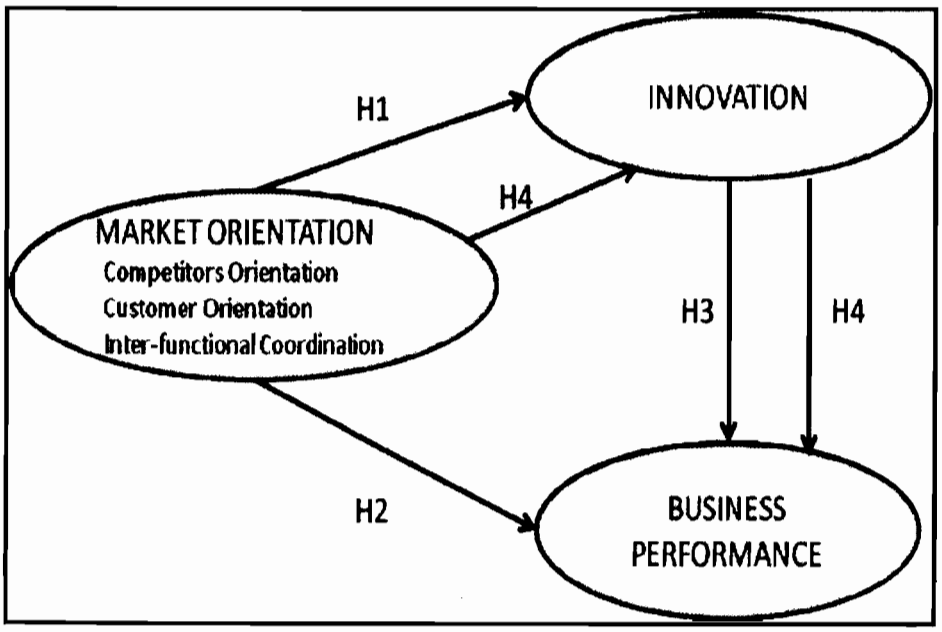

Figure 2.1:
Proposed Research Model

The proposed model, in Figure 2.1, is underpinned by the Resource Based Theory (Penrose, 1959) which explains how a firm achieves and maintains superior performance. According to this theory, firms could perform better and gain competitive advantage if they have better resources and to utilize and exploit them against their rivals. The resources are considered not only the internal production capabilities of the firm but the overall ability to adjust in response to external environment. This includes managerial capabilities to learn new ways to develop new resources in terms of developing new strategy or to bring change in the firm against the external environmental changes to gain sustainable competitive advantage (Verhees & Meulenberg, 2004; Farrell, 2000).

Under the Resource Based Theory, the firm's ability to know about the market place and to respond to marketplace changes is the key in not only surviving the competitive environment but to enhance better performance against their rivals. The risk taking attitude and learning of new ideas to overcome external pressure is the core competencies of the firm. A certain amount of competence is needed in the implementation of new strategies for greater firm performance (Lumpkin & Dess, 1996). Based on the premise that the firm's overall capabilities to develop internal resources to response to external environment through developing new strategies, implementing market orientation and continuously enhancing firm innovative capabilities may be the key to gain sustainable competitive advantage.

2.11 CHAPTER SUMMARY

This chapter reviews the literature that is relevant to the research questions and research objectives. It provides the background on the definition of SMEs and the development of the industry in the Malaysian context. The chapter further reviews the literature on market orientation, innovation and performance, and their direct and indirect relationships. Hypotheses were formulated to answer the research questions and a research model was developed to be studied

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

The study was designed to examine the relationships between market orientation, innovation and business performance of the small and medium sized enterprises in the ICT industry in Malaysia. This chapter presents the methodology to develop answers to the research questions. The chapter discusses the research design, sampling procedures, instrumentation, validity and reliability of the study instruments, data collection, and the data analysis methods used to test the hypotheses.

3.2 RESEARCH DESIGN

A quantitative cross-sectional survey research type was chosen for this study. The survey method was chosen because it is an approach that uses several basic procedures to obtain information from people in their natural environment (Graziano & Ravlin, 1997). A survey was also conducted with the specific intent of generalizing the results to the population (Girden, 2001). Some of the advantages of survey research include (1) method can be controlled, (2) information can be obtained that is otherwise inaccessible,

and (3) it may be conducted with the intent of obtaining a general sense of what people feel (Leedy, 1997).

Besides the reasoning given by Leedy (1997), survey method has also relatively high levels of validity since questions can be posed directly addressing the underlying nature of a construct (Lyon, Lumpkin & Dess, 2000). Surveys can be developed that contain a sufficiently comprehensive set of items to represent the subject matter of interest. Furthermore convergent and discriminant validity techniques can be used to determine the adequacy of such measures (Mason & Bramble, 1989). In addition, multi-item scales and survey instruments are useful for measuring current conditions within a firm with a high degree of specificity (Lyon, Lumpkin & Dess, 2000). Scale items that have forced-choice responses can contribute to greater measurement validity. Moreover, the survey approach can efficiently collect large amount of data at relatively low cost and can be subjected to statistical analysis (Snow & Thomas, 1994).

This study also employed mail survey as the means to data collection. Mail survey was chosen for several reasons. First, it is commonly used in similar kinds of research (Narver & Slater, 1990; Jaworski & Kohli, 1993; Pelham, 1997; Kumar, Subramanian & Yauger, 1998). Second, it can cover wider geographic areas that in turn makes it much easier for data collection than the personal interview method. Finally, self-administered questionnaires can eliminate interviewer bias (Jobber, 1991). Therefore the research design chosen met the needs of this study as it seeks to provide reliable and valid outcomes.

3.3 SAMPLING PROCEDURE

3.3.1 Sample Size

The population of this study was based on the total of ICT small and medium sized firms registered with the Malaysian Development Corporation (MDeC) and conferred with MSC status. The ICT industry was chosen because of its reputation as a competitive, quickly changing and innovative service industry requiring diligence on the part of its members to create and maintain a sustainable competitive advantage through value-added products and solutions. As at the end of 2008, a total of 1911 companies were registered with MDeC, and of this total more than half or 1000 companies can be classified as SMEs (MDeC, 2009). SMEs are defined as firms with full-time employees of not exceeding 50 or with annual sales turnover not exceeding RM5 million. The number of MSC status companies that are in MDeC's database is listed in Table 3.1 below.

A simple random sampling method is best employed to enable the generalization of the findings to the population (Bryman & Bell, 2003). Random sampling approach was also suggested due to its ability in providing much information of a given sample size. Creswell (2003) recommended a random sample in which each individual in the population has an equal probability of being selected. According to Saunders, Lewis and Thornhill (2007), probability sampling is a compromise between the accuracy of findings and the amount of time and money invested in the collection, checking and analyzing of the data.

Table 3.1
Population of MSC status companies (including SMEs)

Year	No of MSC status Companies	
	Total Companies	SMEs
1997	52	30
1998	70	35
1999	67	20
2000	90	50
2001	143	67
2002	151	112
2003	150	93
2004	183	112
2005	240	148
2006	295	122
2007	272	154
2008	197	57
	1911	1000

Source : *MDeC at www.mdec.com .my and www.msc.com.my*

Researchers have mentioned that the sample size should be adequate to the research by being large enough to approximate the characteristics of the population satisfactorily and provide a credible result (McMillan & Schumacher, 2001). The choice of the sample size is usually governed by the following; the confidence that the researcher needs to have in the data, the margin of error that the researcher can tolerate, the types of analysis that the researcher is going to undertake, and the size of the population from which the sample is being drawn (Hair, Anderson, Tatham & Black, 1995 ; Kline, 1996).

Based on the total population of 1000 SMEs registered with MDeC, the appropriate sample size as suggested by Saunders, Lewis and Thornhill (2007) should be 278 while

Sekaran (2003) suggested should be at 254. The sample size obtained for this study also conforms to the rule of thumb as proposed by Roscoe (1975) that sample size larger than 30 and less than 500 is appropriate for most studies. Roscoe's proposal was supported by other authors who stated that a sample size of less than 100 is regarded as small, medium sample size is between 100 and 200 while large sample size is more than 200 (Hair *et al.*, 1995; Hulland, Chow & Lam 1996; Kline 1998). Thus, a sample size of 272 is accepted as appropriate representative and sufficient for further analysis. However, to overcome the probability of non-response which commonly can be as high as 70 to 80 percent (Malhotra, 1996), the number of questionnaire sent were more than triple than the intended sample needed. In this study, the questionnaires were sent to all the 1000 SMEs in the sample which is also the population.

3.4 MEASURES AND INSTRUMENTATION

All constructs included in this study were measured using established measures drawn from previous studies. Although the scales used in this study have been previously reported in the literature, a scale validation procedure was still performed using confirmatory factor analysis (CFA) and coefficient alpha. The scale reliabilities associated with these measures have been reported elsewhere in the literature, thus the results of this study will replicate, confirm, and support earlier findings. This process will ensure that the scales used are both valid and reliable for the specific purposes of this study.

3.4.1 Market Orientation

There are two approaches to measuring market orientation. The first was by Narver and Slater (1990) who approached market orientation from a cultural perspective. The second was by Jaworski and Kohli (1993) who used a behavioral approach. Each study developed a valid measure of market orientation and empirically assessed its influence on firm performance. Narver and Slater (1990) operationalized market orientation into three dimensions or constructs; customer orientation, competitor orientation and inter-functional coordination. Customer orientation is the sufficient understanding of one's target buyers as it will enable the creation of superior value by the firm for their customer continuously. Competitor orientation is where the firm understands the short-term strengths and weaknesses, long-term capabilities and strategies of both the key current and key potential competitors. Competitor orientation as well explains the inter-functional coordination as the coordinated utilization of a firm's resources in creating superior value for target customers. Firm's too need long-term focus as it is related to profits and implementation of each of three behavioral components from a long-term perspective in order to achieve long-term survival (Narver & Slater, 1990).

Jaworski and Kohli (1993) defined market orientation in three components of market information processing; market intelligence generation, dissemination and responsiveness in a learning organization. Intelligence generation includes an analysis of exogenous factors that influence those needs and preferences and the changing needs of customers throughout the whole organization. Intelligence dissemination is the communication or

dissemination of market information to relevant departments and individuals in the organization. Responsiveness is the action taken in response to market intelligence that is generated and disseminated.

This study adopted Narver and Slater's (1990) market orientation because their constructs separate into different components. Thus, it is easier to see the impact of each component on business performance. Although market orientation is viewed as a single construct, some researchers have analyzed each component separately (Lukas & Ferrell, 2000). The market orientation measures consist of six (6) items for customer orientation, seven (7) items for competitor orientation, and five (5) items for inter-functional coordination, resulting in 18 items. The items were measured on a five-point Likert-type scale, and were coded on a scale of 1 (strongly disagree) to 5 (strongly agree). The scale items are listed in Table 3.2 below.

Table 3.2
Market Orientation Scale

Competitor Orientation
1. Managerial staff regularly shares information within our organization regarding our competitors' actions.
2. We keep informed and analyze the product offers by our competitors.
3. Managerial staff targets customer where we can have an opportunity for competitive advantage.
4. Top management often discusses competitors' strengths and strategies.
5. We usually anticipate how our competitors will response to our competitive move.

6. We rapidly response to competitive action that threatens us.

7. When I am faced with decision making situation, I am willing to take riska

Customer Orientation

8. Our business strategies is driven by our beliefs about how we can create greater value for customers.

9. We measure customer satisfaction systematically and frequently.

10. Our business objectives are driven primarily by customer satisfaction.

11. Our competitive advantage is based on our understanding of customer needs.

12. We constantly monitor our level of commitment and orientation to serving customer needs.

13. We give close attention to after sales services.

Inter-functional Coordination

14. Our top managers business function regularly visit our current and prospective customers.

15. We freely communicate information about our successful and unsuccessful customer experiences across all business functions.

16. All our business functions (sales, marketing, R&D, finance) are integrated in serving the needs of our target markets.

17. All our managers understand how everyone in our business can contribute to creating customer value.

18. We share resources with others business units.

3.4.2 Innovation

The innovation scale is made up of eight (8) items. The items measure the development and implementation of new products, new services, new methods of production, new methods of marketing and establishment of new markets in small business operations. The items measuring innovation were drawn and modified from Han, Kim and Srivastava (1998), Cosh, Hughes and Wood (1999), and Lipparini and Sobrero (1994). The items were also measured on five (5) point Likert type scale, where 1 indicated 'strongly disagree' and 5 indicated 'strongly agree'. The scale items on innovation are listed in Table 3.3.

Table 3.3
Innovation Scale

Innovation
1. For the past 5 years the business has developed many new products or services.
2. For the past 5 years, the business has improved the product or service it offers.
3. For the past 5 years, the business has improved its method of production.
4. For the past 5 years, the business has developed new methods of marketing.
5. For the past 5 years, the business has established new markets.
6. Knowledge allow firm to develop and implement innovation strategies in marketing
7. For the past 5 years the competitors have provided the business with innovative ideas.
8. For the past 5 years the customers have provided the business with innovative ideas.

3.4.3 Performance

The performance measures used in this study were also drawn from the literature. Performance can be measured by two perspectives; an objective concept measures of performance and a subjective concept involving self-reported measures (Tse, Sin, Yau, Lee & Chow, 2004). Subjective approach was adopted in this study where the respondents were asked to state their firms' performance on criteria like profitability and market share relative to that their competitors and industry average. Subjective performance measures were used for four primary reasons. First, a selected multi-item subjective measure is more accurate than a single quantitative factor (Gupta and Govindarajan, 1984). Second, subjective measures may increase the response rate in case objective data either are not available or firms are not willing to reveal this information (Dess & Robinson, 1984). Third, subjective measures have been shown to be correlated strongly to objective measures of performance (Dawes, 1999; Dess, Lumpkin & Covin, 1997; Narver & Slater, 1994; Dess & Robinson, 1984). And fourth, subjective measures have been widely used in previous market orientation and performance studies (Slater & Narver, 1994; Jaworski & Kohli, 1993; Narver & Slater, 1990). Pearce, Robbins and Robinson (1987) also suggested that subjective evaluations were a reliable means for measuring performance. Sample of the item include 'Overall how successful is your business as a whole?' The items were rated on a five-point Likert type scale ranging from (5) which indicated 'much better than competitors', (4) 'better than competitors', (3) 'about the same', (2) 'worse than competitors', and (1) which indicated 'much worse than competitors'. The scale items for performance are listed in Table 3.4.

Table 3.4:
Performance Scale

Business Performance
1. Gross Profit (before tax)
2. Return on Asset (ROA)
3. Profitability
4. Growth
5. Overall Business Success

3.4.4 Instrumentation

A structured questionnaire was designed to measure the various issues under investigation. Specifically, the questionnaire was divided into four sections. Section One measured the market orientation and contains items related to the three (3) components of the construct; competitor orientation (Item 1 – 7), customer orientation (Item 8 – 13), and inter-functional coordination (Item 14 – 18). Section Two investigated the mediating role of innovation (Item 19 – 26) and Section Three measured business performance of the firm. Finally, Section Four contained items regarding personal and firm's demographical information.

3.5 RELIABILITY AND VALIDITY

3.5.1 Reliability

Reliability is the extent to which a measurement procedure yields consistent results over an extended time frame (Carmines & Zeller, 1979). Any measurement of a concept contains a certain amount of chance or random error. Since error free measurement is not theoretically possible, researchers seek to minimize random error. Thus the amount of random of random error is inversely related to the degree of reliability of the measuring instrument.

The recommended measure of the internal consistency of a set of items is provided by coefficient alpha (Churchill, 1979). Cronbach's coefficient alpha determines the mean reliability coefficient for all possible ways of splitting a set of items in half. As the average correlation among items increases and as the number of items increases, the value of alpha increases (Nunnally, 1978). Thus a high alpha indicates that the items correlate well with the true scores while a low alpha indicates that the items perform poorly on the construct of interest (Nunnally, 1978). Cronbach's alphas of 0.80 or higher are considered good and alphas of at least 0.70 are deemed acceptable (Nunnally & Bernstein, 1994).

Narver and Slater (1990) who computed Cronbach's coefficient alpha as a basic method of estimating internal reliability reported the scores for competitor orientation, customer

orientation and inter-functional coordination as 0.73, 0.87 and 0.73 respectively. Since this study's measures were adapted from those of Narver and Slater (1990), the same Cronbach alpha method for assessing reliability was utilized. Similar assessments were made on innovation and performance measures using Cronbach's alpha as a measure of scale reliability. Masroor (2009) reported that reliability scores for competitor orientation, customer orientation, inter-functional coordination, innovation and business performance measures were 0.76, 0.83, 0.65, 0.90 and 0.75 respectively. Reliability scores indicated by Sartika (2001) for competitor orientation, customer orientation, and business performance were 0.733, 0.65 and 0.827 respectively. The reliability scores for all measures used in this study are presented in Table 3.5.

Table 3.5:

Cronbach's Alpha Reliability Scores

Dimension	Cronbach's Coefficient Alpha`- Pilot Test	Cronbach's Coefficient Alpha`- Past literature
Competitor Orientation	0.809	0.73 to 0.76
Customer Orientation	0.852	0.65 to 0.87
Inter-functional Coordination	0.753	0.71 to 0.73
Innovation	0.829	0.90
Business Performance	0.909	0.75 to 0.85

The coefficient alphas for all measures were above 0.70 and this shows that the items used in this study had achieved the acceptable level of reliability.

3.5.2 Validity

A measure is valid when it actually measures what it is intended to measure (Nunnally, 1978), and therefore the measures used in this study is necessary to be valid too. The measures become invalid due to the presence of non random error which prevents the measures from representing what they are intended for (Carmines & Zeller, 1979). Instead these measures may represent something other than the intended concept or even a different concept entirely.

For the purpose of this study, the validity was performed to measure the dimension by correlating (the extent to which two or more variables are associated with one another) each of the indicators with the total score result. The methods for measuring correlation include the intraclass correlation the Pearson product-moment correlation coefficient (Ghozali, 2005; Ghozali, 2008). . The results were then compared statistically with critical number of the r value of the correlation table. If the r-count is greater than r-table (r-count > r-table), the data is considered significant (valid), and the indicator is deserved to be used in the next analysis (r- table was referred from Pearson product-moment correlation coefficient (Ghozali, 2005; Ghozali, 2008)).

Content of this research was validated by determining the variables which have been defined and used previously in the literature (Churchill, 1988; Green, Tull & Albaum, 1988; Churchill & Iacobucci, 2004). In this study, the dimensions of variables were identified from the marketing orientation, innovation and business performance literature.

The opinions from field experts were sought to provide relevant inputs adding to what have been identified from the literature.

Construct validity in this study was determined by using confirmatory factor analysis (CFA). Confirmatory factor analysis will determine if the measures or items are loaded on the appropriate factors as identified by previous researchers (Venkatraman, 1989). Since this study sought to test the potential relationships among variables, a confirmatory factor analysis using AMOS 6.0 was applied. Further, to achieve construct validity, the measurement should demonstrate convergent validity and discriminant validity. In this study, the correlation matrix were analyzed for convergent and discriminant validity.

Similarly, confirmatory factor analysis was used to validate the components of market orientation, innovation and business performance. The purpose of using confirmatory factor analysis was not only to validate all of the scales in this study, but also to assess the degree to which the data met the expected structure of the study. A subscale consisting of several highly correlated items has high construct validity. Only the factor loading scores with an acceptable value are considered significant in describing the factor. Hair, Anderson, Tatham and Black (1995) suggest that factor loadings greater than 0.30 are considered to meet the minimal level, loadings of 0.40 are considered more important and if the loadings are 0.50 or greater, they are considered practically significant. Comrey and Lee (1992) suggest that loadings in excess of 0.71 are considered excellent, 0.63 very good, 0.55 good, 0.45 fair and 0.32 poor. Meanwhile Tabachnick and Fidell (2001) state that for the choice of the cutoff for loading size is the

preference of the researcher. Based on this guideline, a cutoff point of 0.40 and greater was considered as significant factor loadings for this study. Results of the CFA analyses are discussed in Chapter Four.

3.5.3 Pilot Test

A pilot study involving the administration of the measures to a random sample of 30 owner /managers of the SMEs was conducted prior to the beginning of the full study. The purposes of the pilot study were to first estimate the reaction of the potential respondents to the length, format and content of the survey instrument. Secondly, to ask the participants to comment critically on the clarity of the survey scales, and finally to improve the reliability and validity of the measurement scales. The overriding purpose of the pilot study was to improve the face validity of the survey instrument and to enhance the psychometric properties of the scales. Conducting the pilot study was consistent with Nunnally's (1978) recommendation that subjective assessments be made of a survey instrument to ensure that the questions are understandable and that the scale items represent the underlying constructs of interest.

The results of the pilot test were helpful in two areas. First, several improvements were made in the wording of questions and scale items as a result of suggestions made by individual respondents. Second, the results revealed the strengths and weaknesses in the operationalization of the variables and dimensions in the study.

3.6 DATA COLLECTION PROCEDURE

3.6.1 Data Collection and Survey Response

Following the completion of the pilot study, a revised survey instrument was prepared and mailed to the selected SMEs obtained from the MDeC's directory. The respondents selected for the research were owner/managers of the firms. The owner/managers are considered the most likely informants as they are the people who are involved in the overall running of the firms. It has been found that the owner/managers in small firms often represent the views of the entire firm (Chandler & Hanks, 1994; Brush & Vanderwerf, 1992).

A total of 1000 questionnaires were mailed along with a cover letter and self addressed stamped return envelope. The questionnaires were distributed accordingly; 200 questionnaires were sent out in August 2008, 600 questionnaires were circulated in September and October 2008 and the final 200 questionnaires were given out in November 2008. The distribution was purposely staggered for four months because the researcher wanted to see the respondents' feedback and have a time to follow up since mail survey takes longer period to respond. (Sekaran, 2003). The paper used was plain white as it has been found that the use of coloured paper does not significantly improve response rates (Newby, Watson & Woodriff, 2003; Greer & Lothia, 1994). The respondents were told that the study was part of a DBA student's dissertation. Respondents were asked to complete the questionnaire and return it using the self

addressed envelope attached with the questionnaire. A one month's grace period was given and then reminders were sent, thanking those who participated and requesting those who had not, to do so. The respondents' feedbacks were as follows. First feedbacks from 54 respondents were received in October 2008. Second feedbacks from 163 respondents were received between October and November 2008 and the last feedbacks from 55 respondents were received in January 2009. Of the 1000 questionnaires sent, 272 usable responses were obtained, resulting in a response rate of 27.2 percent, which is relatively high for a mail-survey research (Sekaran, 2003).

3.6.2 Data Cleaning and Screening

Accuracy of data input. Subsequent to collecting the questionnaire survey, a research assistant helped to enter the data into the SPSS statistical software version 16.0 in February, 2009. A total of 272 (27.2 percent) respondents completed the survey. Screening of the data sets was conducted through an examination of basic descriptive statistics and frequency distributions. Values that were found to be out of range or improperly coded were detected with straight forward checks (Kassim, 2001). A frequency test was run for every variable to detect any illegal and missing responses. No cases of illegal responses were noted.

Outliers. This was done to detect extreme cases only. Multivariate assessment of outliers with Mahalanobis distance was conducted because some individual (univariate) outliers

may also become multivariate outliers when several variables were combined (Tabachnick & Fidell, 2001; Hair *et al.*, 1998). A critical χ^2 (Chi Square) value with degrees of freedom and a probability of $p < 0.001$ was compared (Kassim, 2001; Tabachnick & Fidell, 2001; Kline, 1998). From this comparison, multivariate outliers existed in most of the models. If outlier cases were found to be different from the rest of the cases in the population, then the outliers were removed from the sample. However if they appear to be simply cases with unusual scores within the same population, then they could be retained to maintain validity in the research.

Outlier Treatments

The outlier treatment is to identify the number of item measurements that are farthest from the centroid (Mahanalobis Distance). In this research, each of the research models was examined for Mahalanobis distance. A critical χ^2 value with degrees of freedom equal to the number of variables, n, and a probability of $p < 0.001$ was compared ($\chi^2_{(n,p)}$ value) (Kline 1998; Tabachnick & Fidell 2001; Kassim 2001; Kamariah, 2007). From this comparison, there were multivariate outliers in most of the models. However, the final decision about retaining or discarding outlier cases is not merely a technical one based on some the critical value of χ^2. Of course if that outliers are that different population than the rest of the cases, then outliers should be removed from the sample. However, if they appear to be simply cases with unusual scores within the same population, then they could be retained to maintain validity in the research. (Hair et al. 1998).

Normality. The first basic assumption about SEM is that all data have a multivariate normal distribution (Hooley & Hussey, 1994; Hulland, Chow & Lam, 1996). Multivariate normality includes both the distributions of individual variables and the distributions of combinations of variables (Hooley & Hussey, 1994). This assumption is necessary in order to allow significance testing using the t-test and F statistics (Hooley & Hussey, 1994; Baumgartner & Homburg, 1996; Hair et al., 1998; Tabachnick & Fidell, 2001).

For SEM model, estimation and testing were based on the validity of multivariate normality assumption and lack of normality will adversely affect goodness-of-fit indices and standard errors (Hulland et al., 1996; Baumgartner & Homburg, 1996; Kassim, 2001).

To assess normality, skewness and kurtosis were two ways that can be used to validate an assumption. According to Tabachnick and Fidell (2001), skewness refers to the symmetry of a distribution, that is, a variable whose mean is not in the centre of the distribution is regarded as skewed variable. On the other hand, kurtosis relates to the peakedness of a distribution. A distribution is said to be normal when the values of skewness and kurtosis are equal to zero (Tabachnick & Fidell 2001). Many authors suggest that absolute values of univariate skewness indices greater than 3.0 seem to describe extremely skewed data sets (for example, Hair et al. 1992;). Regarding kurtosis, there appears to be less consensus and a conservative compromise seems to be that absolute values of the kurtosis index greater than 10.0 may suggest a problem and values greater than 20.0 may indicate a more serious one (Kline 1998; Kassim 2001).

However, there are few clear guidelines about how much non-normality is problematic. In this study, all variables were tested at a univariate and multivariate level for normality using AMOS. At the univariate level, in the proposed models, had skewness greater than 2.0 (see section 4 , Table 4.3 indicators INNO6, INNO7, INNO8, INTERF1, BP1 AND BP2, were greater than 1.96 and normal and must be transform the data) and none had kurtosis index greater than 8.0 (Kamariah, 2007). These figures indicated that the data was not distributed normally and need to transform. However, these examinations of skewness and kurtosis at univariate level provided only an initial check on multivariate normality (Hair et al. 1998; Kline, 1998; Kassim, 2001; Tabachnick & Fidell 2001; Churchill & Iacobucci 2004).

3.6.3 Data Analysis

Multiple regression analyses were employed to test all the hypotheses. To test for mediation, Baron and Kenny's (1986) three step processes for establishing mediating was used. The authors suggested that mediation occurs when (i) the independent variable significantly affects the mediator, (ii) the independent variable significantly affects the dependent variable in the absence of the mediator, and (iii) the mediator significantly and uniquely affects the dependent variable.

The most commonly used and most frequently cited test of mediation is illustrated in Figure 3.1 as follows (Baron & Kenny, 1986).

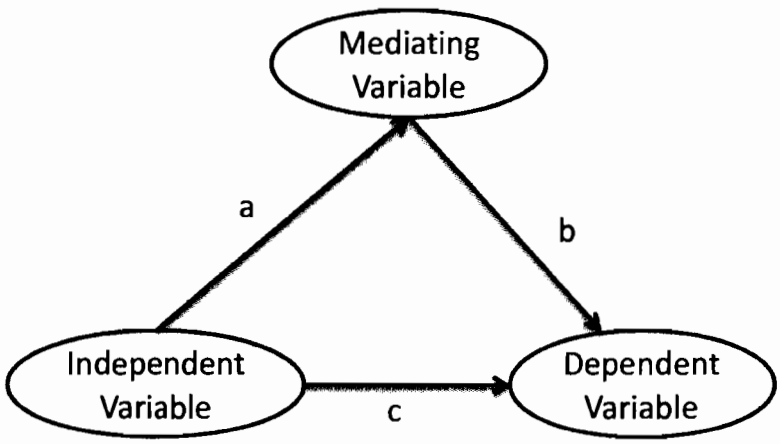

Figure 3.1
The Mediation Model

The four steps involved:

1. IV predicts DV (so estimate path c).
2. IV predicts mediator (so estimate path a)
3. Mediator predicts DV (while controlling for IV) (so estimate path b)
4. IV does NOT predict DV (while controlling for mediator) (so estimate path c')

The test determines the significance of the indirect effect of the mediator by testing the hypothesis of no difference between the total effect (path c) and the direct effect (path c'). The indirect effect of the mediator is the product of path ab which is equivalent to C' calculated (C'= a*b). SEM tests the significance of indirect effects that was used to administer the mediation test. From the standardized indirect effects table, C' table was determined. C' calculated = a*b have no differences with C' table. And if indirect effect C' greater than c direct effect, (C'> c) so the there is a mediating variable effect.

Following the hypotheses tests, the overall model was tested via Structural Equation Modeling (SEM). Some basics in SEM approach are as follows (Ghozali, 2008; Kamariah, 2007; Schumacker & Lomax, 2004; Tabachnick & Fidell, 2001; Kline, 1998; Hair et al.,1998):

- Identify the theory involved.
- Draw a diagram or model relating the variables (Hypothesized Model)
- Design measure (instruments) to collect the relevant data model estimation.

- Use AMOS to draw the model to be tested (AMOS is a statistical software that used SEM technique).
- Access the goodness-of-fit using the relevant indications.
- Modify the model if necessary.
- Test goodness-of-fit again.
- If the 'best' goodness-of-fit is obtained for the data collected, discuss the validity of the theory.

The goodness of fit indexes which are commonly used in the literature were employed to test model fit as follows (Ghozali, 2008; Kamariah, 2007; Ghozali, 2005; Hair et al. 1998):

Chi Square: χ^2 : The statistic ratio appears as CMIN/DF, the relative chi-square, is an index of how much the fit of data to model has been reduced by dropping one or more paths. Value measure indicates a better fit when it is smaller. Others suggestion is that the ratio is as low as 1.0 or as high as 3.0 (Kline, 1998).

Ratio: Let χ^2/df be the ratio of chi square to its degrees of freedom . Values of greater 2.0 indicates a good model fit (Kline, 1998).

Degrees of freedom (DF): Values of greater 2.0 indicates a good model fit (Kline 1998).

Probability: The *p* value examines the alternative hypothesis that the RMSEA is greater that .05. So if the *p* is greater than .05, then it is concluded that the fit of the model is "close."

Root Mean Square Error of Approximation (RMSEA): This measure expresses model fit per degree of freedom, that is, in terms of the population and not just the sample the researcher uses to estimate the model. Value of 0.08 or less indicates a good model fit, while value higher than 0.08 have poor fit in the population (Hair et al. 1998).

Adjusted goodness-of-fit index (AGFI) : The AGFI indicates the population of the observed covariance explained by the model implied covariance adjusted for the number of degrees of freedom. Values of greater 0.90 indicate a good fit (Kline 1998).

Comparative Fit Index (CFI) and Tucker Lewis Fit Index (TLI) : are two incremental fit indices. These measures were used to indicate the proportion in the improvement of the overall fit of a model relative to a null model (Kline 1998; Shumacker & Lomax 1996). Values of greater 0.90 indicate a good model fit (Kline 1998).

Akaike Information Criterion (AIC) : The AIC measure indicates a better fit when it is smaller (Kline 1998).

In this study, confirmatory factor analysis was accomplished by using exogenous and endogenous variables. On the model to be observed there are two endogenous variables;

innovation and business performance. The model also has three exogenous variables; they are competitors orientation (COMP), customer orientation (CUST) and inter-functional coordination (INTERF), which will be the variable indicators in measuring market orientation (MO). The confirmatory analysis was performed for the following:

1. Testing whether latent construct of exogenous competitor orientation (COMP) is a one-dimensional construct defined by observed variable COMP1 to COMP7.
2. Testing whether latent construct of exogenous customer orientation (CUST) is a one-dimensional construct defined by observed variable CUST1 to CUST6.
3. Testing whether latent construct of exogenous inter-functional coordination (INTERF) is a one-dimensional construct defined by observed variable INTERF1 to INTERF5.
4. Testing whether latent construct of endogenous innovation (INNO) is a one-dimensional construct defined by observed variable INNO1 to INNO8.
5. Testing whether latent construct of endogenous business performance (BP) is a one-dimensional construct defined by observed variable BP1 to BP5.
6. Testing the multi-dimensionality of market orientation (MO) construct which consists of three factors, they are competitor orientation (COMP), customer orientation (CUST), and inter-functional coordination (INTERF).
7. Testing latent construct of endogenous innovation (INNO) variable and business performance (BP).
8. Completing the Measurement Model Test, the researcher performed the Structural Model Test.

3.7 CHAPTER SUMMARY

This chapter examined the relationships between market orientation, innovation and business performance of the SMEs. The research design, sampling procedure, instrumentation, validity and reliability, data collection and data analyses were described. The methodologies adopted from Cosh et al. (1999), Lipparini and Sobrero (1994), Han et al. (1998), Narver and Slater (1990) were explained. Finally, analyses described in this chapter will be further explained in the following chapter.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 INTRODUCTION

Chapter four presents the result of the data analysis. Data analysis includes descriptive statistics and the sample of the demographic profile. Structural equation model (SEM) AMOS 16.0 and SPSS 16.0 were used to measure the performance and the validity of the theory of the proposed framework. Hypotheses testing to examine the relationships among variables of market orientation, innovation and business performance are also in this chapter.

4.1.1 Non Response Bias

There is potential for non-response bias in this study that relies on respondent cooperation. The problem exists because of an inability to obtain response from some members of the selected sample. A typical method for assessing non-response bias would be to compare the characteristics of the respondents who responded to the survey to those who did not, but this was not possible. Therefore, non-response bias in this study was assessed by comparing those who responded early to those who responded late (Armstrong & Overton, 1977). The researcher compared the demographic data the last 60 percent of the respondents (n = 163) to the data of the first 40 percent of the respondents (n = 109). The researcher found that the distribution of scores for age, years of company's existence,

number of employees, and years of working in the company did not show any significant differences (See Table 4.1 below). Thus, non-response bias does not appear to be a concern in this study

Table 4.1
Group Differences for Demographic Data between Early 40 percent and Late 60 percent

Variable	Early 40% (1-109), n=109 Mean	SD	Late 60% (110-272),n = 163 Mean	SD	F	Sig, (p)	T
1. Age	2.27	0.741	1.96	0.849	0.887	0.347	3.093
2. Years of company's existence	3.04	0.999	2.58	1.070	2.387	0.124	3.518
3. Number of employees	2.86	1.475	2.71	1.221	14.768	0.058	0.917
4.Type of Industry	1.95	0.534	1.99	0.533	0.199	0.656	0.509
5. Job title	1.63	0.484	1.49	0.501	12.115	0.061	2.324

4.1.2 Preliminary Examination of Data

This section presents the screening and cleaning of raw data before they were analyzed. Two broad categories of problems were discussed : case related issues such as the accuracy of the data input, missing data, observation and outliers, and distribution issues such as normality (Tabachnick & Fidel, 2001; Hair, Anderson, Tatham & Black, 1995).

4.1.3 AMOS Output For data Cleaning

4.1.3.1 Outlier Treatments - Mahalanobis Distance of Outlier

The outlier treatment is to identify the number of item measurements that are farthest from the centroid (Mahanalobis Distance of Outlier). The test was illustrated in Table 4.2. Using the maximum mahalanobis residue statistic, (Ghozali, 2008; Kamariah, 2007; Palaniappa, 2005; Byrne, 2001), the researcher can perform verification of outliers as follows:

From Table 4.2:

At $p = 0.001$ and $n = 31$ item variables,

Chi-Square value = $\chi^2_{(n,p)}$ = $\chi^2_{(31,0.001)}$ table = 61.10.

From Table 4.2, the Mahalanobis Residuals Statistics Observation (maximum) for χ^2 calculated = 66.592 .

Therefore $\chi^2_{(31, 0.001)}$ table = 61.10 < χ^2calculate = 66.592. Any value that is above 61.10 has to be deleted. Data respondent number 190 is invalid and regarded as an outlier data. This is an indication that the data is not normally distributed and thus respondent number 190 for this research was deleted.

Table 4.2
Observations farthest from the centroid (Mahalanobis Distance)

Observation number	Mahalanobis d-squared	p1	p2
190	66.592	0.000	0.056
74	61.310	0.001	0.028
213	60.865	0.001	0.003
221	58.824	0.002	0.002
230	56.474	0.003	0.003
115	56.180	0.004	0.001
185	55.937	0.004	0.000
98	55.604	0.004	0.000
228	55.253	0.005	0.000
56	54.902	0.005	0.000
254	54.791	0.005	0.000
271	54.495	0.006	0.000
223	54.454	0.006	0.000
247	52.677	0.009	0.000
103	52.359	0.010	0.000
92	51.631	0.011	0.000
169	50.642	0.014	0.000
125	49.805	0.018	0.000
82	49.802	0.018	0.000
70	49.452	0.019	0.000
231	49.297	0.020	0.000
117	49.091	0.021	0.000
20	48.093	0.026	0.000
91	47.926	0.027	0.000
179	47.829	0.027	0.000

Observation number	Mahalanobis d-squared	p1	p2
264	47.628	0.029	0.000
80	47.573	0.029	0.000
262	47.312	0.031	0.000
68	47.009	0.033	0.000
18	46.973	0.033	0.000
123	46.955	0.033	0.000
272	46.929	0.033	0.000
142	46.841	0.034	0.000
268	45.952	0.041	0.000
241	45.470	0.045	0.000
172	45.236	0.047	0.000
159	45.134	0.049	0.000
201	44.643	0.054	0.000
3	44.364	0.057	0.000
267	44.339	0.057	0.000
87	43.858	0.063	0.000
119	43.499	0.067	0.000
111	43.279	0.07	0.000
182	43.253	0.071	0.000
12	42.796	0.077	0.000
30	42.600	0.08	0.000
16	42.544	0.081	0.000
86	42.242	0.086	0.000
126	42.115	0.088	0.000
263	42.093	0.088	0.000

Observation number	Mahalanobis d-squared	p1	p2
205	41.906	0.091	0.000
69	41.567	0.097	0.000
202	41.479	0.099	0.000
174	41.258	0.103	0.000
29	41.212	0.104	0.000
15	41.137	0.105	0.000
5	40.594	0.116	0.000
132	40.480	0.119	0.000
148	40.319	0.122	0.000
186	40.201	0.125	0.000
124	40.160	0.125	0.000
81	40.121	0.126	0.000
99	40.074	0.127	0.000
114	40.068	0.128	0.000
175	39.487	0.141	0.000
194	39.405	0.143	0.000
1	39.218	0.148	0.000
189	39.102	0.151	0.000
208	38.488	0.167	0.000
177	38.227	0.174	0.000
203	38.224	0.174	0.000
136	38.151	0.176	0.000
161	38.009	0.180	0.000
168	37.583	0.193	0.001
196	37.380	0.199	0.001

Observation number	Mahalanobis d-squared	p1	p2
8	37.335	0.201	0.001
17	37.306	0.202	0.001
146	36.817	0.218	0.004
167	36.766	0.219	0.004
199	36.697	0.222	0.003
13	36.660	0.223	0.002
39	36.510	0.228	0.003
239	35.611	0.26	0.054
214	35.559	0.262	0.048
207	35.490	0.265	0.045
76	35.374	0.269	0.048
93	35.236	0.275	0.056
101	35.209	0.276	0.046
7	35.201	0.276	0.036
173	34.950	0.286	0.059
270	34.894	0.288	0.053
191	34.827	0.291	0.050
63	34.808	0.291	0.040
137	34.702	0.296	0.043
260	34.574	0.301	0.049
90	34.141	0.319	0.129
187	33.866	0.331	0.200
94	33.864	0.331	0.168
32	33.861	0.331	0.139
42	33.743	0.336	0.151

4.1.3.2 Assessment of Univariate and Multivariate Normality

Subsequent to outlier tests, an assessment of normality was performed (Churchill & Iacobucci, 2004; Tabachnick & Fidell, 2001; Hair et al., 1998). The test results are illustrated in Table 4.3.

Based on Table 4.3, critical ratio skewness value indicated normal distribution because the value z-score is below 1.96 (Ghozali, 2008; Kamariah, 2007; Byrne, 2001), except for the indicators BP1, BP2, INTERF1, INNO6, INNO7 and INNO8 which have critical ratio skewness over 1.96. Therefore, data distribution is individually not normal. However, data distribution is not yet normal, for the multivariate average is 15.684 which shows that it is greater than 1.96.

To repair the data distribution, the researcher used transformation with "cdfnorm" for the indicators BP1, BP2, INTERF1, INNO6, INNO7 and INNO8. Therefore the result of the transformation produced new indicators TBP1, TBP2, TINTERF1, TINNO6, TINNO7 and TINNO8.

Based on Table 4.4, critical ratio skewness value indicated normal distribution because the value z-score is below 1.96. Therefore, data distribution is individually normal. After data distribution is normal, data outlier test can be performed in order to know whether there is outlier data in the data spread.

Table 4.3
Assessment of normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
COMP7	3.000	5.000	.238	1.604	-.675	-2.272
COMP6	3.000	5.000	.261	1.757	-.686	-2.308
INNO8	3.000	5.000	.325	2.187	-.914	-3.075
INNO7	3.000	5.000	.300	2.021	-.791	-2.663
INNO6	3.000	5.000	.309	2.079	-1.036	-3.486
INTERF5	3.000	5.000	.142	.956	-.612	-2.061
INTERF1	3.000	5.000	.302	2.030	-.826	-2.780
COMP4	3.000	5.000	.215	1.448	-.616	-2.074
INNO5	3.000	5.000	.234	1.575	-.853	-2.873
INTERF3	3.000	5.000	.180	1.214	-.702	-2.364
INTERF2	3.000	5.000	.275	1.853	-.787	-2.650
INTERF4	3.000	5.000	.249	1.674	-.744	-2.505
INNO4	3.000	5.000	.243	1.636	-.668	-2.248
CUST6	3.000	5.000	.094	.636	-1.082	-3.641
CUST1	3.000	5.000	.227	1.531	-.789	-2.655
CUST4	3.000	5.000	.199	1.340	-.638	-2.148
BP4	3.000	5.000	.275	1.854	-.639	-2.150
BP2	3.000	5.000	.396	2.668	-.666	-2.244
BP1	3.000	5.000	.403	2.711	-.677	-2.278
COMP1	2.000	5.000	-.147	-.992	.145	.489
COMP3	2.000	5.000	.069	.462	-.391	-1.318
COMP2	2.000	5.000	.074	.499	-.413	-1.390
INNO2	3.000	5.000	.099	.667	-.624	-2.102
BP3	3.000	5.000	.269	1.808	-.654	-2.200
CUST5	3.000	5.000	.050	.339	-.288	-.971
CUST2	3.000	5.000	.172	1.157	-.806	-2.712
INNO1	3.000	5.000	.081	.546	-.826	-2.779
BP5	3.000	5.000	.235	1.581	-.610	-2.052
INNO3	3.000	5.000	.219	1.475	-.679	-2.285
CUST3	3.000	5.000	.227	1.531	-.807	-2.717
COMP5	3.000	5.000	.265	1.781	-.633	-2.132
Multivariate					86.030	15.684

Table 4.4
After Transformation data - Assessment of normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
COMP7	3.000	5.000	.233	1.565	-.670	-2.252
COMP6	3.000	5.000	.265	1.779	-.690	-2.320
TINNO8	.131	.961	-.013	-.090	-1.321	-4.437
TINNO7	.125	.968	-.111	-.744	-1.291	-4.338
TINNO6	.132	.951	.028	.190	-1.312	-4.409
INTERF5	3.000	5.000	.144	.970	-.620	-2.082
TINTERF1	.125	.965	-.076	-.512	-1.293	-4.344
COMP4	3.000	5.000	.210	1.410	-.611	-2.052
INNO5	3.000	5.000	.237	1.595	-.841	-2.826
INTERF3	3.000	5.000	.183	1.229	-.709	-2.382
INTERF2	3.000	5.000	.278	1.871	-.792	-2.662
INTERF4	3.000	5.000	.252	1.692	-.750	-2.519
INNO4	3.000	5.000	.242	1.627	-.657	-2.207
CUST6	3.000	5.000	.095	.640	-1.088	-3.658
CUST1	3.000	5.000	.230	1.546	-.795	-2.670
CUST4	3.000	5.000	.202	1.359	-.644	-2.165
BP4	3.000	5.000	.280	1.885	-.641	-2.154
TBP2	.148	.986	-.107	-.717	-1.691	-5.682
TBP1	.146	.983	-.105	-.703	-1.619	-5.441
COMP1	2.000	5.000	-.154	-1.034	.168	.566
COMP3	2.000	5.000	.066	.441	-.377	-1.268
COMP2	2.000	5.000	.068	.459	-.402	-1.351
INNO2	3.000	5.000	.095	.635	-.615	-2.067
BP3	3.000	5.000	.263	1.766	-.651	-2.186
CUST5	3.000	5.000	.046	.309	-.274	-.919
CUST2	3.000	5.000	.167	1.121	-.800	-2.689
INNO1	3.000	5.000	.082	.551	-.833	-2.800
BP5	3.000	5.000	.239	1.608	-.613	-2.061
INNO3	3.000	5.000	.222	1.493	-.685	-2.300
CUST3	3.000	5.000	.230	1.545	-.813	-2.732
COMP5	3.000	5.000	.269	1.808	-.637	-2.139
Multivariate					74.650	13.584

4.1.3.3 Assessment of Univariate and Multivariate Normality - Distribution of Standardized Residuals

The Standardized Residual value is the fitted residual value divided by the standard error. The Standardized Residual value > 2.58 is considered high and must be dropped from the analysis.

The essence of SEM is defining the fit or correspondence between restricted covariance matrix and sample covariance matrix (Ghozali, 2008; Hair et. al.,1995). The difference of the two matrixes is reflected on residual covariance matrix value. The residual reflects the difference between hypothesized model and the observed data. The model fitting toward the observed data is proposed to minimize the residual.

Based on Appendix 4.1, it was observed that there is no residual value that is over 2.58, therefore no variables need to be dropped from the analysis.

4.1.4 Correlation

Most multivariate procedure analyze pattern of correlation or covariance among variables prior to testing research models (Tabachnick & Fidell, 2001; Hair et al., 1998). Correlation provide association between two variables which further permit the specification of unique variance between variables and commonly used in SEM (Schumacker & Lomax, 2004).

In this study, the Pearson correlation method was used to test the bivariate relationships between measured and latent variables as is commonly used in SEM (Schumacker & Lomax 2004). The correlation matrix obtained for the variables is shown in Appendix 4.2.

4.1.5 Descriptive Analysis

Descriptive statistics including minimum, maximum, means, range standard deviations and factor loading were obtained for general profile of the distribution responses. Based on the data on the market orientation measure as seen in Table 4.5, the means of weight statistic, the maximum respond for mean was variables , 'customer orientation' at 3.85 and the minimum response were INTERF1, 'business performance ' at 3.68. Most of the standard deviation were less than 1.00 and means of standard weight standard error were less than 0.05. And factor loading were above than 0.5. Therefore it can be concluded that the variation in respondent opinions were small. (Sekaran, 2003; Kassim, 2001; Triola & Franklin, 1995).

Table 4.5
Mean, Standard Deviation and Factor Loading of Market Orientation Innovation and Business Performance Measure

Questions / Variables	Means weight Statistics	Means weight Std Error	Std. Deviation	Factor Loading
Competitors Orientation – (COMP)	3.78	.024	.393	.593
Customer Orientation - (CUST))	3.85	.029	.475	.643
Inter-functional Coordination – (INTERF)	3.81	.028	.457	.594
Innovation – (INNO)	3.82	.027	.448	.600
Business Performance – (BP)	3.68	.030	.493	.750

4.2. DEMOGRAPHIC PROFILE of SME RESPONDENTS

The overall profile of the participant SMEs demographic characteristic is presented in Table 4.6. A total of 272 (27.2 percent) useable responses were obtained out of the 1000 questionnaires sent. According to De Vaus (2001), most researchers limit their sample size to approximately 2000. Studies shows that to get an effective representative sample of respondents is difficult as the respondents refused to get involved for reasons only known to them (Sekaran, 2003). Sekaran (2003) mentioned that a minimum of 10 percent response from the sample justifies the rational to start and perform the analysis. In this study, the business owner/managers were identified as the key informants. This

was considered the most appropriate approach as they are the best positioned personnel to have the broadest knowledge of the overall issues under investigation.

Based on the data in the Table 4.6, the majority of the respondents were male with a total of 186 respondents (68.38 percent), while female respondents accounted to 31.6 percent or 86 respondents from the total sample. According to Srinivasan, Woo, and Cooper, (1994), technology based companies were mostly dominated by men, but this study shows that women are now starting to embark in technology based companies that were previously monopolized by men.

The highest education was bachelor degree with 128 respondents or 47.1 percent. Others had a master degree (21 percent), diploma level (12.5 percent) and LCE (6.3 percent). The result portrays that those in the ICT and new technology segments are highly educated and they need technical and entrepreneurship skills to be part of the industry. The distribution of age of the respondents ranged from 25 to above 50. Table 4.6 also shows that most of the respondents fall in the age range of 31 to 40 with a total of 130 (47.79 percent) respondents. This is supported by Colombo and Delmastro's (2001) finding that new technology based companies were mainly dominated by young people.

90 respondents or 33.09 percent, mentioned that their SMEs have been established for more than 6 years and only 39 respondents or 14.34 mentioned their percent the SMEs have been established for less than 2 years. There were 67 respondents or to 24.63

percent where the SMEs have been established from 5 to 6 years and 76 respondents or 27.94 which have been established from 3 to 4 years.

34.93 percent of the SMEs have between 5 to 10 employees, and 18.4 percent have between 11 to 15 employees. It was also found that 16.91 percents or 46 SMEs in the study have less than 5 employees. However, about 16.18 percents or 44 SMEs have more than 21 employees while another 13.60 percents or 37 SMEs have between 16 to 20 employees.

In-terms of specific sectors, about 71.69 percents or 195 SMEs were involved in ICT software, 42 respondents or equivalent to 15.44 percents are in ICT hardware and 35 respondents or 12.87 percent are involved in ICT business process outsourcing.

Finally 149 or 54.78 percents of the respondents were managers, while 123 respondents or 45.22 percents were business owners. From these analyses it can be concluded that the majority of the respondents were from the ICT software, they were owner/managers and have sufficient knowledge to be in this innovative industry.

Table 4.6
Demographic Profile of SMEs Respondents.

Variable	Description	Frequency	Percent
Gender	Male	186	68.38
	Female	86	31.62
Education Level	PMR/LCE	17	6.25
	SPM /MCE	31	11.40
	Diploma	34	12.50
	Degree	128	47.06
	Master	57	20.96
	Doctorate	5	1.84
Age	30 years and below	67	4.63
	31 to 40years	130	47.79
	41 to 50years	61	22.43
	> 50 years	14	5.15
Length of Company Established	2 years and below	39	14.34
	3 to 4 years	76	27.94
	5 to 6 years	67	24.63
	> 6 years	90	33.09
No of Employees	< 5	46	16.91
	5 to 10	95	34.93
	11 to 15	50	18.38
	16 to 20	37	13.60
	> 21	44	16.18
MSC Company type	ICT Software	195	71.69
	ICT Hardware	42	15.44
	ICT BPO	35	12.87
Job Title	Business Owner	123	45.22
	Manager In Charge	149	54.78

4.3. VALIDITY TEST

The objective of the validity test is to find out whether the measuring tool does its job well. Validity test is useful to determine how accurate the tool measurement is. The more valid a tool is, the less the inaccuracy will be. This is to ensure that the collected data is reliable and can be used for further analysis. In this observation, the validity test was done by correlating (the extent to which two or more variables are associated with one another) each of the indicators with the total score. The result was then compared statistically with critical number of the r value of the correlation table. If the r-count is greater than r-table (r-count > r-table), the data is considered significant (valid), and the indicator is deserved to be used in the next analysis. And if the r-count is less than r-table (r-count < r-table), (from Pearson Product-Moment Correlation Coefficient), the data is considered invalid, and the indicator is not deserved to be used in the next analysis (Ghozali, 2008; Ghozali, 2005). The validity test result for each indicator variables is shown in Table 4.7.

Based on results in Table 4.7 and Table 4.8, it can be confirmed that all the questions used in the questionnaires are mostly valid. In other words, all the items in the questionnaires are valid and usable for the subsequent process because the r-count > r-table.

Table 4.7
Validity Test Questionnaires

Indicator	r-count	r-table	Result
Comp1	.419	0.119	Valid
Comp2	.579	0.119	Valid
Comp3	.316	0.119	Valid
Comp4	.462	0.119	Valid
Comp5	.392	0.119	Valid
Comp6	.386	0.119	Valid
Comp7	.492	0.119	Valid
Cust1	.616	0.119	Valid
Cust2	.445	0.119	Valid
Cust3	.588	0.119	Valid
Cust4	.422	0.119	Valid
Cust5	.574	0.119	Valid
Cust6	.551	0.119	Valid
InterF1	.458	0.119	Valid
InterF2	.441	0.119	Valid
InterF3	.595	0.119	Valid
InterF4	.447	0.119	Valid
InterF5	.473	0.119	Valid

Indicator	r-count	r-table	Result
Inno1	.600	0.119	Valid
Inno2	.567	0.119	Valid
Inno3	.570	0.119	Valid
Inno4	.601	0.119	Valid
Inno5	.641	0.119	Valid
Inno6	.490	0.119	Valid
Inno7	.397	0.119	Valid
Inno8	.455	0.119	Valid
BP1	.511	0.119	Valid
BP2	.483	0.119	Valid
BP3	.549	0.119	Valid
BP4	.547	0.119	Valid
BP5	.568	0.119	Valid

Table 4.8
Validity Test Variables

Variable	r-count	r-table	Result
Competitors Orientation -COMP	.621	0.119	Valid
Customer Orientation - CUST	.669	0.119	Valid
Inter-functional Coordination -INTERF	.638	0.119	Valid
Innovation - INNO	.742	0.119	Valid
Business Performance - BP	.559	0.119	Valid

4.4. RELIABILITY ANALYSIS RESULTS

Upon completing the validity test on the indicators, the reliability test was performed. The purpose for this test was to find out whether the data collecting means prove their validity, accuracy, stability or consistency level in revealing particular indications of a group of people though the test is done in different times (Ghozali, 2008; Nunnally, 1978). This test was done by using cronbach alpha. If the cronbach alpha value is above 0.7 (Ghozali, 2008; Nunnally & Bernstein, 1994), the questions will be admitted as reliable.

Table 4.9 shows the cronbach alpha value for the used all individual variables and the researcher found that all the values are above 0.7, that is 0.832, 0.779, 0.814, 0.799 and 0.808 respectively. This shows that all the variables possess high reliability, accuracy, stability or consistency.

Table 4.9
Summary of Reliability Test of Individual Variable

VARIABLES	INSTRUMENT SCALE	Cronbach's Alpha
Business Performance	BP1, BP2, BP3, BP4, BP5 - (5 items)	0.866
Innovation	INNO1, INNO2, INNO3, INNO4, INNO5, INNO6, INNO7, INNO8 - (8 items)	0.822
Competitors Orientation	COMP1, COMP2, COMP3, COMP4, COMP5, COMP6, COMP7 - (7 items)	0.745
Customer Orientation	CUST1, CUST2, CUST3, CUST4, CUST5, CUST6 - (6 items)	0.811
Inter-functional Coordination	INTERF1, INTERF2, INTERF3, INTERF4, INTER5 -(5items)	0.732

4.5 MEASUREMENT OF MODEL USING CONFIRMATORY FACTOR ANALYSIS (CFA)

In this study, confirmatory factor analysis is accomplished by using exogenous and endogenous variables. The confirmatory analysis was performed for the following section;

4.5.1. Confirmatory Test of Competitors Orientation (COMP) Constructs.

The confirmatory analysis was perform for testing whether the latent construct of exogenous competitor orientation is a one-dimensional construct defines by observed variable COMP1 to COMP7. Graphically, latent construct of competitors orientation (COMP) can be illustrated as in Figure 4.1.

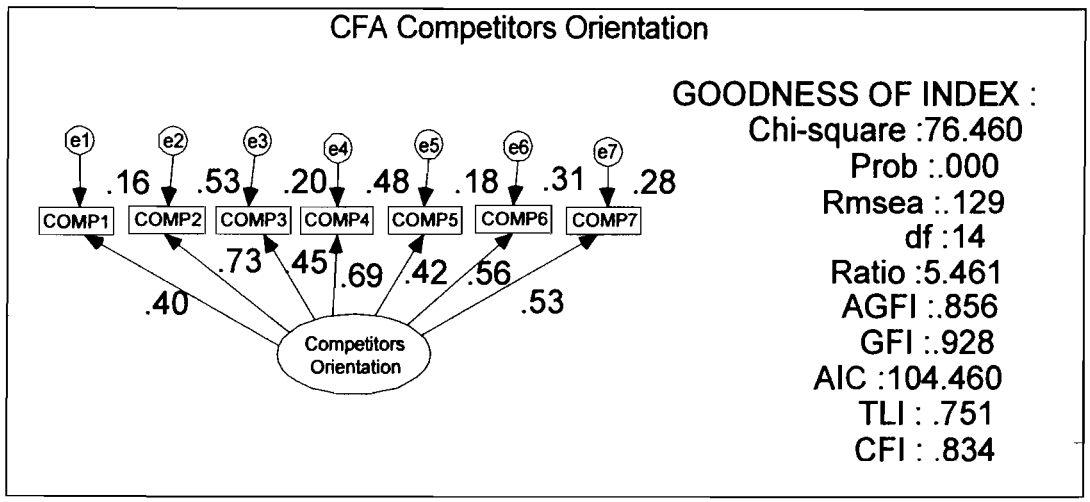

Figure 4.1.
Confirmatory Test of Competitors Orientation (COMP) construct

Referring to Figure 4.1 and Table 4.10, the researcher obtained a reliability value at 0.745 which measures the latent construct of competitors orientation (COMP). The standardized regression weight estimate for all indicators has good factor loading, where each items load more than 0.5 (except COMP1,'share information'; COMP3, 'competitive advantage'; and COMP5, 'competitors will response to the competitive move'), which indicated a good regression value (Hair et al., 1995).

Table 4.10
Summary Result of Confirmatory Test of Competitors Orientation (COMP)

Reliability (Cronbach Alpha)			0.745
Regression Weight			**Estimates**
COMP1	<---	COMP	0.397
COMP2	<---	COMP	0.726
COMP3	<---	COMP	0.449
COMP4	<---	COMP	0.694
COMP5	<---	COMP	0.422
COMP6	<---	COMP	0.557
COMP7	<---	COMP	0.529

Goodness of fit Measures	Cut off Value	Result	Criteria
Chi Square (χ^2)	Better Smaller	76.460	Good fit
P-Probability	$p > 0.05$	0.000	Poor fit
RMSEA	≤ 0.08	0.129	Poor fit
DF	> 0.00	14	Good fit
Ratio	< 2.0	5.461	Poor fit
AGFI	≥ 0.90	0.856	Poor fit
GFI	≥ 0.90	0.928	Good fit
AIC	Better Smaller	104.460	Good fit
TLI	≥ 0.90	0.751	Poor fit
CFI	≥ 0.90	0.834	Poor fit

Keys :	Modification	MI Changes
COMP – Competitors Orientation	COMP3-COMP5	13.656
COMP1 - Share Information	COMP4-COMP1	7.150
COMP2 - Analyze the product offer by competitors		
COMP3 - as competitive advantage		
COMP4 - Competitors analysis		
COMP5 - competitors will response to our competitive move		
COMP6 - competitive action		
COMP7 - risk takers		

Goodness of fit index base on result are chi-square value= 76.460 with DF= 14 and GFI=0.928. The model shows a good result because it has a DF (degree of freedom) that has fulfilled the recommended fit value over 0.00 and the GFI (Goodness Fit of Index) must be over 0.90. The researcher obtained the probability result at p = 0.000 and RMSEA (Roots Mean Square of Approximation) at 0.129, which does not fit, because the p value must be over 0.05 (p >0.05) and the RMSEA recommended value must be less than 0.08 (RMSEA < 0.08). Ratio was high at 5.461, which does not fit because the recommended value must be less than 2 (Ratio < 2). AGFI (Adjusted Good of Fit Index), TLI (Tucker Lewis of Coefficient) and CFI (Comparative of Fix Index) values are less than 0.90. The recommended value should be higher than 0.90, and therefore the model must be modified (Ghozali, 2008; Kamariah, 2007; Palaniappa, 2005; Byrne, 2001; Hair, Anderson, Tatham &Black, 1995).

The modification was performed by observing the regression weight on the highest modification index (MI) value. Modification was done by removing indicators that showed cross loading between them. These indicators were then dropped from the analysis as it was not one-dimensional.

Based on Table 4.10, the modification index data, indicator COMP3, 'competitive advantage' and COMP4, 'competitors analysis' has cross-loading with COMP5 that is 'competitors will response to our competitive move' and COMP1, 'share information'. In other words, indicator COMP3 and COMP4 not only measures latent construct of competitors orientation (COMP), it also measures the indicator COMP5 and COMP1.

Hence, COMP3 and COMP4 are invalid because it is not one-dimensional and must be dropped in the upcoming analysis.

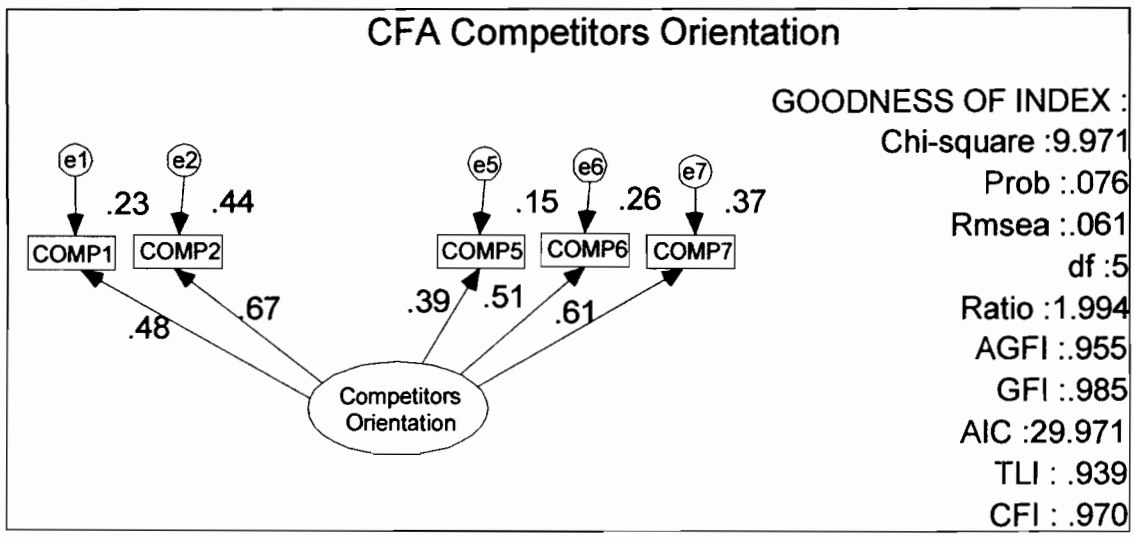

Figure 4.2
After Modification-Confirmatory Test of Competitors Orientation (COMP) construct

Modifications were carried out after the first phase of analysis and the results were shown in Figure 4.2 and Table 4.11.

Goodness of fit index base on result showed chi-square value was reduced from 76.460 to 9.971 and the degree of freedom (DF) value was reduced from 14 to 5 and probability (p) value from 0.000 to 0.076, the model was fit because the standard acceptable requirement probability must be > 0.05 (p > 0.05). The result was acceptable because ratio was reduced from 5.461 to 1.994, more than standard acceptable requirement ratio < 2.000 (Ratio < 2.000). The comparative fit index (CFI) value increased from 0.834 to 0.970, TLI increased from 0.751 to 0.939 and AGFI increased from 0.856 to 0.955, which certainly satisfies the criterion that the CFI value, TLI value

and AGFI value more than standard acceptable requirement at higher than 0.90. Also, the root mean square error approximation (RMSEA) value was reduced from 0.129 to 0.061, which was less than standard acceptable requirement. The acceptance value of RMSEA must be < 0.080 (RMSEA < 0.080). Finally the model was considered fit to the data, and therefore it does not need any further modification (Byrne, 2001; Kamariah, 2007).

Table 4.11
After Modification -Summary Result of Confirmatory Test of Competitors Orientation (COMP)

Reliability (Cronbach Alpha) 0.673

Regression Weight			Estimates
COMP1	<---	COMP	0.480
COMP2	<---	COMP	0.669
COMP5	<---	COMP	0.390
COMP6	<---	COMP	0.509
COMP7	<---	COMP	0.610

Goodness of fit Measures

	Cut off Value	Before	After	Criteria
Chi Square (χ^2)	Better Smaller	76.460	9.971	Good fit
P-Probability	$p > 0.05$	0.000	0.076	Good fit
RMSEA	≤ 0.08	0.129	0.061	Good fit
DF	> 0.00	14	5	Good fit
Ratio	< 2.0	5.461	1.994	Good fit
AGFI	≥ 0.90	0.856	0.955	Good fit
GFI	≥ 0.90	0.928	0.985	Good fit
AIC	Better Smaller	104.460	29.971	Good fit
TLI	≥ 0.90	0.751	0.939	Good fit
CFI	≥ 0.90	0.834	0.970	Good fit

Keys :

COMP – Competitors Orientation

COMP1 – Share Information
COMP2 - Analyze the product offer by competitors
COMP3 - competitive advantage
COMP4 - Competitors analysis
COMP5 - competitors will response to our competitive move
COMP6 - competitive action
COMP7 - risk takers

4.5.2. Confirmatory Test of Customer Orientation (CUST) Constructs.

Graphically latent construct of customer orientation (CUST) can be illustrated as in Figure 4.3.

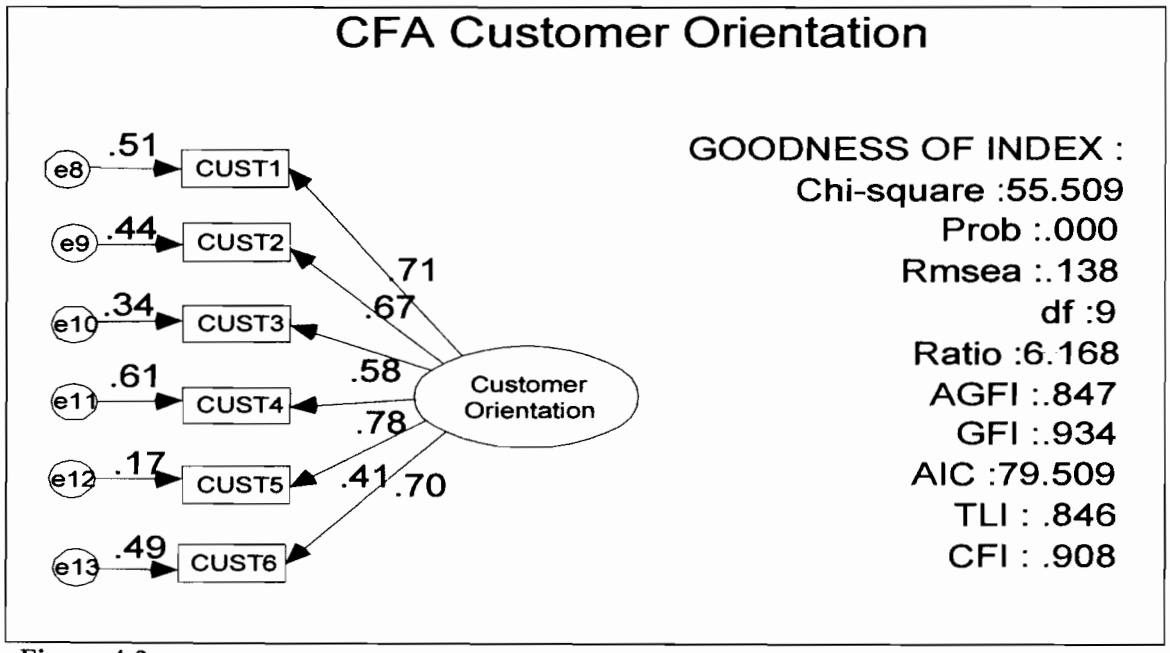

Figure 4.3
Confirmatory Test of Customer Orientation (CUST) construct

According to the Figure 4.3 and Table 4.12, a reliability value at 0.811 was obtained which measures the latent construct of customer orientation (CUST). The standardized regression weight estimate for all indicators has good factor loading where each items load more than 0.5 (except CUST5 that is 'level of commitment orientation'), which indicated a good regression value. The goodness of fit index showed chi-square value = 55.509 with DF (Degree of Freedom) = 9, GFI (Goodness Fit of Index) = 0.934 and CFI (Comparative of Fix Index) =0.908. It shows a good result because it has degree of

freedom (DF) that has fulfilled the recommended fit value over 0.00, the GFI and CFI must be over 0.90.

Table 4.12
Summary Result of Confirmatory Test of Customer Orientation (CUST)

Reliability (Cronbach Alpha)			0.811
Regression Weight			**Estimates**
CUST1	<---	CUST	0.715
CUST2	<---	CUST	0.666
CUST3	<---	CUST	0.580
CUST4	<---	CUST	0.784
CUST5	<---	CUST	0.415
CUST6	<---	CUST	0.699

Goodness of fit Measures	Cut of Value	Result	Criteria
Chi Square (χ^2)	Better Smaller	55.509	Good fit
P-Probability	$p > 0.05$	0.000	Poor fit
RMSEA	≤ 0.08	0.138	Poor fit
DF	> 0.00	9	Good fit
Ratio	< 2.0	6.168	Poor fit
AGFI	≥ 0.90	0.847	Poor fit
GFI	≥ 0.90	0.934	Good fit
AIC	Better Smaller	79.509	Good fit
TLI	≥ 0.90	0.846	Poor fit
CFI	≥ 0.90	0.908	Good fit

Keys :
CUST – Customer Orientation
CUST1 - Business Strategy
CUST2 - Customer Satisfaction
CUST3 -Business Objective
CUST4 – Understanding customer need
CUST5 - Level of commitment orientation
CUST6 - sales services

Modification	MI Changes
CUST2-CUST3	11.070
CUST3-CUST2	8.787

The probability result obtained at p = 0.000 and RMSEA (Root Mean Square Error Approximation) at 0.138 does not fit to the available sample because the probability value must be over 0.05 (p >0.05) and RMSEA must be less than 0.08 (RMSEA < 0.08). Ratio was high at 6.168, the recommended value must be less than 2 (Ratio < 2.000).

AGFI (Adjusted Good of Fit Index) and TLI (Tucker Lewis of Coefficient) were less than 0.90, the model is not fit because the recommended value should be higher than 0.90. Therefore, the model must be repaired and modified (Ghozali, 2008; Palaniappa, 2005; Kamariah, 2007; Byrne, 2001; Hair et al., 1995).

The modification was performed by observing the regression weight on the highest modification index (MI) value. Modification was done by removing indicators that showed cross loading between them. These indicators were then dropped from the analysis as it was not one-dimensional.

Based on Table 4.12, referring to modification index data value, indicator CUST3, 'business objective' and CUST2, 'customer satisfaction' has cross-loading with CUST2, 'customer satisfaction' and CUST3, 'business objective'. In other words indicator CUST3 and CUST2 not only measures latent construct of customer orientation (CUST), it also measures the indicator CUST2 and CUST3. Hence CUST3 and CUST2 are invalid because it is not one-dimensional and must be dropped in the upcoming analysis.

Modifications were done after the first phase of analysis and results were shown in Figure 4.4 and Table 4.13.

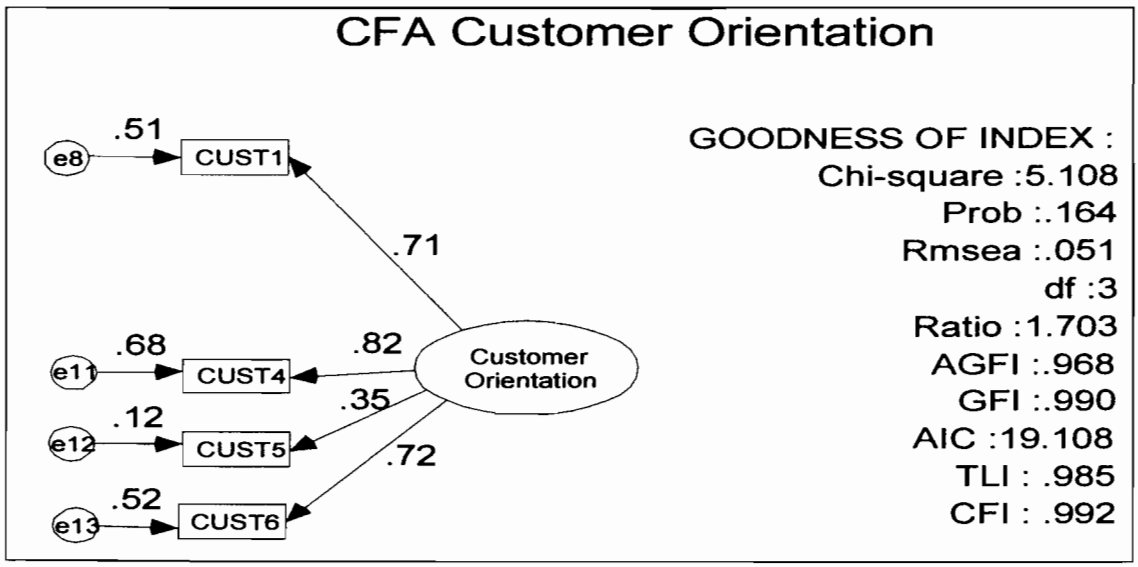

Figure 4.4
After Modification-Confirmatory Test of Customer Orientation (CUST) construct

Goodness of fit index based on the result showed chi-square value was reduced from 55.509 to 5.108, AIC was reduced from 79.509 to 19.108, and probability (p) increased from 0.000 to 0.164. The model is fit because the recommended fit value at smaller chi square, smaller AIC value and probability was higher than 0.05 ($p > 0.05$). RMSEA was reduced from 0.138 to 0.051, the model was fit because it fulfilled the recommended value less than 0.08 ($RMSEA < 0.08$). Degree of freedom (DF) was reduced from 9 to 3, the model was fit because the recommended value of DF higher than 0.000 ($DF > 0.000$). Ratio was reduced from 6.168 to 1.703, showing the value was under 2 and within the recommended fit value ($Ratio < 2.000$).

The AGFI value increased from 0.847 to 0.968 and TLI value increased from 0.846 to 0.985, showing that the model was fit because it fulfilled the recommended value of AGFI, TLI and CFI values should be higher than 0.90 (Ghozali, 2008; Palaniappa, 2005; Kamariah, 2007; Byrne, 2001; Hair et al. , 1995).

The model was considered fit to the data, and therefore it does not need any further modification (Kamariah, 2007 ; Byrne, 2001).

Table 4.13
After Modification-Summary Result of Confirmatory Test of Customer Orientation (CUST)

Reliability (Cronbach Alpha) 0.804

Regression Weight			Estimates
CUST1	<---	CUST	0.714
CUST4	<---	CUST	0.822
CUST5	<---	CUST	0.348
CUST6	<---	CUST	0.724

Goodness of fit Measures

	Cut of Value	Before	After	Criteria
Chi Square (χ^2)	Better Smaller	55.509	5.108	Good fit
P-Probability	$p > 0.05$	0.000	0.164	Good fit
RMSEA	≤ 0.08	0.138	0.051	Good fit
DF	> 0.00	9	3	Good fit
Ratio	< 2.0	6.168	1.703	Good fit
AGFI	≥ 0.90	0.847	0.968	Good fit
GFI	≥ 0.90	0.934	0.990	Good fit
AIC	Better Smaller	79.509	19.108	Good fit
TLI	≥ 0.90	0.846	0.985	Good fit
CFI	≥ 0.90	0.908	0.992	Good fit

Keys :

CUST – Customer Orientation
CUST1 - Business Strategy
CUST2 - Customer Satisfaction
CUST3 - Business Objective
CUST4 - Understanding customer need
CUST5 - Level of commitment orientation
CUST6 - sales services

4.5.3. Confirmatory Test of Inter-functional Coordination (INTERF) Construct.

The latent construct of inter-functional coordination (INTERF) was illustrated in Figure 4.5.

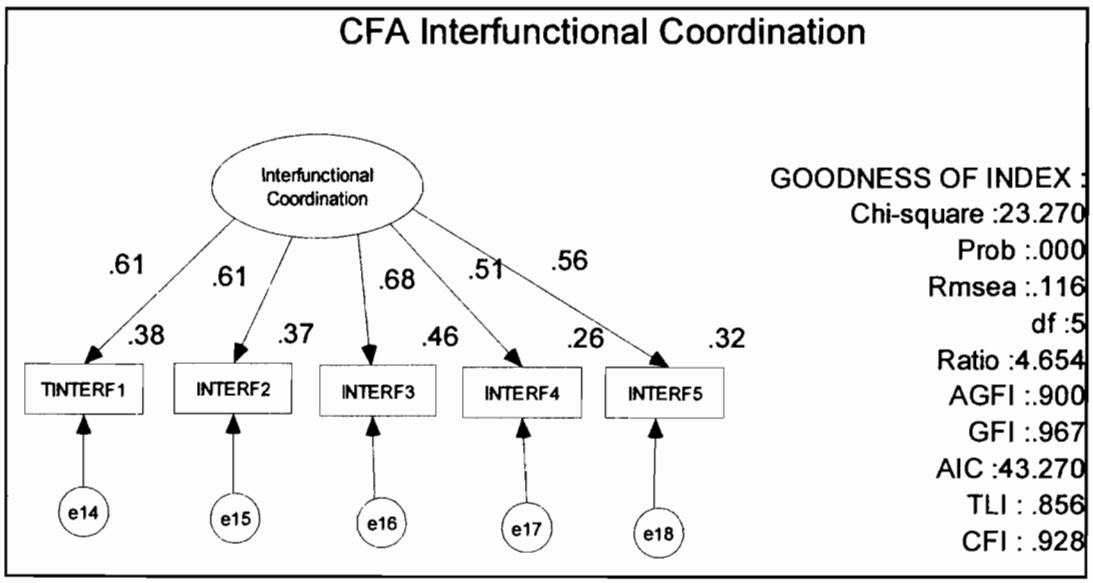

Figure 4.5
Confirmatory Test of Inter-functional Coordination (INTERF) construct

Based on Figure 4.5 and Table 4.14, a reliability value at 0.732 was obtained which measures the latent construct of inter-functional coordination (INTERF). The standardized regression weight value for all indicators has good factors loading, where each items load more than 0.5 which indicates a good regression value. Goodness of fit index showed chi-square value= 23.270 with DF (Degree of Freedom) = 5, AGFI (Adjusted Good of Fit Index) =0.900, GFI (Goodness of Fit Index) =0.967 and CFI (Comparative of Fix Index) =0.928. It showed a good result because it has a degree of freedom (DF) that has fulfilled the recommended fit value of over 0.00 and the AGFI, GFI and CFI recommended fit value must be over 0.90.

Table 4.14
Summary Result of Confirmatory Test of Inter-functional Coordination (INTERF)

Reliability (Cronbach Alpha)			0.732
Regression Weight			**Estimates**
TINTERF1	<---	INTERF	0.613
INTERF2	<---	INTERF	0.610
INTERF3	<---	INTERF	0.678
INTERF4	<---	INTERF	0.514
INTERF5	<---	INTERF	0.565

Goodness of fit Measures	Cut of Value	Result	Criteria
Chi Square (χ^2)	Better Smaller	23.270	Good fit
P-Probability	$p > 0.05$	0.000	Poor fit
RMSEA	≤ 0.08	0.116	Poor fit
DF	> 0.00	5	Good fit
Ratio	< 2.0	4.654	Poor fit
AGFI	≥ 0.90	0.900	Good fit
GFI	≥ 0.90	0.967	Good fit
AIC	Better Smaller	43.270	Good fit
TLI	≥ 0.90	0.856	Poor fit
CFI	≥ 0.90	0.928	Good fit

Keys :
INTERF – Inter-Functional Coordination
INTERF1 - Top Management
INTERF2 - Freely Communication
INTERF3 - Business Function and Integration
INTERF4 - Creating Customer value
INTERF5 - Share Resources with others business units

Modification	MI Changes
INTERF4-INTERF2	4.723

Then again, looking for good fit criteria, the researcher obtained the probability result at $p = 0.000$ and RMSEA (Root Mean Square Error Approximation) is high at 0.116 which does not fit because the probability must be over 0.05 ($p > 0.05$) and RMSEA recommended fit value must be less than 0.08 (RMSEA < 0.08). Ratio is high at 4.654, was higher than the recommended value that must be less than 2. TLI (Tucker Lewis of Coefficient) value were less than at 0.90. The recommended value was higher than 0.90, and therefore the model must be repaired and modified. (Ghozali, 2008; Kamariah, 2007; Byrne, 2001; Hair et al., 1995).

The modification was performed by observing the regression weight on the highest modification index (MI) value. Modification was done by removing indicators that showed cross loading between them. These indicators were then dropped from the analysis as it was not one-dimensional.

Based from values in Table 4.14, the modification index data, indicator INTERF4 that is 'creating customer value' has cross-loading with INTERF2, 'freely communication'. In other words, indicator INTERF4 not only measures latent construct of inter-functional coordination (INTERF), it also measures the indicator INTERF2. Hence INTERF4 is invalid because it is not one-dimensional and must be dropped in the upcoming analysis.

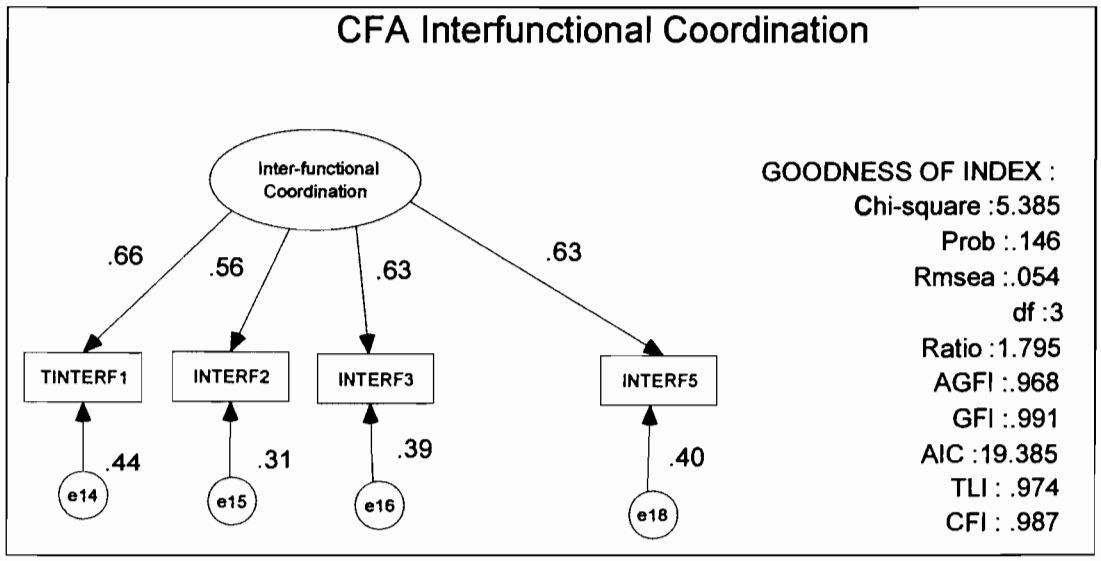

Figure 4.6.
After Modification-Confirmatory Test of Inter-functional Coordination (INTERF) construct

Table 4.15

After Modification-Summary Result of Confirmatory Test of Inter-functional Coordination (INTERF)

Reliability (Cronbach Alpha) 0.714

Regression Weight			Estimates
TINTERF1	<---	INTERF	0.660
INTERF2	<---	INTERF	0.558
INTERF3	<---	INTERF	0.627
INTERF5	<---	INTERF	0.630

Goodness of fit Measures

	Cut of Value	Before	After	Criteria
Chi Square (χ^2)	Better Smaller	23.270	5.385	Good fit
P-Probability	$p > 0.05$	0.000	0.146	Good fit
RMSEA	≤ 0.08	0.116	0.054	Good fit
DF	> 0.00	5	3	Good fit
Ratio	< 2.0	4.654	1.795	Good fit
AGFI	≥ 0.90	0.900	0.968	Good fit
GFI	≥ 0.90	0.967	0.991	Good fit
AIC	Better Smaller	43.270	19.385	Good fit
TLI	≥ 0.90	0.856	0.974	Good fit
CFI	≥ 0.90	0.928	0.987	Good fit

Keys :

INTERF – Inter-Functional Coordination

TINTERF1 - Top Management

INTERF2 - Freely Communication

INTERF3 - Business Function and Integration

INTERF4 - Creating Customer value

INTERF5 - Share Resources with others business units

Modifications were done and the results were shown in Figure 4.6 and Table 4.15.

Chi square (χ^2) value was reduced from 23.270 to 5.385, AIC value was reduced from 43.270 to 19.385, and probability (p) value increased from 0.000 to 0.146. This shows that the model were fit because it is within the recommended fit value, at smaller chi square and AIC value and probability value higher than 0.05 ($p > 0.05$). RMSEA was reduced from 0.116 to 0.054 showing that the model is fit because the recommended value for RMSEA less than 0.08 (RMSEA < 0.08). Degree of freedom (DF) value was

reduced from 5 to 3, showing that the model is fit because the significance level of DF is higher than 0.000 (DF > 0.00). Ratio was reduced from 4.654 to 1.795 showing that the model is fit because the recommended value for ratio is under 2 (Ratio < 2.000). The TLI value increased from 0.856 to 0.974. All the values show that the model is fit because the recommended values for TLI are higher than 0.90 (Kamariah, 2007; Byrne, 2001; Hair et al., 1995). Finally, the model was considered fit to the data, and hence it does not need any further modification.

4.5.4. Confirmatory Test of Innovation (INNO) Construct.

The latent construct of innovation (INNO) can be illustrated in Figure 4.7 below.

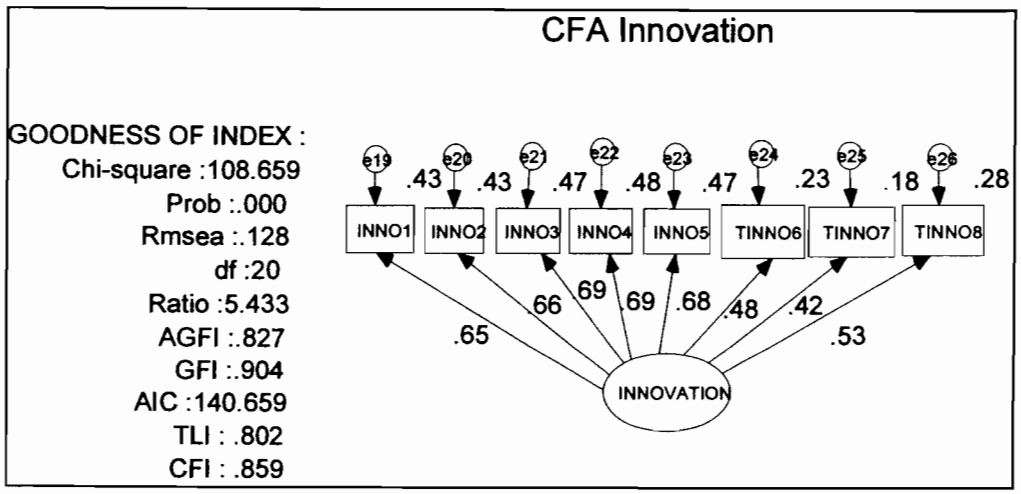

Figure 4.7
Confirmatory Test of Innovation (INNO) construct.

Table 4.16
Summary Result of Confirmatory Test of Innovation (INNO)

Reliability (Cronbach Alpha)			0.822
Regression Weight			Estimates
INNO1	<---	INNO	0.655
INNO2	<---	INNO	0.657
INNO3	<---	INNO	0.686
INNO4	<---	INNO	0.694
INNO5	<---	INNO	0.684
TINNO6	<---	INNO	0.477
TINNO7	<---	INNO	0.419
TINNO8	<---	INNO	0.533

Goodness of fit Measures	Cut of Value	Result	Criteria
Chi Square (χ^2)	Better Smaller	108.659	Good fit
P-Probability	$p > 0.05$	0.000	Poor fit
RMSEA	≤ 0.08	0.128	Poor fit
DF	> 0.00	20	Good fit
Ratio	< 2.0	5.433	Poor fit
AGFI	≥ 0.90	0.827	Poor fit
GFI	≥ 0.90	0.904	Good fit
AIC	Better Smaller	140.659	Good fit
TLI	≥ 0.90	0.802	Poor fit
CFI	≥ 0.90	0.859	Poor fit

Keys :
INNO - Innovation
INNO1 - develop new market
INNO2 - improved the product services
INNO3 - improved method
INNO4 - developed a news method
INNO5 - established new market
INNO6 - Innovation strategy
INNO7 - Competitor provided you the innovative idea
INNO8 - customer has provided you the innovative idea

Modification	MI Changes
INNO7-INNO8	22.510
INNO2-INNO1	8.958
INNO5-INNO6	5.725

Based on Figure 4.7 and Table 4.16, the researcher obtained a reliability value at 0.822 which measures the latent construct of innovation (INNO). The standardized regression weight value for all indicators is higher than 0.5 (except TINNO6, 'innovation strategy and TINNO7, 'competitor provided you the innovative idea), which indicates a good regression value. The chi-square value of 108.659 with DF (Degree of Freedom) of 20 and GFI (Goodness Fit of Index) of 0.904. The model showed good result because it has degree of freedom (DF) that has fulfilled the recommended fit value over 0.00, and

the GFI value must be over 0.90. Then again, looking for good fit criteria, the researcher obtained the probability result at p = 0.000 and RMSEA (Root Mean Square Error Approximation) is high at 0.128 which does not fit to the available sample because the probability must be over 0.05 (p>0.05) and RMSEA must be less than 0.08 (RMSEA < 0.08). Ratio at 5.433 higher than the recommended value that must be less than 2 (Ratio < 2.000). AGFI (Adjusted Good of Fit Index), TLI (Tucker Lewis of Coefficient) and CFI (Comparative of Fix Index) were less than 0.90. The recommended value was higher than 0.90, and therefore, the model must be repaired and modified (Ghozali, 2008; Kamariah, 2007; Byrne, 2001; Hair et al. , 1995).

The modification was performed by observing the regression weight on the highest modification index (MI) value. Modification was done by removing indicators that showed cross loading between them. These indicators were then dropped from the analysis as it was not one-dimensional.

Based from value in Table 4.16, referring to the modification index value, indicators INNO7 that is 'competitors provided you the innovative idea'; INNO 2, 'improved the product services'; and INNO5, 'established new market' has cross-loading with INNO8, 'customer has provided you the innovative idea'; INNO1, 'develop new market'; and INNO6, 'innovation strategy'. In other words, indicator INNO7, INNO 2 and INNO5 not only measures latent construct of innovation (INNO), it also measures the indicator INNO8, INNO1 and INNO6. Hence INNO7, INNO 2 and INNO5 are invalid because it is not one-dimensional and must be dropped in the upcoming analysis.

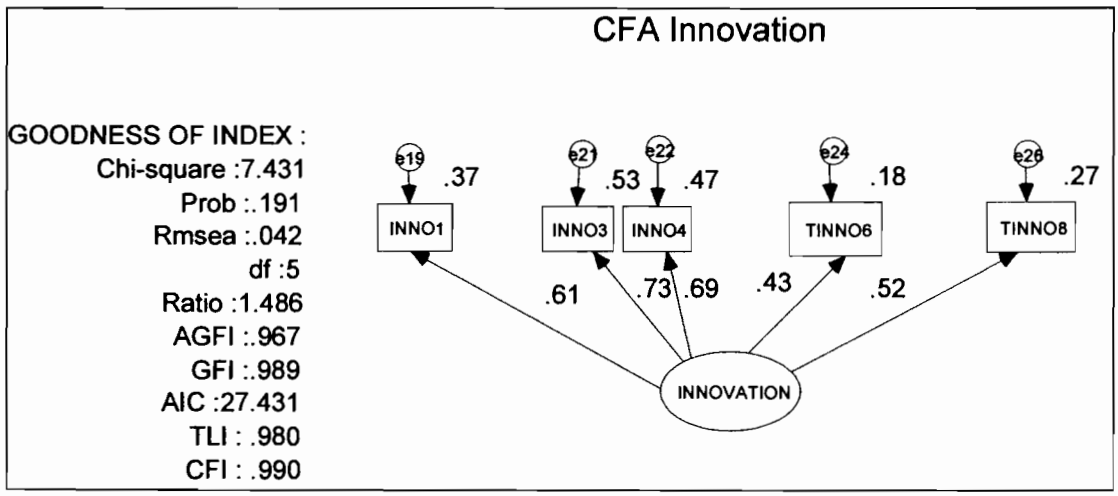

Figure 4.8
After Modification-Confirmatory Test of Innovation (INNO) construct

The modification were done and the result as shown in Figure 4.8 and Table 4.17.

Chi Square value was reduced from 108.659 to 7.431, AIC value was reduced from 140.659 to 27.431, and probability (p) value increased from 0.000 to 0.191. The model is fit because it is within the recommended fit value, at a smaller chi square, smaller AIC , and probability value higher than 0.05 (p >0.05). RMSEA was reduced from 0.128 to 0.042, showing that the model is fit because it fulfilled the recommended value less than 0.08 (RMSEA < 0.08). Degree of freedom was (DF) reduced from 20 to 5, the model is fit because it fulfilled the recommended value higher than 0.000 (DF > 0.000). Ratio was reduced from 5.433 to 1.486, and thus falls within recommended fit value under 2 (Ratio <2.000).

Table 4.17

After Modification-Summary Result of Confirmatory Test of Innovation (INNO)

Reliability (Cronbach Alpha)			0.697
Regression Weight			**Estimates**
INNO1	<--	INNO	0.607
INNO3	<--	INNO	0.728
INNO4	<--	INNO	0.686
TINNO6	<--	INNO	0.427
TINNO8	<--	INNO	0.517

Goodness of fit Measures	Cut of Value	Before	After	Criteria
Chi Square (χ^2)	Better Smaller	108.659	7.431	Good fit
P-Probability	$p > 0.05$	0.000	0.191	Good fit
RMSEA	≤ 0.08	0.128	0.042	Good fit
DF	> 0.00	20	5	Good fit
Ratio	< 2.0	5.433	1.486	Good fit
AGFI	≥ 0.90	0.827	0.967	Good fit
GFI	≥ 0.90	0.943	0.989	Good fit
AIC	Better Smaller	140.659	27.431	Good fit
TLI	≥ 0.90	0.802	0.980	Good fit
CFI	≥ 0.90	0.859	0.990	Good fit

Keys :

INNO – Business Innovation
INNO1 - develop new market
INNO2 - improved the product services
INNO3 - improved method
INNO4 - developed a news method
INNO5 - established new market
TINNO6 – innovation strategy
TINNO7 - Competitor provided you the innovative idea
TINNO8 - customer has provided you the innovative idea

The AGFI value increased from 0.827 to 0.967, TLI value increased from 0.802 to 0.980, and CFI value increased from 0.859 to 0.990. All the values are showing that the model is fit because the recommended value for AGFI, TLI and CFI are higher than 0.90 (Ghozali, 2008; Kamariah, 2007; Byrne, 200; Hair et al. , 1995).

Finally the model was considered fit and hence it did not need any further modification (Byrne, 2001).

4.5.5. Confirmatory Test of Business Performance (BP) Construct

The latent construct of business performance (BP) was illustrated in Figure 4.9.

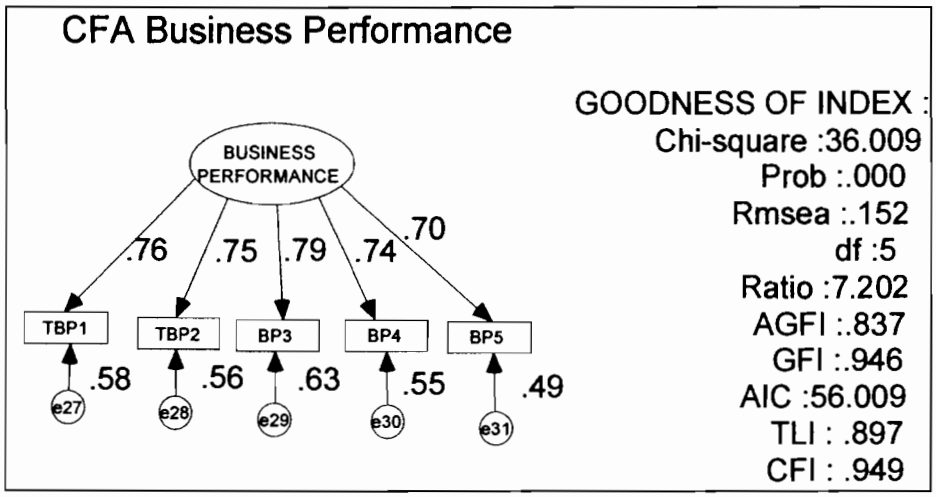

Figure 4.9
Confirmatory Test of Business Performance (BP)

Based on Figure 4.9 and Table 4.18, the researcher obtained a reliability value at 0.866 (higher than 0.70) which measures the latent construct of business performance (BP). The standardized regression weight value for all indicators is higher than 0.50, which indicates a good regression value. The chi-square value of 36.009 with DF (Degree of Freedom) =5, GFI (Goodness Fit of Index) =0.946, and CFI (Comparative of Fix Index) =0.949. It shows good result because it has degree of freedom (DF) that has fulfilled the recommended fit value over 0.00 (DF > 0.00) , GFI and CFI value must be over 0.90.

Table 4.18

Summary Result of Confirmatory Test of Business Performance (BP)

Reliability (Cronbach Alpha)			0.866
Regression Weight			**Estimates**
TBP1	<---	BP	0.764
TBP2	<---	BP	0.751
BP3	<---	BP	0.791
BP4	<---	BP	0.741
BP5	<---	BP	0.700

Goodness of fit Measures	Cut of Value	Result	Criteria
Chi Square (χ^2)	Better Smaller	36.009	Good fit
P-Probability	$p > 0.05$	0.000	Poor fit
RMSEA	≤ 0.08	0.152	Poor fit
DF	> 0.00	5	Good fit
Ratio	< 2.0	7.202	Poor fit
AGFI	≥ 0.90	0.837	Poor fit
GFI	≥ 0.90	0.946	Good fit
AIC	Better Smaller	56.009	Good fit
TLI	≥ 0.90	0.897	Poor fit
CFI	≥ 0.90	0.949	Good fit

Modification	MI Changes
TBP2-TBP1	9.200

Keys :
BP – Business Performance
TBP1 - Gross Profit (before tax)
TBP2 - Return of Asset (ROA)
BP3 - Profitability
BP4 - Growth
BP5 - Overall business success

Then again, looking for good fit criteria, the researcher obtained the probability result at p= 0.000 and RMSEA (Root Mean Square Error Approximation) is high at 0.152 which does not fit because the probability must be over 0.05 ($p > 0.05$) and RMSEA must be less than 0.08 ($RMSEA < 0.08$). Ratio is high at 7.202, and the recommended value must be less than 2 ($Ratio < 2.000$). TLI (Tucker Lewis of Coefficient) =0.897 and AGFI (Adjusted Good of Fit Index) is low at 0.837, less than the recommended value at 0.90 (TLI and AGFI > 0.90). Therefore the model must be modified (Ghozali, 2008; Kamariah, 2007; Byrne, 2001 ; Hair et al., 1995).

The modification was performed by observing the regression weight on the highest modification index (MI) value. Modification was done by removing indicators that showed cross loading between them. These indicators were then dropped from the analysis as it was not one-dimensional.

Based from value in Table 4.18, the modification index value, indicator TBP2 that is 'return of asset', has cross-loading with TBP1, 'gross profit'. In other words, indicator TBP2 not only measures latent construct of business performance (BP), it also measures the indicator TBP1, hence TBP2 is invalid because it is not one-dimensional and must be dropped in the upcoming analysis.

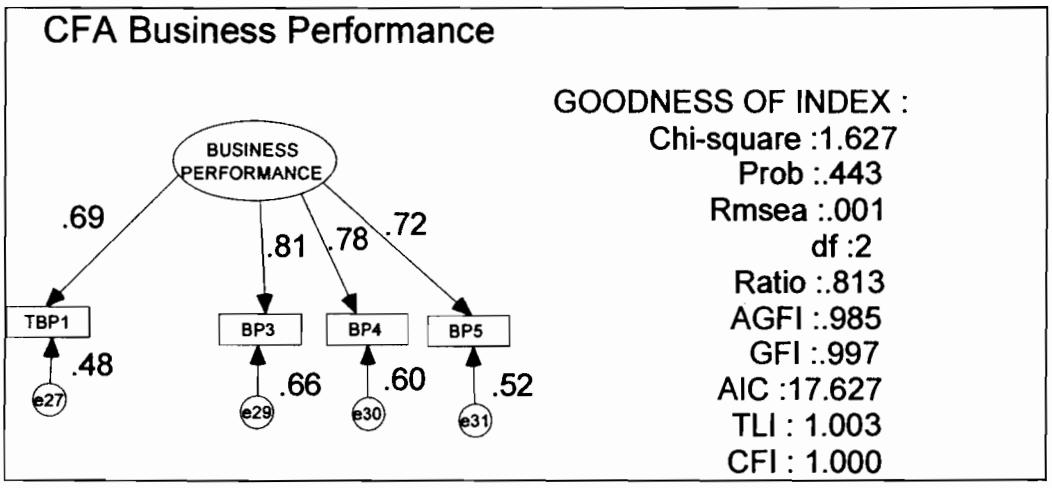

Figure 4.10.
After Modification-Confirmatory Test of Business Performance (BP) construct

The modifications were done and the results were shown in Figure 4.10 and Table 4.19. Chi Square value was reduced from 36.009 to 1.627, AIC value was reduced from 56.009 to 17.627, and probability (p) value increased from 0.000 to 0.443. The model is fit

because it is within the recommended fit value at smaller chi square , smaller AIC and probability value higher than 0.05 (p >0.05).

Table 4.19
After Modification- Summary Result of Confirmatory Test of Business Performance (BP)

Reliability (Cronbach Alpha)			0.836
Regression Weight			Estimates
TBP1	<---	BP	0.693
BP3	<---	BP	0.810
BP4	<---	BP	0.777
BP5	<---	BP	0.722

Goodness of fit Measures	Cut of Value	Before	After	Criteria
Chi Square (χ^2)	Better Smaller	36.009	1.627	Good fit
P-Probability	$p > 0.05$	0.000	0.443	Good fit
RMSEA	≤ 0.08	0.152	0.001	Good fit
DF	> 0.00	5	2	Good fit
Ratio	< 2.0	7.202	0.813	Good fit
AGFI	≥ 0.90	0.837	0.985	Good fit
GFI	≥ 0.90	0.946	0.997	Good fit
AIC	Better Smaller	56.009	17.627	Good fit
TLI	≥ 0.90	0.897	1.003	Good fit
CFI	≥ 0.90	0.949	1.000	Good fit

Keys :
BP – Business Performance
TBP1 - Gross Profit (before tax)
TBP2 - Return of Asset (ROA)
BP3-Profitability
BP4 - Growth
BP5 - Overall business success

RMSEA was reduced from 0.152 to 0.001, showing that the model is fit because it fulfilled the recommended value less than 0.08 (RMSEA < 0.08). Degree of freedom (DF) was reduced from 5 to 2, and the model was fit because the recommended value for DF was higher than 0.000 (DF > 0.000). Ratio was reduced from 7.202 to 0.813, within recommended fit value at less than 2.000 (Ratio < 2.000). The AGFI and TLI showing the model is fit because the recommended value are higher than 0.90 (Ghozali, 2008; Kamariah, 2007; Palaniappa, 2005; Byrne, 2001 ; Hair et al. , 1995).

Therefore, based on the overall result, the model is considered fit, and hence it does not need any further modification. (Ghozali, 2008; Kamariah, 2007).

4.5.6. Confirmatory Test of Exogenous Market Orientation (MO) construct.

The latent construct of exogenous market orientation (MO) can be illustrated in Figure 4.11.

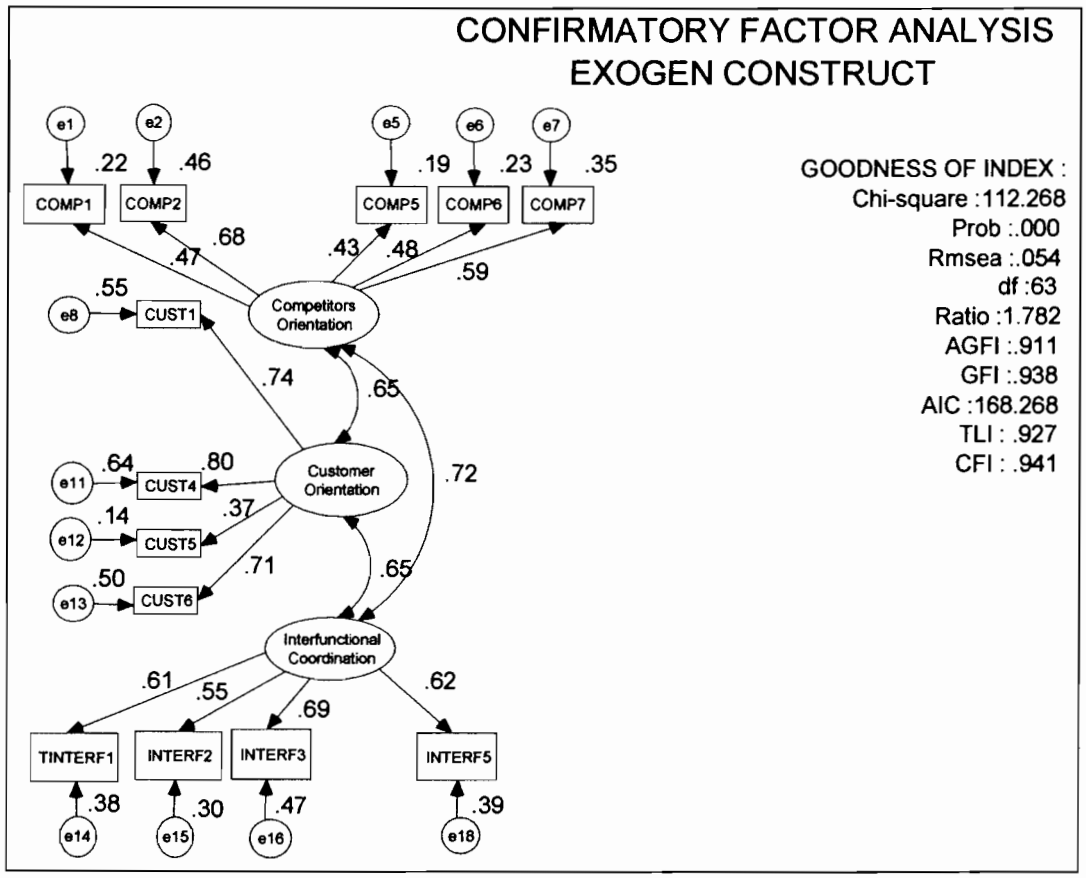

Figure 4.11
Confirmatory Test of Exogenous Market Orientation (MO) construct

Based on Figure 4.11 and Table 4.20, the researcher obtained the standardized regression weight value for all indicators that was higher than 0.50 (except COMP1 that is 'share information'; COMP5 that is 'competitive advantage'; COMP6, 'competitive action'; and CUST5 that is ' level of commitment orientation'), which indicates a good regression value.

Goodness of fit index based on the result showed chi-square value= 112.268 with DF (degree of freedom) = 63 and AGFI, GFI, TLI and CFI higher than recommended value at 0.90. RMSEA at 0.054 has less than recommended value at 0.08 (RMSEA < 0.08).

Table 4.20
Summary Result of Confirmatory Test of Exogenous Market Orientation (MO)

Regression Weight			Estimates
COMP1	<---	COMP	0.466
COMP2	<---	COMP	0.681
COMP5	<---	COMP	0.434
COMP6	<---	COMP	0.484
COMP7	<---	COMP	0.588
CUST1	<---	CUST	0.745
CUST4	<---	CUST	0.799
CUST5	<---	CUST	0.373
CUST6	<---	CUST	0.706
TINTERF1	<---	INTERF	0.613
INTERF2	<---	INTERF	0.546
INTERF3	<---	INTERF	0.686
INTERF5	<---	INTERF	0.623

Goodness of fit Measures

	Cut of Value	Result	Criteria
Chi Square (X^2)	Better Smaller	112.268	Good fit
P-Probability	$p > 0.05$	0.000	Poor fit
RMSEA	≤ 0.08	0.054	Good fit
DF	> 0.00	63	Good fit
Ratio	< 2.0	1.782	Good fit
AGFI	≥ 0.90	0.911	Good fit
GFI	≥ 0.90	0.938	Good fit
AIC	Better Smaller	168.268	Good fit
TLI	≥ 0.90	0.927	Good fit
CFI	≥ 0.90	0.941	Good fit

Modification	MI Changes
INTERF3- CUST5	7.185
CUST6 - INTERF2	5.883
CUST5 – CUST1	4.326
COMP5 – CUST1	4.048

The model showed a good result because it has degree of freedom (DF) that has fulfilled the recommended fit value over 0.00 and AGFI, GFI, TLI and CFI value over 0.90. Then again, looking for good fit criteria, the probability result obtained at p= 0.000 does not fit because the p value must be over 0.05 (p >0.05). Therefore, the model must be modified (Ghozali, 2008; Kamariah, 2007; Byrne, 2001 ; Hair et al. , 1995).

The modification was performed by observing the regression weight on the highest modification index (MI) value. Modification was done by removing indicators that showed cross loading between them. These indicators were then dropped from the analysis as it was not one-dimensional.

Based from values in Table 4.20, the modification index value, indicators INTERF3 that is 'business function and integration' has cross-loading with CUST5 'level of commitment orientation', indicators CUST6 'sales services' has cross-loading with INTERF2 that is 'freely communication'. indicators CUST5 'level of commitment orientation' has cross-loading with CUST1 'business strategy', indicators COMP5 that is 'competitors will response to our competitive move' has cross-loading with CUST1 'Business Strategy'. In other words, indicator INTERF3 not only measures exogenous latent construct of market orientation (MO), it also measures the indicator CUST5. , indicator CUST6 not only measures exogenous latent construct of market orientation (MO), it also measures the indicator INTERF2 , indicator CUST5 not only measures exogenous latent construct of market orientation (MO), it also measures the indicator CUST1, indicator COMP5 not only measures exogenous latent construct of market

orientation (MO), it also measures the indicator CUST1. Hence INTERF3, CUST6, CUST5 and COMP1 are invalid because it is not one-dimensional and must be dropped in the upcoming analysis.

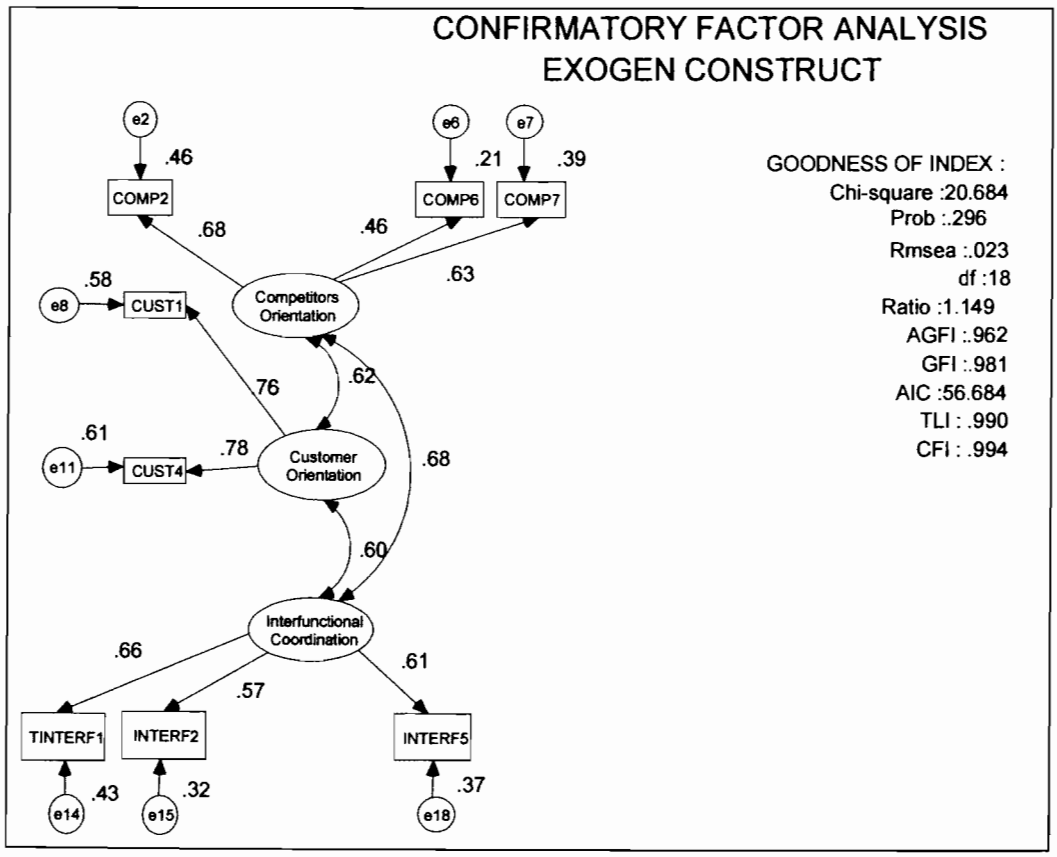

Figure 4.12
After Modification- Confirmatory Test of Exogenous Market Orientation construct

By referring to Figure 4.12 and Table 4.21, the modification result are as follows: Goodness of fit index based on the result, showed chi square value was reduced from 112.268 to 20.684, AIC value was reduced from 168.268 to 56.684, and probability number (p) increased from 0.000 to 0.296. The model was fit because it is within the

recommended fit value, smaller chi square, smaller AIC and probability value higher than 0.05 (p >0.05). RMSEA was reduced from 0.054 to 0.023, and the model was fit because it fulfilled the recommended value of less than 0.08 (RMSEA < 0.08). Degree of freedom (DF) was reduced from 63 to 18, showing that the model is fit because it fulfilled the recommended value of higher than 0.000 (DF > 0.000). Finally the model was considered fit and therefore it does not need any further modification (Byrne, 2001).

Table 4.21
After Modification- Summary Result of Confirmatory Test of Exogenous Market Orientation (MO)

Regression Weight			Estimates
COMP2	<--	COMP	0.679
COMP6	<--	COMP	0.457
COMP7	<--	COMP	0.627
CUST1	<--	CUST	0.763
CUST4	<--	CUST	0.783
TINTERF1	<--	INTERF	0.656
INTERF2	<--	INTERF	0.568
INTERF5	<--	INTERF	0.608

Goodness of fit Measures	Cut of Value	Before	After	Criteria
Chi Square (X^2)	Better Smaller	112.268	20.684	Good fit
P-probability	p > 0.05	0.000	0.296	Good fit
RMSEA	≤0.08	0.054	0.023	Good fit
DF	> 0.00	63	18	Good fit
Ratio	< 2.0	1.782	1.149	Good fit
AGFI	≥ 0.90	0.911	0.962	Good fit
GFI	≥ 0.90	0.938	0.981	Good fit
AIC	Better Smaller	168.268	56.684	Good fit
TLI	≥ 0.90	0.27	0.990	Good fit
CFI	≥ 0.90	0.941	0.994	Good fit

4.5.7. Confirmatory Test of Endogenous Innovation (INNO) and Business Performance (BP) construct.

The latent construct of endogenous innovation (INNO) and business performance (BP) can be illustrated in Figure 4.13.

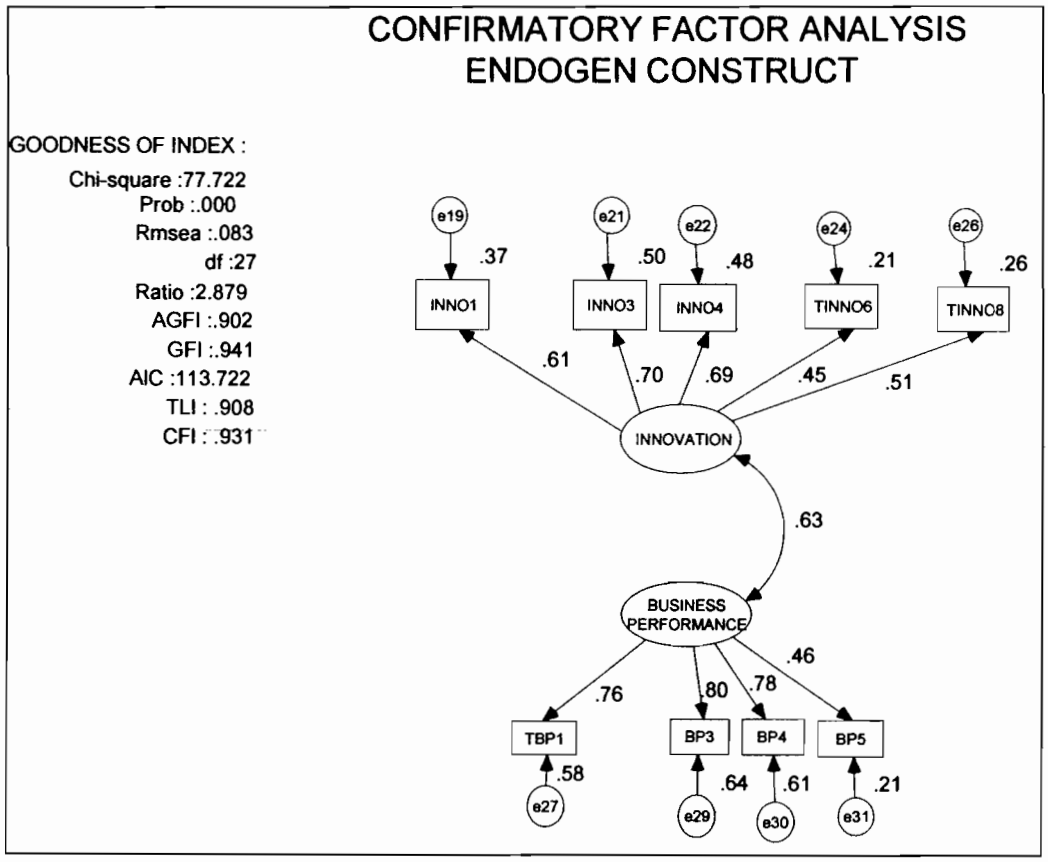

Figure 4.13
Confirmatory Test of Endogenous Innovation (INNO) and Business Performance (BP) construct

Referring to the Figure 4.13 and Table 4.22, Goodness of fit index base on result showed chi-square value = 77.722 with the degree of freedom (df) value =27 and AGFI, GFI, TLI and CFI higher than recommended value at 0.90. The model showed a good result because it has degree of freedom (DF) that has fulfilled the recommended fit

value over 0.00. The CFI (comparative fit index) value = 0.931 , TLI (Tucker Lewis of Coefficient) = 0.908, GFI (Good of Fit Index) = 0.941, and AGFI (Adjusted Good of Fit Index) = 0.902, which certainly satisfies the criterion that the CFI value , TLI value, GFI value and AGFI value more than standard acceptable requirement at higher than 0.90.

Table 4.22
Summary Result of Confirmatory Test of Innovation (INNO) and Business Performance (BP)

Regression Weight			Estimates
TBP1	<---	BP	0.762
BP3	<---	BP	0.800
BP4	<---	BP	0.783
BP5	<---	BP	0.461
INNO1	<---	INNO	0.610
INNO3	<---	INNO	0.705
INNO4	<---	INNO	0.693
TINNO6	<---	INNO	0.455
TINNO8	<---	INNO	0.515

Goodness of fit Measures	Cut of Value	Result	Criteria
Chi Square (χ^2)	Better Smaller	77.722	Good fit
P-Probability	$p > 0.05$	0.000	Poor fit
RMSEA	≤ 0.08	0.083	Poor fit
DF	> 0.00	27	Good fit
Ratio	< 2.0	2.879	Poor fit
AGFI	≥ 0.90	0.902	Good fit
GFI	≥ 0.90	0.941	Good fit
AIC	Better Smaller	113.722	Good fit
TLI	≥ 0.90	0.908	Good fit
CFI	≥ 0.90	0.931	Good fit

Modification	MI Changes
BP3-BP5	30.936
TINNO6-BP5	13.526
BP5-TBP1	4.170

Then again, looking for good fit criteria, The result was an acceptable ratio = 2.879 more than standard acceptable requirement ratio < 2.000 (Ratio < 2.000). RMSEA at 0.083 has more than recommended value at 0.08 (RMSEA < 0.08) and the probability result obtained at p= 0.000, does not fit because the p value must be over 0.05 (p >0.05).

Therefore, the model must be modified (Ghozali, 2008; Kamariah, 2007; Byrne, 2001 ; Hair et al. , 1995). The modification was performed by observing the regression weight on the highest modification index (MI) value. Modification was done by removing indicators that showed cross loading between them. These indicators were then dropped from the analysis as it was not one-dimensional.

Based from values in Table 4.22, the modification index value, indicators BP3 that is 'profitability' has cross-loading with BP5 'overall business success', indicators TINNO6 that is 'innovation strategy' has cross-loading with BP5 'overall business success, indicators BP5 that is 'overall business success' has cross-loading with TBP1 'gross profit'. In other words, indicator BP3, TINNO6 and BP5 not only measures endogenous latent construct of innovation (INNO) and business performance (BP), it also measures the indicator BP5 and TBP1. Hence BP3, TINNO6 and BP5 are invalid because it is not one-dimensional and must be dropped in the upcoming analysis.

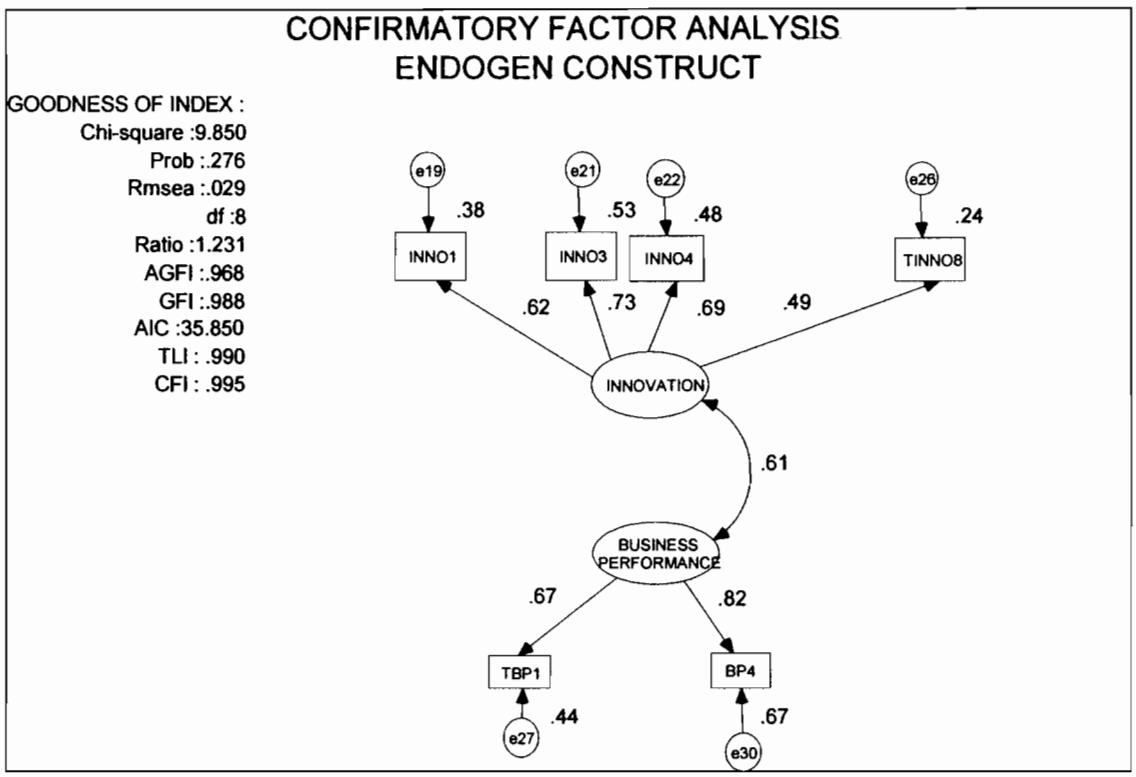

Figure 4.14
After Modification- Confirmatory Test of Endogenous Innovation (INNO) and Business Performance (BP) construct

By referring to Figure 4.14 and Table 4.23, the modification result are as follows:

Goodness of fit index based on the result, showed chi square value was reduced from 77.722 to 9.850, AIC value was reduced from 113.722 to 35.850, and probability number (p) increased from 0.000 to 0.276. The model was fit because it is within the recommended fit value, smaller chi square, smaller AIC and probability value higher than 0.05 (p >0.05). RMSEA was reduced from 0.083 to 0.029, and the model was fit because it fulfilled the recommended value of less than 0.08 (RMSEA < 0.08). Degree of freedom (DF) was reduced from 27 to 8, showing that the model is fit because it fulfilled the recommended value of higher than 0.000 (DF > 0.000). Finally the model

was considered fit and therefore it does not need any further modification (Byrne, 2001).

Table 4.23
After Modification- Summary Result of Confirmatory Test of Endogenous Innovation (INNO) and Business Performance (BP) construct

Regression Weight			Estimates
TBP1	<---	BP	0.667
BP4	<---	BP	0.820
INNO1	<---	INNO	0.617
INNO3	<---	INNO	0.726
INNO4	<---	INNO	0.693
TINNO8	<---	INNO	0.495

Goodness of fit Measures	Cut of Value	Before	After	Criteria
Chi Square (X^2)	Better Smaller	77.722	9.850	Good fit
P-probability	$p > 0.05$	0.000	0.276	Good fit
RMSEA	≤ 0.08	0.083	0.029	Good fit
DF	> 0.00	27	8	Good fit
Ratio	< 2.0	2.879	1.231	Good fit
AGFI	≥ 0.90	0.902	0.968	Good fit
GFI	≥ 0.90	0.941	0.988	Good fit
AIC	Better Smaller	113.722	35.850	Good fit
TLI	≥ 0.90	0.908	0.990	Good fit
CFI	≥ 0.90	0.931	0.995	Good fit

4.6. STRUCTURAL MODEL TEST

After the completion of the measurement model test, the researcher performed the structural model test. Two tests were used; Structural Model Correspondence Test and Path Coefficient Signification Test (Appendix 4.5).

4.6.1. Structural Model Correspondence Test

This test is for examining the correspondence of the hypotheses model (the used model) with the empirical data (the collected samples). In SEM analysis there is no single statistical test for the hypotheses test. In this observation the researcher used GFI (Goodness of Fit Index) criteria based on result. These are chi square statistics (χ^2), probability (p), RMSEA (Root Mean Square Error of Approximation), DF (Degree of Freedom), Ratio (CMIN/DF), AGFI (Adjusted Goodness of Fit Index), GFI (Goodness of Fit Index), AIC (Akaike Information Criterion), TLI (Tucker Lewis Index) and CFI (Comparative Fit Index).

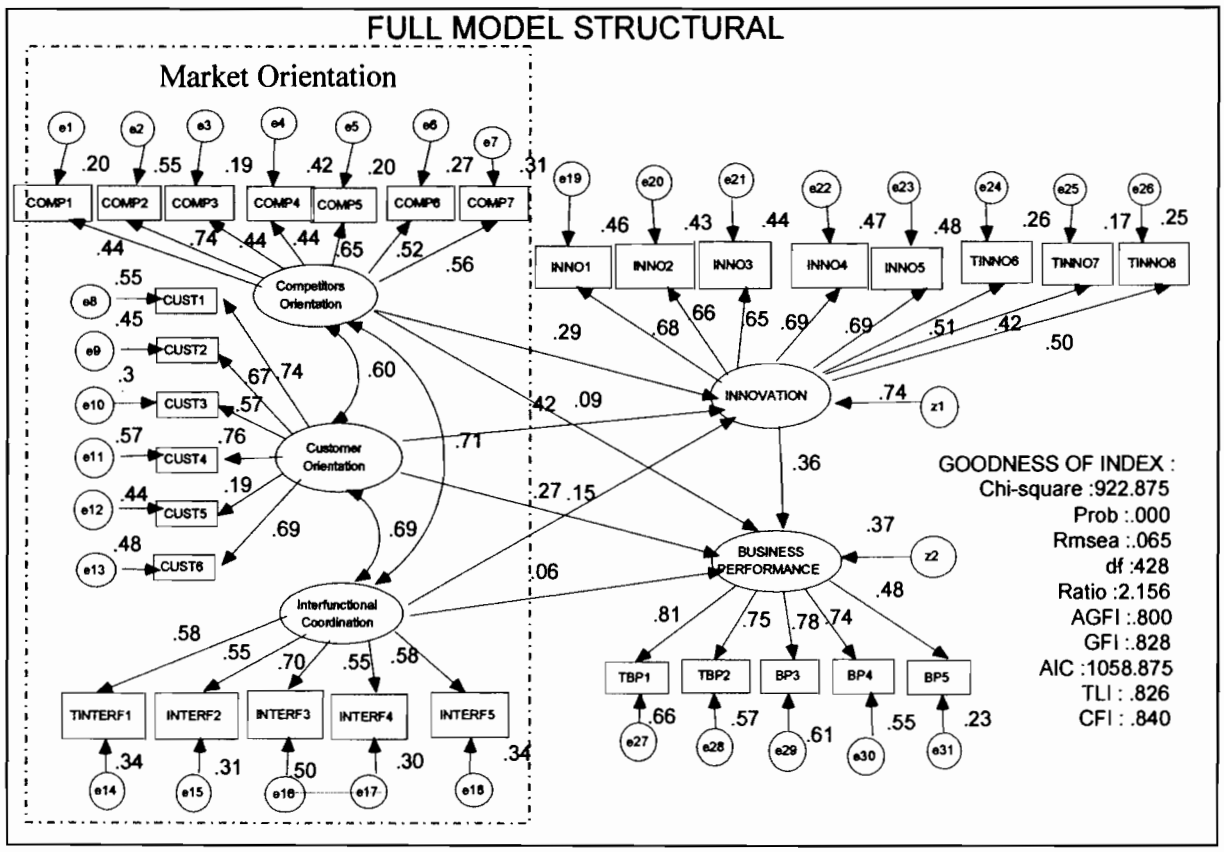

Figure 4.15
Full Structural Model

Referring to the Figure 4.15 and Table 4.24, Goodness of fit index based on the result showed chi-square value of 922.875 with DF of 428. The model showed good result because it has a degree of freedom (DF) that has fulfilled the recommended fit value over 0.00. The RMSEA (Roots Mean Square of Approximation) at 0.065, was fit as the recommended value must be less than 0.08 (RMSEA < 0.08). The probability result at p= 0.000 which does not fit because the probability must be over 0.05 (p > 0.05). Ratio at 2.156, which was not fit as the recommended value must be less than 2 (Ratio < 2). AGFI (Adjusted Good of Fit Index), GFI (Good of Fit Index), TLI (Tucker Lewis of Coefficient) and CFI (Comparative of Fix Index) values were less than 0.90. The

recommended value should be higher than 0.90 therefore the model must be modified (Ghozali, 2008; Kamariah, 2007; Byrne, 2001; Hair, Anderson, Tatham & Black, 1995). The evaluation of Goodness of fit value of the proceeded structural model as shown in Figure 4.15 above, and the result of the analysis was stated in the Table 4.25 below.

Table 4.24
Structural Model of Goodness of Fit Index

Goodness of Fit Measures	Cut of Value	Before	Criteria
Chi Square (χ^2)	Better Smaller	922.875	Good fit
P-Probability	$p > 0.05$	0.000	Poor fit
RMSEA	≤ 0.08	0.065	Good fit
DF	> 0.00	428	Good fit
Ratio	< 2.0	2.156	Poor fit
AGFI	≥ 0.90	0.800	Poor fit
GFI	≥ 0.90	0.828	Poor fit
AIC	Better Smaller	1,058.875	Poor fit
TLI	≥ 0.90	0.826	Poor fit
CFI	≥ 0.90	0.840	Poor fit

The modification was performed by observing the regression weight on the highest modification index (MI) value. Modification was done by removing indicators that showed cross loading between them. These indicators were then dropped from the analysis as it was not one-dimensional.

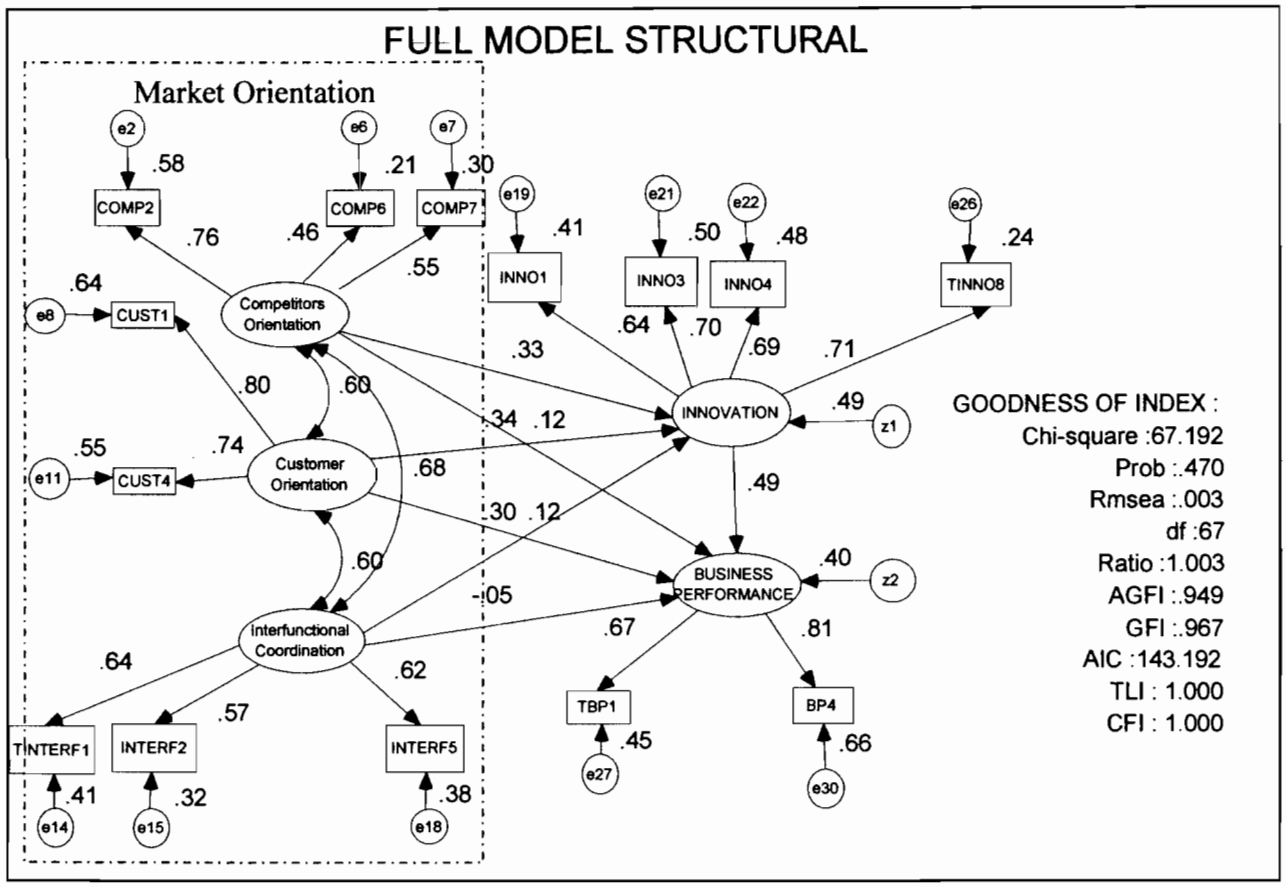

Figure 4.16
After Modification -.Full Structural Model

Figure 4.16 shown the modification been performed based on the modification index in

Table 4.24

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Table 4.25
After-Modification Properness Test

Goodness of fit Measures	Cut of Value	Before	After	Criteria
Chi Square (χ^2)	Better Smaller	922.875	67.192	Good fit
P-Probability	$p > 0.05$	0.000	0.470	Good fit
RMSEA	≤ 0.08	0.065	0.003	Good fit
DF	> 0.00	428	67	Good fit
Ratio	< 2.0	2.156	1.003	Good fit
AGFI	≥ 0.90	0.800	0.949	Good fit
GFI	≥ 0.90	0.828	0.967	Good fit
AIC	Better smaller	1,058.875	143.192	Good fit
TLI	≥ 0.90	0.826	1.000	Good fit
CFI	≥ 0.90	0.840	1.000	Good fit

Based from the results from Figure 4.16 and Table 4.25 after the modification, the results are as follows :

1: Chi Square value was reduced from 922.875 to 67.192, AIC value was reduced from 1,058.875 to 143.192, and probability value (p) increased from 0.000 to 0.470. This shows that the model is fit because it fulfilled the recommended value at a smaller Chi Square, AIC and probability value is higher than 0.05 ($p > 0.05$) (Byrne, 2001).

2: Root Mean Square Error of Approximation (RMSEA) was reduced from 0.065 to 0.003. This shows that the model is fit because it fulfilled the recommended value of less than 0.08 (RMSEA < 0.08) (Byrne, 2001).

3: Degree of freedom (DF) value was reduced from 428 to 67. This shows that the model is fit because it fulfilled the recommended value of DF which is higher than 0.000 (DF > 0.000) (Byrne, 2001).

4: Ratio was reduced from 2.156 to 1.003 which shows the ratio is under 2, and therefore it falls within the recommended fit value.

5: The number of Adjusted Goodness Fit Index (AGFI) , Goodness Fit Index (GFI), Tucker Lewis Index (TLI) and Comparative Fit Index (CFI) at 0.949,0.967, 1.000 and 1.000 respectively. This shows that the model is fit because the value more than standard acceptable requirement, that is higher than 0.90 (Byrne, 2001).

Therefore based on the overall result the model was considered fit to the data and hence it does not need any modification (Ghozali, 2008; Kamariah, 2007; Byrne, 2001 ; Hair et al., 1995).

Based on Table 4.26 and standardized loading factor, all indicator variables are convergent because they have over 0.50 factor loading or standardized regression

coefficient (except COMP6 that is 'competitive action'). Therefore, all these indicators were persisted as latent variable construction indicator.

Table 4.26
The result of Regression Test for Latent Variables of Modified Structural Model

Latent to Latent Variables			Standardized Regression coefficient (β)	Critical Ratio (CR)	P
Innovation	<--	Competitors Orientation	0.328	2.567	0.010
Innovation	<--	Customer Orientation	0.339	3.241	0.001
Innovation	<--	Inter-functional Coordination	0.302	2.337	0.019
Business Performance	<--	Competitors Orientation	0.119	0.759	0.448
Business Performance	<--	Customer Orientation	0.116	0.887	0.375
Business Performance	<--	Inter-functional Coordination	-0.054	-0.343	0.732
Business Performance	<--	Innovation	0.488	2.446	0.014

Summary of the Regression Result

Table 4.26 shows the result of the standardized regression coefficient. Result presented and discussed as below.

- The regression coefficient of competitors orientation is 0.328, customer orientation is 0.339 and inter-functional coordination is 0.302. So for every increase of competitors orientation, customer orientation will be an increase respectively of innovation. Based on the measurement result, the dominant variable toward the

the highest value at 0.339. It shows that these variable is very important in increasing the innovation for SMEs in Malaysia.

- The regression coefficient of competitors orientation is 0.119, customer orientation is 0.116 and inter-functional coordination is -0.054. So for every increase of competitors orientation and customer orientation will be an increase respectively of business performance. But for every increase of inter-functional coordination , there will be an decrease of 0.054 of business performance. Based on the measurement result, the dominant variable toward the business performance is competitors orientation. This is because the regression coefficient was at the highest value at 0.119. It shows that these variable is very important in increasing the innovation for SMEs in Malaysia.

- The regression coefficient of innovation is 0.488. So for every increase of innovation will be an increase of 0.488 of business performance.

- Based on the measurement result, the dominant variable toward the business performance is innovation . This is because the regression coefficient was at the highest value at 0.488 coefficients. It shows that the variable is very important in increasing the business performance for SMEs in Malaysia.

4.7. DETERMINATION COEFFICIENT

Table 4.27
The result of Determination Coefficient Test

Latent Variables	Estimate
Innovation	.705
Business Performance	.396

Based on the Table 4.27 above, the result are presented below .

Determination coefficient value denoted by R square (R^2) for innovation equation is 0.705, which means that innovation variability can be described by competitors orientation variability, customer orientation variability and inter-functional coordination variability at 70.5 percent, while 29.50 percent is other unobserved variability.

Determination Coefficient value for business performance equation is 0.396, which means that business performance variability can be described by competitors orientation variability, customer orientation variability, inter-functional coordination variability and innovation variability at 39.60 percent, while 60.40 percent is other unobserved variability.

The coefficient of determination (R^2) of this model is accepted, because the result more than from requirement standard of R Square > 0.200 (Zikmund, 2003).

4.8 MEDIATING VARIABLE

Mediating variable is a variable which functions to mediate any correlation between independent variable and dependent variable (Baron & Kenny, 1986). To test the influence of the mediating variable, the path analysis method was used. Path analysis is the extension of regression analysis to measure inter-variable causality correlation.

4.8.1 Mediation Effect of Innovation on Competitor Orientation and Business Performance.

The test was to measure whether innovation can mediate the relationship between competitor orientation and business performance, and the regression results are as follows:-

Table 4.28.
Regression results between Competitor-Orientation, Innovation and business performance

			Standardized Regression Coefficient (β)	Sig, p	Result
Innovation	<--	Competitors Orientation	.328	.010	Significant
Business Performance	<--	Competitors Orientation	.119	.448	Not Significant
Business Performance	<--	Innovation	.488	.014	Significant

From Table 4.28 the path analysis can be illustrated in Figure 4.17 as below:

It is assumed that competitors orientation (COMP) can influence business performance (BP) either directly or indirectly, by influencing innovation (INNO) variable first, then to the business performance (BP).

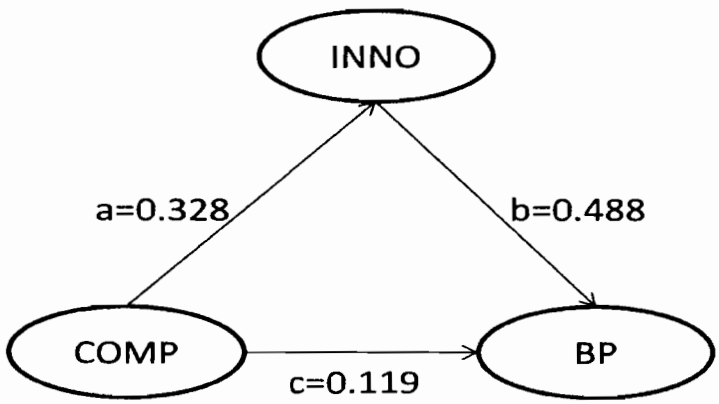

Figure 4.17
Path Analysis for Mediation Effect Innovation on Competitor Orientation and Business Performance

The result from the standardized regression weight for competitors orientation and Innovation is at a = 0.328; innovation and BP is at b =0.488 and direct relationship competitors orientation and BP is at c = 0.119.

Where, C' is a standard indirect effect or the mediation effect (Baron and Kenny, 1986),

The indirect effect or mediation effect is calculated as follows:

C'= a* b

C'= 0.328 x 0.488 = 0.160.

Table 4.29
Standardized Indirect Effects Between Competitor-Orientation, Innovation and business performance

	Inter-functional Coordination	Competitors Orientation	Customer Orientation
Innovation	.000	.000	.000
Business Performance	.147	**.160**	.165

From Table 4.29, it can be noticed that indirect effect value based on the calculation C'= 0.160 was equal and no differences with the table output standardized indirect effect at 0.160.

From Figure 4.17, the indirect effect value at C'= 0.160 is higher than the direct effect value at c=0.119, and this shows that innovation is the mediating variable of competitor orientation and business performance of the SMEs. Therefore, there is an indirect relationship between competitor orientation and business performance.

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4.8.2 Mediation Effect of Innovation on Customer Orientation and Business Performance.

The test was performed to measure whether innovation can mediate the relationship between customer orientation and business performance. The regression results are as follows :

Table 4.30
Regression result between Customer-Orientation, Innovation and Business Performance

			Standardized Regression Coefficient	Sig, p	Result
Innovation	<--	Customer Orientation	.339	.001	Significant
Business Performance	<--	Customer Orientation	.116	.375	Not Significant
Business Performance	<--	Innovation	.488	.014	Significant

From Table 4.30 the path analysis can be illustrated in Figure 4.18 as below:

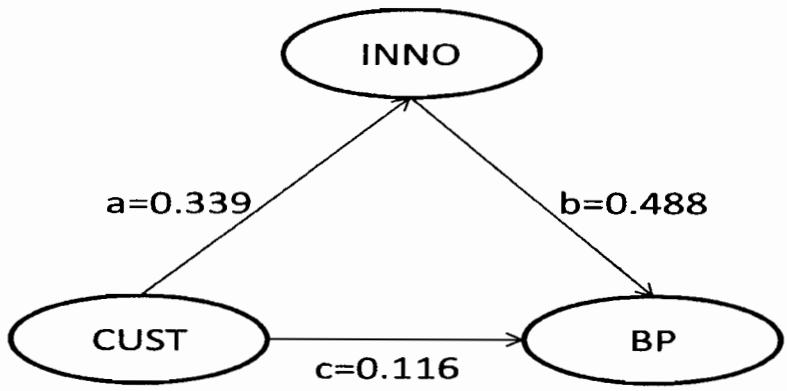

Figure 4.18
Path Analysis for Mediation Effect of Innovation on Customer Orientation and Business Performance.

Thus it can be assumed that customer orientation (CUST) can influence business performance (BP) either directly or indirectly, by influencing innovation (INNO) variable first then to the business performance (BP).

The result from the standardized regression weight is at a = 0.339 for customer orientation (CUST) and innovation (INNO); Innovation (INNO) and business performance (BP) is at

b = 0.488; and direct customer orientation (CUST) and business performance (BP) is at c = 0.116.

Where , C' is a standard Indirect Effect or the mediation effect (Baron & Kenny, 1986), The mediation effect is calculated as below,

C' = a* b

C' = 0.339 x 0.488 = 0.165

Table 4.31
Standardized Indirect Effects between Customer-Orientation, Innovation and Business Performance

	Inter-functional Coordination	Competitors Orientation	Customer Orientation
Innovation	.000	.000	.000
Business Performance	.147	.160	**.165**

From Table 4.31, it can be noticed that indirect effect value based on the calculation C'= 0.165 was equal and no differences with the table output standardized indirect effect at 0.165.

Indirect effect value at C'= 0.165 is higher than the direct effect value at c= 0.116. This shows that innovation is the mediating variable of customer orientation and business performance of the SMEs. Therefore, there is an indirect relationship between customer orientation and business performance.

4.8.3 Mediation Effect of Innovation on Inter-functional Coordination and Business Performance.

The test was to measure whether innovation can mediate between inter-functional coordination and business performance and the regression results are as follows.

Table 4.32
Regression result between Inter-functional Coordination, Innovation and Business Performance

			Standardized Regression Coefficient	Sig, p	Result
Innovation	<--	Inter-functional Coordination	.302	.019	Significant
Business Performance	<--	Inter-functional Coordination	-.054	.732	Not Significant
Business Performance	<--	Innovation	.488	.014	Significant

From Table 4.32 the path analysis can be illustrated in Figure 4.19 as below:

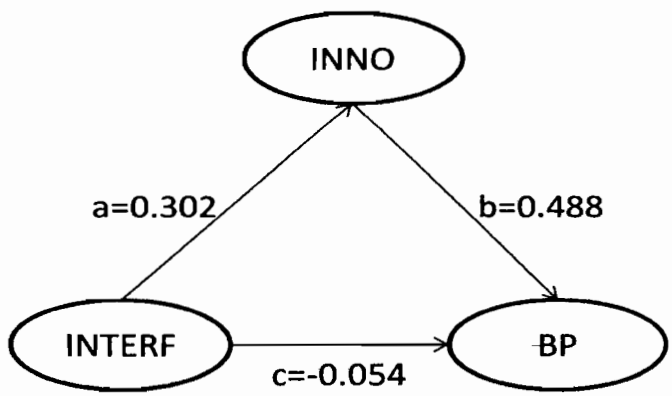

Figure 4.19
Path Analysis for Mediation Effect of Innovation on Inter-functional Coordination and Business Performance.

In Figure 4.19, it can be assumed that inter-functional coordination (INTERF) can influence business performance (BP) either directly or indirectly, by influencing innovation (INNO) variable first then to the business performance (BP).

The result from the standardized regression weight is at a= 0.302 for inter-functional coordination (INTERF) and innovation (INNO); innovation (INNO) and business performance (BP) is at b=0.488; and direct inter-functional coordination (INTERF) and business performance (BP) is at c= -0.054.

C' is a standard indirect effect or the mediation effect.

The mediation effect is calculated as below,

C'= a* b

C'= 0.302 x 0.488 = 0.147.

Table 4.33
Standardized Indirect Effects between Inter-functional coordination, Innovation and Business Performance

	Inter-functional Coordination	Competitors Orientation	Customer Orientation
Innovation	.000	.000	.000
Business Performance	**.147**	.160	.165

From Table 4.33, it can be noticed that indirect effect value based on the calculation C'= 0.147 was equal and no differences with the table output standardized indirect effect at 0.147.

From Figure 4.19, the indirect effect value at C'= 0.147 is higher than the direct effect one at c=-0.054. This shows that innovation is the mediating variable of Inter-functional coordination and business performance of the SMEs. Therefore, there is an indirect relationship between inter-functional coordination and business performance.

4.9 HYPOTHESES TEST

Hypotheses test were conducted through signification test of path coefficient with t-test toward alpha 5 percent. The path diagram used is as follows:

The research questions as described in section 2.6 to 2.9 and hypotheses (H1a, H1b, H1c, H2a, H2b, H2c, H3, H4a, H4b and H4c) were tested using the path coefficient signification test as shown in section 4.6.2. The 0.05 level of significance was used to test the hypotheses.

The result of observation hypotheses describing the influence between each variable, can be seen in the Table 4.34.

Table 4.34.
The result of the Hypothesis Test

			Standardized Regression Coefficient ((β)	Sig, p	Result	CR
Innovation	<--	Competitors Orientation	.328	.010	Significant	2.567
Innovation	<--	Customer Orientation	.339	.001	Significant	3.241
Innovation	<--	Inter-functional Coordination	.302	.019	Significant	2.337
Business Performance	<--	Competitors Orientation	.119	.448	Not Significant	0.759
Business Performance	<--	Customer_ Orientation	.116	.375	Not Significant	0.887
Business Performance	<--	Inter-functional Coordination	-.054	.732	Not Significant	-0.343
Business Performance	<--	Innovation	.488	.014	Significant	2.466

Based on Table 4.34 above, the statistic hypotheses tested on significance test of path coefficient are :

Hypothesis H1a: There is a significant positive relationship between competitor orientation and innovation in the SMEs.

Based on the result of the hypothesis test, the researcher found that there is a positive relationship between competitors orientation and innovation , with regression coefficient of 0.328 at significant value of 0.010 (sig = 0.010 (< 0.05)). Since significant value, sig < 0.05 and the regression coefficient is positive, the result of the test shows that there is significant positive relationship between competitors orientation and innovation. Hence

it can be concluded that competitors orientation has a positive effect towards innovation. It means that for every increase of competitors orientation there will also be an increase in innovation.

Therefore Hypothesis H1a is accepted and answers research question 1a.

Hypothesis H1b: There is a significant positive relationship between customer orientation and innovation in the SMEs.

Based on the result of the hypothesis test , the researcher found that there is a positive relationship between customer orientation and innovation, with regression coefficient of 0.339 at significant value of 0.001 (sig = 0.001 (< 0.05)) . Since significant value, sig < 0.05 and the regression coefficient is positive, the result of the test shows that there is significant positive relationship between customer orientation and innovation in the SMEs. Hence it can be concluded that customer orientation has a positive effect towards innovation. It means that for every increase of customer orientation there will also be an increase in innovation.

Therefore Hypothesis H1b is accepted and answers research question 1b.

Hypothesis H1c: There is a significant positive relationship between inter-functional coordination and innovation in the SMEs

Based on the result of the hypothesis test, the researcher found that there is a positive relationship between inter-functional coordination and innovation, with regression coefficient of 0.302 at significant value of 0.019 (sig = 0.015 (< 0.05)). Since significant value, sig < 0.05 and the regression coefficient is positive, the result of the test shows

that there is significant positive relationship between inter-functional coordination and innovation in the SMEs. Hence it can be concluded that inter-functional coordination has a positive relationship towards innovation. It means that for every increase of inter-functional coordination there will also be an increase in innovation.

Therefore Hypothesis H1c is accepted and answers research question 1c.

Hypothesis H2a: There is a significant positive relationship between Competitors' Orientation and Business Performance

Based on the result of the hypothesis test, the researcher found that there is a low relationship between competitors orientation and business performance, with regression coefficient of 0.119 at significant value of 0.448 (sig = 0.448 (> 0.05)). Since significant value, sig > 0.05 and the regression of coefficient is low, the result of the test shows that there is no significant positive relationship between competitors orientation and business performance in the SMEs.

Therefore Hypothesis H2a is rejected and answers research question 2a.

Hypothesis H2b: There is a significant positive relationship between Customer Orientation and Business Performance

Based on the result of the hypotheses test, the researcher found that there is a low relationship between customer orientation and business performance, with regression coefficient of 0.116 at significant value of 0.375 (sig = 0.375 (> 0.05)). Since significant value, sig > 0.05 and the regression of coefficient is low, the result of the test

shows that there is no significant positive relationship between customer orientation and business performance in the SMEs.

Therefore Hypothesis H2b is rejected and answers research question 2b.

Hypothesis 2c: There is a significant positive relationship between Inter-Functional Coordination and Business Performance

Based on the result of the hypotheses test, the researcher found that there is a negative relationship between inter-functional coordination and business performance, with regression coefficient of -0.054 at significant value of 0.732 (sig = 0.732 (> 0.05)). Since significant value, sig > 0.05 and the regression of coefficient is low and negative, the result of the test shows that there is no significant positive relationship between inter-functional coordination and business performance in the SMEs.

Therefore Hypothesis H2c is rejected and answers research question 2c.

Hypothesis H3: There is a significant positive relationship between Innovation and Business Performance

Based on the result of the hypothesis test, the researcher found that there is a positive relationship between innovation and business performance, with regression coefficient of 0.488 at significant value of 0.014 (sig = 0.014 (< 0.05)). Since significant value, sig < 0.05 and the regression of coefficient is positive, the result of the test shows that there is significant positive relationship between innovation and business performance in the SMEs in Malaysia.

Therefore Hypotheses H3 is accepted. Hypothesis H3 answers research question 3.

Hypothesis H4a: Innovation mediates the relationship between Competitor Orientation and Business Performance

Based on the result of the hypotheses test in Figure 4.16, with mediating innovation, the researcher found that the indirect effect value at C'= 0.160 is higher than the direct effect value at c= 0.119. The researcher concluded that although the effect is indirect, innovation mediates the relationship between competitor orientation and business performance.

Therefore Hypothesis H4a is accepted and answers research question 4a.

Hypothesis H4b: Innovation mediates the relationship between Customer Orientation and Business Performance

Based on the result of the hypothesis test in Figure 4.17, with mediating innovation, the researcher found that the indirect effect value at C'= 0.165 is higher than the direct effect value at c = 0.116. The researcher concluded that although the effect is indirect, innovation mediates the relationship between customer orientation and business performance.

Therefore, Hypothesis H4b is accepted and answers research question 4b.

Hypothesis H4c: Innovation mediates the relationship between Inter-functional Coordination and Business Performance

Based on the result of the hypothesis test in Figure 4.18, with mediating innovation, the researcher found that the indirect effect value at C'= 0.147 is higher than the direct effect value at c= -0.109. The researcher concluded that although the effect is indirect,

innovation mediates the relationship between inter-functional coordination and business performance.

Therefore, Hypothesis H4c is accepted and answers research question 4c.

Table 4.35, the table shows the summary of the hypotheses findings.

Table 4.35
Summary of Hypotheses Tests

Hypotheses	Result	Standardized Regression Coefficient (β)	Sig < 0.05 and C' indirect & c direct effect
H1a – Relationship between Competitors Orientation and Innovation	Accepted	0.328	Sig = 0.010 <0.05
H1b - Relationship between Customer Orientation and Innovation	Accepted	0.339	Sig =0.001 <0.05
H1c - Relationship between Inter-Functional Coordination and Innovation	Accepted	0.302	Sig =0.019<0.05
H2a - Relationship between Competitors Orientation and Business	Rejected	0.119	Sig =0.448 > 0.05
H2b - Relationship between Customer Orientation and Business Performance	Rejected	0.116	Sig =0.375 > 0.05
H2c - Relationship between Inter-Functional Coordination and Business Performance	Rejected	-0.054	Sig =0.732 > 0.05

H3 - Relationship between Innovation and Business Performance	Accepted	0.488	Sig =0.014 < 0.05
H4a – Innovation mediate between Competitors Orientation and Business Performance	Full Mediated	0.160	C'=0.160 > c=0.119
H4b - Innovation mediate between Customer Orientation and Business Performance	Full Mediated	0.165	C'=0.165 > c=0.116
H4c- Innovation mediate between Inter-Functional Coordination and Business Performance	Full Mediated	0.147	C'=0.147 > c= -0.054

4.10 CHAPTER SUMMARY

This chapter presented the results of data analysis. Demography of respondents' profile was presented in the beginning of the chapter. Structural Equation Modeling (SEM) AMOS 6.0, was used in testing the models to indicate the relationships of the variables (exogenous and endogenous variables). Data were analyzed using measurement model and structural model. To further improve the model, it was modified based on the highest modification index by removing and deleting the indicators. The final structural model, produced the best goodness of fit index. Tests of significance for all paths were conducted using the best goodness of fix index. The results of the structural path analysis of the research model provided support to four hypotheses (H1a, H1b, H1c, H2a, H2b, H2c, H3, H4a, H4b, and H4c). The results shows consistency with past literature and answered all the objectives and research questions in Chapter 1.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

This chapter is presented in six sections. The first section summarizes the findings based on the analysis of the hypotheses of this study. The effect of the demography is also discussed in this section. A discussion on the state of market orientation among SMEs in Malaysia is presented in section two. The third section discusses on the hypotheses findings, along with possible alternative explanations of the findings. The fourth section provides the owner/managers with the implications of the findings while the fifth section presents the recommendations for future research and the final section presents the conclusion of the study.

5.1 SUMMARY

The results of the data analysis produced some interesting findings. In the model of this study, the variables to be observed were three exogenous variables components of market orientation (competitors orientation, customer orientation and inter-functional coordination) and two endogenous variable (innovation and business performance).

The model's three exogenous variables of market orientation have been tested directly with endogenous variables business performance and innovation to see the direct relationship between the variables. The three exogenous variables components of market

orientation were also tested through a mediation variable, innovation, to see whether there exist strong relationships with business performance.

First, the researcher found that there is a significant positive relationship between competitors orientation, customer orientation and inter-functional coordination towards innovation. These three components of market orientation were found to help improve innovation. Customer orientation has higher influence toward innovation than competitors orientation and inter-functional coordination.

Second, there is also a positive relationship between competitors orientation and customers orientation toward business performance. Inter-functional coordination is negative relationship with business performance. However the analysis indicated that these relationships were weak. Therefore it can be concluded that the components of market orientation have only a low or mild relationship with business performance, and partially or did not contribute much to the success of the business performance of the SMEs in Malaysia .

Third, the innovation factor was found to have a significant positive relationship towards business performance, and therefore innovation improves the business performance of a SMEs in Malaysia.

Fourth, innovation was found to have fully mediated the relationships between competitors orientation, customer orientation and inter-functional coordination toward

business performance. This was an indirect relationship between components of market orientation and business performance of the SMEs in Malaysia. It shows that the levels of competitors orientation, customer orientation and inter-functional coordination among the business owner/managers of the SMEs in Malaysia influenced the practice of market orientation that lead to an overall higher business performance. Based on the standardized indirect effects, the customer orientation has higher influence towards business performance.

5.2 THE EFFECTS OF DEMOGRAPHY

This study revealed that the sample of the business owner/managers of SMEs were dominated by male with a majority of 68.4 percent of the respondents. The ages of the respondents ranged from 25 to above 50 years and with a relatively high mean percentage for those between 31 to 40 years at 47.8 percent. This explains the fact that a new generation or the younger generation is venturing into ICT SMEs in Cyberjaya and taking full advantage of becoming entrepreneurs. Result of the study conforms to the same findings by Collombo and Delmastro (2002). The study also found that most of the young generation entrepreneurs would prefer to be based in Cyberjaya to enjoy the privileges provided by the government. This is because Cyberjaya offers grants and various facilities to promote young entrepreneurs to improve the quality of their businesses. Cyberjaya is a major high technology hub for ICT companies with MSC status, which is similar to Silicon Valley of USA and Bangalore of India. These high

technology cities offer opportunities with the objective of granting technology incentives to entrepreneurs to open up their own businesses and improve business networking (MDeC, 2008; Choi, 2002; Acs & Audretch, 1990).

52.6 percent of the participants have three to six years (3 to 6 years) of experiences in venturing a business. Therefore these entrepreneurs are mentally more equipped with the concept of market orientation and innovation and they are ever ready to respond to the government's agenda of promoting ICT entrepreneurs. These entrepreneurs are more equipped with market orientation and innovation skills and hence would be ready to go global to market the Malaysian ICT products (Choi, 2002).

The results of this study indicated that most of the SME business owner/managers have a degree qualification (47.1 percent) and master degree qualification (21 percent). This shows that the new generation is educated and well qualified to become entrepreneurs. Obtaining master degree is solely for their own satisfaction and to improve their background, experiences and skill.

The study shows that 54.78 percent of the respondents are managers whilst business owners comprised of the remainder 45.22 percent. This situation arises in most small companies or SMEs as the business owners are also doing the same job as owners and the managers in-charge. This is because smaller companies do not require as much manpower as bigger companies. The manager in-charge is the man who knows

everything about the business that ranges from the company's operation, market orientation, sales and human resources.

34.9 percent of the SMEs have an average of 5 to 10 staff. These respondents indicated that their business have a limited market size and just started to grow. Meanwhile 16.9 percent of the respondents reported that the SMEs businesses are operating with less than 5 people. The growth of the SMEs is based on the development works and the projects involved.

5.3 THE STATE OF MARKET ORIENTATION AMONG SMEs IN MALAYSIA

The state of market orientation among SMEs in Malaysia is measured by the dimensions of the variables competitors orientation, customer orientation, and inter-functional coordination . Based on the result which tested the state of market orientation among SMEs in Malaysia the researcher concluded that:

Competitors Orientation:

The indicators of competitors orientation are 'share information, analyze the product offered by their competitor as competitive advantage, competitors analysis, the competitors will response to the competitive move, competitive action, and risk takers'. From the results, it was found that only five indicators can be accepted. The five indicators are 'share information in the organization, analyze the product offered by

competitor as competitive advantage, competitors will response to the competitive move, competitive action and risk takers' . The two indicators that could not be used as indicators in measuring competitors orientations are 'competitive advantage and competitors analysis'. These indicators did not contribute to competitors orientations.

The dominant indicator that influenced competitors orientations was 'analyze the product offered by competitor'. This is because the factor loading or regression coefficient was at the highest value of 0.67. So, for every increase of the indicator 'analyze the product offered by competitor', there will be an increase of 0.67 of the competitors orientation. It shows that the indicator 'analyze the product offered by competitor' is a very important indicator in competitors orientation. So business owner/managers of SMEs in Malaysia must give priority to 'analyze the product offered by competitor' indicator. The information obtained from the indicator 'analyze the product offered by competitor' can be shared within the company to improve the products, improve marketing strategy and finally increase performance.

Customer Orientation :

The variable customer orientation indicators are 'business strategy, customer satisfaction, business objective, understanding customer need, level of commitment orientation and sales services'. The result indicated that only four indicators can be used as indicators of customer orientation. The indicators are 'business strategy, understanding customer needs, level of commitment orientation and sales services'. Two other indicators, 'customer satisfaction and business objective' were dropped as indicators in

measuring customer orientation. These two indicators did not contribute to customer orientation.

The dominant indicator in customer orientation is 'understanding the customer need'. This is because this indicator has the highest factor loading, value at 0.82. Therefore, for every increase of 'understanding the customer needs', there will be an increase of 0.82 in customer orientation. So business owner/managers of SMEs in Malaysia must give priority to 'understanding customer needs'. The information obtained from this indicator can be used to further improve customer orientation.

Inter-functional Coordination:

The inter-functional coordination variable indicators are 'the top management, freely communication, business function and integration, creating customer value and share resources with others business units'. From the results, it was found that only four indicators were accepted. The indicators are 'top management , freely communication, business function and integration and share resources with others business units'.

The indicator that was dropped was the 'creating customer value'. This indicator did not contribute to inter-functional coordination of the SMEs.

The dominant indicator in inter-functional coordination was 'top management'. This is because this indicator has the highest factor loading value at 0.67. Therefore, it can be concluded that for every increase of 'top management' function these will be an increase

of 0.67 in the inter-functional coordination . It is suggested that the 'top management' of SMEs must regularly visit the employees and their section or departments to enable the employees to understand how SMEs departmental goal are related to the goal of the company.

5.4 DISCUSSION FROM HYPOTHESES RESULTS AND FINDINGS

5.4.1 Hypotheses H1a , H1b and H1c : Components of Market Orientation and Innovation

Hypotheses H1a, H1b and H1c were about the relationships between components of market orientation and innovation. There have been several studies on the influence of market orientation and innovation and their impact on business performance of the organizations. Hurley and Hult (1998) recommended that constructs related to innovation should be incorporated into components of market orientation research. Lukas Ferrell (2000), Harryson (1997) and Atuahene-Gima (1996) in their respective studies suggested that market orientation has strong effect on innovation in various SMEs.

Market orientation and innovation enabled the SMEs to develop better products and services that are required to the current needs. The ICT services industry is known as a key element of societal and economic development. The ICT market offers good job opportunities to entrepreneurs and young graduates. Furthermore, ICT is also seen as a

business strategy and practical tools' solution for supporting the SMEs in improving the SMEs' performance.

It is a fact that with the uncertainties of the economy these days, SMEs need to be more innovative to survive the aggressive competition in the market place. Innovation enables SMEs to enhance survival and avoid failures. (Acs et al., 1990; Acs, 1999).

Hypothesis H1a: There is a significant positive relationship between Competitors Orientation and Innovation in the SMEs.

The result of the test showed that competitors orientation has a positive effect toward business performance. It means that for every increase of competitors orientation there will also be an increase in innovation. It also showed that the SMEs innovation was weak without the influence of the competitors orientation. The result of the test showed that innovation indicators such as 'SMEs improved the method of production, developed new methods and implementing the innovation strategy', all have positive effect towards competitors orientation. The competitor orientation indicators were measured by SMEs 'analyze the product offered by competitor, competitive advantage, competitive action and risk takers' indicators.

Hypothesis H1b: There is a significant positive relationship between Customer Orientation and Innovation in the SMEs.

The result of the test showed that customer orientation has a positive effect toward innovation variable in the SMEs in Malaysia. It means that for every increase of

customer orientation, these will also be an increase in innovation. It also showed that the SMEs innovation was weak without the influence of the competitors orientation.

The result of the test showed that innovation was strongly influenced by customer orientation variables which were measured with 'business strategy and understanding customer need'. This study also showed, a significant positive relationship between the implementation of customer orientation and innovation indicators that were 'improved method, developed a news method and implement innovation strategy'. Based on the data, attention to 'business strategy' is the most significant indicator (highest significant value) in customer orientation, in order to boost innovation and business performance of the SMEs in Malaysia.

Therefore, the strategy required by the business owner/managers to improve the performance of the SMEs is to identify the training program that could develop the SMEs' business owner/managers to improve their sales and marketing strategy and services skills and to boost the innovation. SMEs business strategies were also driven by the business owner/managers on how greater value can be created for customers.

Customer orientation is also beneficial because customers can provide input that could improve the quality of innovation in setting of high technology product. Therefore SME owner/managers need to be closed with partners, and customers. Feedbacks from the users will improve product development and enabling the SMEs to add value to the goods.

Hypothesis H1c: There is a significant positive relationship between Inter-functional Coordination and Innovation in the SMEs.

The result of the test showed that inter-functional coordination has a positive relationship toward innovation variable in the SMEs in Malaysia. It means that for every increase of inter-functional coordination these will also be an increase in innovation.

The result of the test showed that innovation indicators 'improved method production , developed a news method and implement innovation strategies' have positive effect towards inter-functional coordination indicators 'the top management , business function and integration , and share resources with others business units'.

Inter-functional coordination refers to the degree of co-operation between the office departments. Since SMEs have less number of staffs, so these variables were less important in executing new product development strategies. The finding is consistent to Atuahene-Gima (1995) which found that market orientation had a positive impact on product innovation .

Conclusion for Hypotheses H1a, H1b and H1c is :

Competitors orientation, customer orientation and inter-functional coordination were found to have significant positive relationships with innovation in the SMEs.

A direct relationship between competitors orientation, customer orientation and inter-functional coordination toward innovation have been statistically proved, some tools and policies considered in the innovation scale are more heavily used by the firms more orientated to the market.

Competitors orientation. Innovation strategy was the only way to create competitive advantage and to perform better than competitors.

Customer orientation . The result suggested that customer orientation seem to be highly customer oriented to satisfy customer need through innovation strategy.

Inter-functional coordination among people, resources and department in the ICT SMEs are also important in executing innovation strategy.

The result of the analysis shows that customer orientation predominately affect business performance of ICT SMEs sectors.

The findings are consistent with other studies such as and Matear, Osborne, Garrett and Gray (2002), Lado and Maydeu-Olivares (2001), Atuahene-Gima and Ko (2001) and Atuahene-Gima (1996). The findings were also consistent to Zhang (2008), Lukas and Farrel (2000), Han, Kim and Srivastava (1998), Atuahene-Gima (1995) and Despende, Failey and Webster (1993). The researcher found that customer orientation had a highly significant relationship with innovation, and whereas competitors orientation and inter-functional coordination had only an approach level of significance in the relationships.

5.4.2. Hypotheses H2a, H2b and H2c : Components of Market Orientation and Business Performance

The findings revealed positive but low or weak relationships between market orientation and business performance. These findings concur with those previous researches by Pelham (2000), Frith (1998), Atuahene-Gima (1996, 1995), Jones (1995) and Narver

& Slater (1990). Spillan (2005), argues that many empirical findings have produced complex and mixed results with respect to the relationship between components of market orientation and business performance (Voss & Voss, 2000). These previous researchers also predicted a positive relationship between components of market orientation and performance. The assumption was that market orientation provides a firm with better understanding of its environment and customers.

The significance of market orientation in an integrated model of determinants of performance is highlighted by several research findings. The researcher indicated that there is an influence of market orientation on customer orientation, organizational commitment, sales growth, and financial performance and profitability (Pelham & Wilson, 1996; Slater & Narver, 1994; Siguaw, Brown & Widing, 1994; Jaworski and Kohli, 1993; Narver & Slater, 1990).

Some empirical studies also found a positive relationship between market orientation and managers' perceptions of overall firm performance (Jaworski & Kohli, 1993), managers' perceptions and financial performance (Pelham & Wilson, 1996; Slater & Narver, 1994), and managers' perceptions and new product performance (Pelham & Wilson, 1996; Atuahene-Gima, 1996, 1995; Slater & Narver, 1994).

At the same time, however several studies did not support a direct positive relationship between performance and market orientation (Gladson, 2008; Helfert, Ritter &Walter, 2002; Vazquez, Santos & Alvarez, 2001; Han et al.,1998; Jaworski & Kohli, 1993). A possible explanation for the lack of clear relationship with market orientation is that it is a more complex relationship than those tested for in previous studies (Pelham, 1997).

Hypothesis H2a : There is a significant positive relationship between Competitors Orientation and Business Performance in the SMEs.

The result of the test showed that competitors orientation has an insignificant relationship with business performance. Competitors orientation has no direct relationship to business performance. It meant that every increase of competitors orientation will not improve the business performance. This kind of relationship should be avoided as it may have a negative impact to the future of the SMEs. The result indicated that no direct relationship between competitors orientation and business performance. But the relationships may happen indirectly.

Adopting innovation such as new product, new services and new method of marketing are important and crucial innovation strategies that can and should be adopted by ICT SMEs to exploit opportunities and avoid threats in new or existing competitors.

Hypothesis H2b: There is a significant positive relationship between Customer Orientation and Business Performance in the SMEs.

The result of the test shows that customer orientation has an insignificant relationship with business performance. It means that every increase of customer orientation will not improve the business performance. This kind of relationship should be avoided as it may have a negative impact on the future of the SMEs . Customer orientation has no direct relationship to business performance, however it may have indirect relationship. These results suggested a chain effect in which customer orientation influences market performance and business performance. This chain effect can be interpreted as a fully mediated relationship, as elaborated by Kenny, Kashy & Bolger (1998). These results

help explain the conflicting findings of prior studies, some showing and others denying that customer orientation enhances business performances.

Hypothesis H2c: There is a significant positive relationship between Inter-functional Coordination and Business Performance in the SMEs.

The result of the test showed that inter-functional coordination has an insignificant and negative relationship with business performance. It meant that every increase of inter-functional coordination will not improve the business performance. This kind of relationship should be avoided as it may have a negative impact on the future of the SMEs .

The result indicated that, no direct relationship between inter-functional coordination and business performance. But there may be happened an indirect relationships between inter-functional coordination to innovation and then to business performance of the SMEs in Malaysia.

Conclusion for Hypotheses H2a, H2b and H2c :

Competitors orientation and customer orientation are not significant but have a positive effect toward business performance. Inter-fucntional coordination is insignificant and has a negative effect toward business performance. Competitors orientation, customer orientation and inter-functional coordination may have indirect relationship to improve business performance of SMEs in Malaysia

High level of competitors orientation is necessary for business performance as market orientation are not perfect in today's environment. The only way to create competitive advantage is to perform better than the competitors.

High level of customer orientation is necessary for business performance as it is the best way to understand and answer user's needs. Lack of this will have a potential to increase costs.

High level of inter-functional coordination created a prompt decision making in SMEs. According Choi (2002), SMEs have a small number of employees. The small number of employees makes inter-functional coordination may be difficult to study as a behavoural component for SMEs and see the improvement of the business performance

The finding was consistent to Gladson (2008), Helfert, Ritter and Walter (2002), Vazquez, Santos and Alvarez (2001), Han et al. (1998) and Pelham and Wilson (1996), which found that there was low or weak relationship between components of market orientation and business performance. The components of market orientation had no direct relationship to business performance. However market orientation may have indirect relationship and as a mediator variable as a medium to improve business performance of the SMEs in Malaysia (Matear, Osborne, Garrett & Gray, 2002).

5.4.3. Hypothesis H3 : Innovation and Business Performance

The result of the test showed that innovation has a positive effect toward business performance variables. It means that every increase of innovation will also increase business performance. It showed direct relationship that business performance of ICT SMEs in Malaysia is weak without the influence of innovation. The results from the analysis showed that there was a significant positive relationship that influenced innovation and business performance. The finding was consistent to Masroor (2009), Troy, Gupta, Macmilan & Surie (2004), Szymanski & Varadarajan (2001), and Atuahene Gima (1996), which found that innovation was essential in determining the business success of the SMEs in Malaysia.

5.4.4. Hypothesis H4 : Mediating Effect of Innovations on components of Market Orientation and Business Performance

The relationship happened to be low or weak when it is directly tested between components of market orientation and business performance of the SMEs. Innovation was found to be fully mediating the relationship between components of market orientation and business performance. Based on the results, attention to customer orientation is important as it is the most significant variable in market orientation to boost business performance. Customer orientation has the highest significance value of the other two components of market orientation variables. This research confirmed to previous studies of Lonial, Tarim, Tatoglu, Zaim and Zaim (2008), Gonzales (2005), Im and Workman (2004) and Atuahene-Gima (1996) on the mediating effect of innovation.

5.4.4.1 Why Innovation Fully Mediates Each Linkages In The Model

Therefore this means that competitors orientation, customer orientation and inter-functional coordination are not a direct relationship in contributing the SME performance. The relationship appeared indirectly, whereby innovation fully mediates the component of market orientation and business performance. SMEs have to be innovative in order to improve business performance and to be competitive and sustainable. Innovation enables to enhance ICT SMEs survival and avoid failures. (Acs, 1999).

Hence the result confirmed the theoretical framework that the business owner / manager would certainly improve components of market orientation behavior in SMEs, and is capable to increase the business performance level of Innovation. These through response to customer changes in the consumption preferences, and also again the competition response in the market to achieve competitive advantage through the introduction of new product, new services and new method of marketing and explore new market.

Innovation fully mediates between Customer orientation and business performance

According to Atuahene-Gima (1996) in ICT services industry, success depends on the market orientation, especially on its customer orientation. Being in touch with what the clients want and need and being able to respond appropriately to them is a key to innovation success in the service sector.

Innovation fully mediates between competitors orientation and business performance

The competition response in the market to achieve competitive advantage through the introduction of Innovation (new product, new services and new method of marketing and exploring the new market).

Innovation fully mediates between inter-functional coordination and business performance

SMEs organizations have the same view of how things in the organizations could be. Thus, great emphasis on ICT and promoting Innovation is placed to enable accurate and detailed communication to develop this perspective and improve business performance. ICT makes the coordination between function and create prompt decision making and improve performance.

5.4.4.2 Overall Discussion On Hypotheses

The overall discussion of the real meaning of the finding are as following.

The researcher concluded that the component of market orientation is not significant to business performance. However the component of market orientation may have an indirect relationship to improve business performance. Innovation was found to be fully mediating the relationship between component of market orientation and business performance.

The finding also concurred that customer orientation alone cannot improve performance, but business owner /manager have to add with Innovation, only then SME's can perform better. The finding's is also consistant with Atuahene Gima (1995) who reported that customer orientation has a greater influence on performance when innovation is to be considered.

According to Choi (2002) SME need to be more innovative every day in order to survive the aggressive competition in the market place especially in today's environment where technologies are changing rapidly and competition in global market is fierce.

The adoption of Innovation is a pre-requisite of customer orientation strategies of SMEs. This is done by introducing Innovation and ICT investment to SMEs in Malaysia. The results suggest that the business owner/managers in SME endorse the strategic value of customer orientation to their businesses and considered ICT as necessary for building strong relationships with their customers. This suggests that SMEs may make their ICT and Innovation decisions on the basis of a trade-off between expected benefits from using the available ICT packages compared with alternative modes of achieving customer loyalty as to serve their customers well.

5.5. IMPLICATIONS

The components of market orientation in the study were competitors orientation, customer orientation and inter-functional coordination. All the variables influenced the implementation of market orientation. The SME business owner/managers are required to put the target market as a focus. The SMEs business owner/managers should identify a work culture where the organization requires customer satisfaction as a core centre of business operation. Business owners of the SMEs should take calculated risks, be innovative and should demonstrate pro-activeness (Morris and Paul, 1987). This study suggested that when business owner/managers perceive to act autonomously and to be aggressive as well as proactive, market orientation is more likely to be practiced.

The business goal of SMEs ICT is to prosper in its own field and survive in the long run. The results of this study implied that the implementation of market orientation by SMEs has a positive impact on business performance. The results were consistent with the findings of Kwaku (1997); Pelham (1997); and Jones (1995). The finding was important, since SMEs are the 'emerging growth companies' (Frith, 1998) and any knowledge of factors that could contribute to their success will be beneficial.

Of the five measures of business performance that was employed, only 'gross profit, profitability and the SME growth' were found to be positively correlated to the implementation of market orientation. The 'gross profit, profitability and the SME growth' are important variables because they contribute to positive cash flows. Most of SMEs in this study emphasized sales rather than profit as their business goal. The

survival of these SMEs depend on how well the business owner/managers managed their business. This suggested that in spite of other influences on business profitability, SMEs with a higher degree of customer orientation, competitors orientation and inter-functional coordination are likely to be more profitable. The ability of the SMEs to cultivate an appropriate culture to develop better value and quality products relative to its competitors are important for achieving and maintaining superior performance. Moreover, customer orientation leads to increase sales and repeat purchases. This will result in lower customer acquisition costs and will enhance the profitability of the SMEs.

The study also suggested that the business owner/managers should emphasize on customer understanding and satisfaction as well as competitors orientation. As market orientation resulted in increased sales, it is important for business owner/managers to maintain momentum through progressive investments. They should maintain a competitive edge over larger organizations in areas associated with market oriented behaviors.

The findings indicated significant positive relationships between SMEs business owner/ managers competitors orientation, customer orientation and the inter-functional coordination and innovation. This suggested that SMEs require innovation in order to increase the business performance. Higher level of competitors orientation, customer orientation and the inter-functional coordination will help owner/managers to be more innovative and market oriented. Business with high market orientation will likely enhance the competency to develop new products, services or markets.

5.5.1. How should SMEs Implement the Market Orientation?

Owner/managers should focus on the entrepreneurial skills and continuous learning to create superior products and values for customers. To gain that focus, four conditions have to be established. First, the business owner/managers must be totally committed to the implementation market orientation and commitment must be clearly demonstrated in their actions and decisions. Second, the business owner/managers must be well versed and educated on the general meaning, nature and importance of market orientation and innovation. Third, the business owner/managers must pay careful attention to the most important factors of market orientation and innovation. These factors are the strengths for the SMEs to increase their business performance. Finally, the business owner/managers must be more creative and innovative in selling their products and services.

5.5.2. Contribution of Study

This research contributed to a more encompassing perspective on SMEs ICT industry in Malaysia for better understanding the effects of market orientation and innovation on business performance. More specifically this research contributed to the study: i) by identifying the state of market orientation among the SMEs in Malaysia, ii) determining the relationship between components of market orientation and innovation, iii) determining the relationship between components of market orientation, iv) determining the relationship between innovation and business performance, and v)

determining the mediating effect of innovation on the relationship between market orientation and business performance of SMEs.

The study showed the most important factor from market orientation and innovation that have strong relationship toward business performance. It also demonstrated that innovation has stronger relationship towards business performance. Therefore, it is hoped that this study can serve as an alternative strategy to many business owner/managers of SMEs ICT industry in Malaysia to improve the business performance (gross profit, profitability and the SME growth). Moreover this study provided some basis for future researchers who are interested in applying business strategies for the success of business performance through market orientation and innovation in their firms.

The study employed structural equation modeling (SEM) method in describing the interrelation among variables. SEM also contribute to a new research in market orientation. This make the findings and results of the study meaning full to the body of knowledge.

5.6. LIMITATIONS OF THE STUDY

There were some methodological and theoretical limitations in this study. The study focused only on the market orientation , innovation and business performance of

SMEs in the ICT service industry in Cyberjaya Selangor. It addressed the performance of SMEs from innovation perspective.

The primary limiting factors of the study are listed as follows:

- Sample population

  The sample population of this study was focused on the SMEs in the services industry only and within Cyberjaya, in Selangor, Malaysia.

- Sample industry

  The study focused on single source ICT industry. Better result could be obtained to generalize the industry in the study.

- More sample needed

  Findings were based only on the 272 respondents. Some participants from which the sample was drawn were reluctant to respond and some were not contactable. Better result could be obtained if more respondents participated in the study.

- Internalization

  The study relied upon the perception of Malaysian small firms. Future researches might investigate the effect of the market orientation globally by studying an internalization of Malaysian SMEs going abroad as market orientation and innovation were bigger prospects and more challenging to be implemented when Malaysian SMEs go abroad.

5.7. RECOMMENDATIONS FOR FUTURE RESEARCH

The definition of market orientation is likely to be ambiguous to many business owner /managers of SME in Malaysia who have never attended a formal marketing course or seminar. The earlier findings however do provide a starting point for researches into how SMEs practice market orientation .

Future research should investigate the kind of training programs required which is appropriate to the needs of an existing SME in developing the business owner/managers to the next level of competencies.

Although this research confirmed the role of innovation as an important aspect of organizational strategy, additional research is needed to refine the understanding of this critical dimension in the innovation factors to the business owner/managers of the SMEs. Future research should consider a longitudinal design in studying the practice of market orientation, overcoming the inherent limitation of using cross sectional data and leading to more specific and accurate assessments.

Future research is also needed to determine other measures of SMEs performance and integrate them in a market orientation model. These may include tangible and intangible result. The tangible performance are cash flow, employee turnover, inventory turnover, return assets, customer complaint rate, reject rate and productivity. The

intangible outputs are the intellectual property (IP) and copyright issues and filing a patent.

For further research, the researcher is recommended to conduct new variables such as marketing mix , entrepreneur orientation and learning orientation. This will help SMEs make appropriate strategies in winning the competition. Furthermore new research can be conducted in other industries such as telecommunication, agriculture, construction and biotechnology.

Finally, future research should investigate whether Malaysian SMEs would be ready for internationalization. The study would rely upon the perception of Malaysian SMEs. When SMEs go abroad, market orientation and innovation should play a bigger role as they are expected to face a more challenging situation and both market orientation and innovation will be a greater challenge to be implemented.

5.8. CONCLUSIONS

The purpose of this study was to evaluate how market orientation affect the development and implementation of innovation in small and medium enterprises (SMEs) in Malaysia. The study was designed to examine the effect of market orientation and innovation towards business performance. The significant conclusion from this study is that different kind of market orientation may affect innovation and business performance. Customer orientation has higher influence toward innovation than

competitors orientation and inter-functional coordination. Innovation had a positive relationship related to business performance. Customer orientation with higher innovation may contribute to higher business performance.

This research confirmed previous studies of Gonzales (2005), Im and Workman (2004) and Atuahene-Gima (1996) on the mediating effect of innovation toward business performance. The literature finding suggested that high level of innovation may contribute a positive effect to business performance.

Based on the first hypotheses H1a, H1b and H1c, a positive relationship was found between innovation and components of market orientation. It can be concluded that competitors orientation, customer orientation and inter-functional coordination of SMEs can influence the implementation of market orientation towards the innovation process. It meant that as competitors orientation, customer orientation and inter-functional coordination level increases, the degree of innovation also increases.

A low and an insignificant relationship between components of market orientation and business performance (H2a, H2b and H2c) was also found. It meant that as components of market orientation level increases, a weak degree of business performance also increase (gross profit, profitability, and growth). In order to improve business performance, the SMEs need indirect effect relationship such as deploying ICT in marketing as an innovation factor. Today, ICT is a crucial factor contributing to the promotion of innovation.

In testing hypothesis H3, it can be concluded that the implementation of innovation by SMEs increased the business performance. Thus, the implementation of innovation (improved method, developed a news method and implementation innovation strategy) can influence business performance (gross profit, profitability, and growth). The results demonstrated that innovation had significant positive relationship toward business performance.

Finally, hypotheses H4: Innovation mediated the relationship between competitors orientation, customer orientation and inter-functional and business performance. There was an indirect relationship of market orientation and business performance of the SMEs . This was in line with the hypotheses as the business owner /manager should fully mediate the relationship between innovation and business performance. This showed that the level of innovation in Malaysian SMEs need to be further improved with several strategies to increase the level of innovation.

The summary of the mediation of innovation effect, concurred that in today world the component of markert orientation cannot work alone to improve the business performance . Atuahene Gime (1995) innovation need to consider to produce a great performance. According to Drucker (1985), every organization has to prepare for the abandonment of everything and SME need for innovation. As behavioural change in the market orientation alone will not get the SMEs to the dramatically higher level of business performance and make the SME very real difference and competitive. SME need to focus on the developing ICT innovative technologies that produce to the next

high level of business performance. These concurred again that mediation effect of innovation is an important contribution to the SMEs success

The finding showed that Malaysian business owner/managers should focus on the competitors orientation indicators on 'analyze the product offered by competitor', customer orientation indicators in the ' understanding of customer need' and lastly inter-functional coordination indicators in the 'top management'.

To summarize these findings, business owner/managers of SMEs should increase their entrepreneurial behavioral level in the areas of marketing management towards the customer, the competitors and the internal office coordination. This finding was consistent with the findings of Van Dierman and Peter (1995) and Jaworski and Kohli (1993).

On top of that, the Malaysian business owner/managers should be more innovative, proactive and must be willing to take greater risk in order for them to compete globally . This can be further improved on continuous learning and managing marketing strategies (Sartika, 2001) . According to Jaworski *et al.* (1993), it was described that top management need to emphasize to employees continuously the need for ongoing tracking and responding to market developments. Last but not least, this dissertation can be improved for future research by considering SMEs going global, generalizing the ICT SMEs throughout Malaysia and open to different types of industries.

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Appendix 3.1

Mail Survey Materials

Cover Letter

Dear Respondent(s):

I am conducting a survey of business owner and top management to examine the marketing and innovation activities in SMEs. The study is undertaken to fulfill the requirement of the Doctorate of Business Administration at Universiti Utara Malaysia (UUM) .

I am requesting your help in this academic study which attempts to provide strategic insight into innovation and maintaining of competitive advantage. I believe the result will be of great interest and benefit to you.

I seek your kind assistance in completing the self-explanatory questionnaires (it should take less than 15 minutes of your precious time) based on your honest opinion as you personally feel it applies. All information provided by you will be kept in strictest confidence and will be used only for the purpose of academic research.

Appreciate to answer every item. There is no right and wrong answer. You will remain completely anonymous.

Please help me in this important research. Please do not hesitate to contact me should you have any question about this survey. I am looking forward to getting your responses.

Thank you very much for your kind help.

Sincerely,

For Universiti Utara Malaysia
Zaifuddin Majid
Student id : 90596
HP : +6 013 3400092
Fax : 03-91002858
Email : zasriq@tm.net.my

Appendix 3.2

Survey Questionnaires

Section A Market Orientation

Competitor Orientation
1 = Strongly Disagree **2** = Disagree **3**= Neutral **4** = Agree **5** = Strongly Agree
Please tick with **"X"** one answer or one response that best represent your experiences and opinions.

	1	2	3	4	5
1. Managerial staff regularly share information within our organization regarding our competitors' actions.	☐	☐	☐	☐	☐
2. We keep informed and analyze the product offers by our competitors.	☐	☐	☐	☐	☐
3. Managerial staff target customer where we can have an opportunity for competitive advantage.	☐	☐	☐	☐	☐
4. Top Management often discuss competitors' strengths and strategies.	☐	☐	☐	☐	☐
5. We usually anticipate how our competitors will response to our competitive move.	☐	☐	☐	☐	☐
6. We rapidly response to competitive action that threaten us.	☐	☐	☐	☐	☐
7. When I'm faced with decision making situation, I'm willing to take the risk.	☐	☐	☐	☐	☐

Customer Orientation
1 = Strongly Disagree **2** = Disagree **3**= Neutral **4** = Agree **5** = Strongly Agree
Please tick with **"X"** one answer or one response that best represent your experiences and opinions.

	1	2	3	4	5
8. Our business' strategies are driven by our believe about how we can create greater value for customer .	☐	☐	☐	☐	☐
9. We measure customer satisfaction systematically and frequently.	☐	☐	☐	☐	☐

10. Our business objectives are driven primarily by customer satisfaction.	☐	☐	☐	☐	☐
11. Our competitive advantage is based on our understanding of customer need.	☐	☐	☐	☐	☐
12. We constantly monitor our level of commitment and orientation to serving customer needs	☐	☐	☐	☐	☐
13. We give close attention to after sales services.	☐	☐	☐	☐	☐

Inter-functional Coordination

1 = Strongly Disagree **2** = Disagree **3**= Neutral **4** = Agree **5** = Strongly Agree

Please tick with **"X"** one answer or one response that best represent your experiences and opinions.

	1	2	3	4	5
14. Our top managers from every function regularly visit our current and prospective customers	☐	☐	☐	☐	☐
15. We freely communicate information about our successful and unsuccessful customer experiences across all business functions	☐	☐	☐	☐	☐
16. All our Business functions (Sales, marketing, R&D and finance) are integrated in serving the needs of our target markets.	☐	☐	☐	☐	☐
17. All our managers understand how everyone in our business can contribute to creating customer value.	☐	☐	☐	☐	☐
18. We share resources with other business units	☐	☐	☐	☐	☐

Section B Innovation Measure.

1 = Strongly Disagree **2** = Disagree **3**= Neutral **4** = Agree **5** = Strongly Agree

Please tick with **"X"** one answer or one response that best represent your experiences and opinions.

	1	2	3	4	5
19. For the past 5 years,has your business develop any new products or service?	☐	☐	☐	☐	☐
20. For the past 5 years, has your business improve the product or services it offers?	☐	☐	☐	☐	☐
21. For past the 5 years, has your business improve its method of production?	☐	☐	☐	☐	☐

22. For the past 5 years, has your business develop new method of marketing?	☐	☐	☐	☐	☐
23. For the past 5 years, has your business establish new markets?	☐	☐	☐	☐	☐
24. Knowledge allow firm to develop and implement Innovation strategies in marketing	☐	☐	☐	☐	☐
25. For the past 5 years, has competitor provides you the innovative idea?	☐	☐	☐	☐	☐
26. For the past 5 years, has customer provides you the innovative idea ?	☐	☐	☐	☐	☐

Section C : Business Performance Measure

5 = Much better than Competitors 4 = Better than Competitors 3 = About the same
2 = Worse than Competitors 1 = Much worse than competitors

Please tick with **"X"** one answer or one response that best represent your experiences and opinions.

Business Performance Measure	**1**	**2**	**3**	**4**	**5**
27. Gross Profit (before tax)	☐	☐	☐	☐	☐
28. Return of Asset (ROA)	☐	☐	☐	☐	☐
29. Profitability	☐	☐	☐	☐	☐
30. Growth	☐	☐	☐	☐	☐
31. Overall Business success	☐	☐	☐	☐	☐

Section D : About your company
*Please **fill** in the blank for an appropriate answer in the boxes (☐) given.*

1. Firm years in operation ?

☐ : ≤ 2years ☐ : ≤ 3 to 4 years ☐ : ≤ 5 to 6 years ☐ : > 6 years

2. Your age?

☐ : ≤ 25 to 29 years ☐ : ≤ 30 to 39 years ☐ : ≤ 40 to 49 years ☐ : >50 years

3. Your sex ☐ Male ☐ Female

4. Your education level

☐ PMR/LCE ☐ Degree
☐ SPM/MCE ☐ Master
☐ Diploma ☐ PhD

5. Numbers of employees ?

☐ < 5 ☐ 5 to 10 ☐ 11 to 15 ☐ 16 to 20 ☐ 21 and above

6. Type of business (select only one if involved in more than one area; identify only the area with the most sales revenue)
☐ ICT Software ☐ ICT Hardware ☐ Business Process Outsourcing

7. Job title : ☐ Owner ☐ Manager in charge who knows overall the firm operation

8. Would you like to receive a copy of our finding ? ☐ Yes ☐ No?'

If Yes , please give your email address : _____

Thank you very much for your time and assistance

Appendix 3.3

Analysis Result Reliability

Market orientation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.888	.888	18

Competitors Orientation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.814	.745	7

Customer orientation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.799	.811	6

Inter-functional coordination

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.808	.732	5

Innovation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.779	.822	8

Business performance

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.832	.866	5

Appendix 4.1
Assessment of Univariate and Multivariate Normality - Distribution of Standardized Residual

	COMP7	INNO1	TINNO8	INTERF5	TINTERF1	INTERF2	INNO4	CUST1	CUST4	BP4	TBP1	COMP2	INNO3	COMP6
COMP7	0													
INNO1	-0.88	0												
TINNO8	1.069	0.153	0											
INTERF5	-0.242	0.696	1.124	0										
TINTERF1	-1.019	-0.33	-0.578	0.292	0									
INTERF2	0.34	0.318	0.805	-1.029	0.6	0								
INNO4	0.456	-0.903	0.05	0.866	-0.148	-0.514	0							
CUST1	0.758	1.05	-1.208	0.149	-0.765	0.032	-0.18	0						
CUST4	0.999	0.694	-1.098	1.188	-0.278	-0.01	-0.466	0	0					
BP4	1.144	0.758	-0.1	-0.236	-0.556	0.425	-0.003	0.211	-0.59	0				
TBP1	0.671	-0.587	-0.254	0.03	1.014	-0.225	0.799	0.268	0.231	0	0			
COMP2	-0.301	0.015	0.241	-0.178	0.208	0.565	0.391	-0.327	0.211	-0.08	-0.435	0		
INNO3	0.122	0.091	0.037	-0.41	-0.992	0.255	0.528	0.201	-0.012	-0.41	-0.44	-0.457	0	
COMP6	0.126	-0.37	1.045	-0.02	-0.018	-0.215	-0.563	-1.01	-0.669	-0.77	-0.588	0.368	-0.263	0

Appendix 4.2
Correlation Matrix Test Result

Pearson Correlation Matrix (N=371)

	INTERF	COMP	CUST	INNO	BP
INTERF	1				
COMP	0.680	1			
CUSTM	0.597	0.597	1		
INNO	0.728	0.737	0.716	1	
BP	0.450	0.510	0.503	0.618	1

** Correlation is significant at the 0.01 level (1-tailed)

COMP = competitors orientation
CUST = customer orientation
INTERF = Inter-functional coordination
INNO = Innovation
BP = Business Performance

Appendix 4.2a
All Indicators Correlation Matrix Table

	COMP7	INNO1	TINNO8	INTERF5	TINTERF1	INTERF2	INNO4	CUST1	CUST4	BP4	TBP1	COMP2	INNO3	COMP6
COMP7	1													
INNO1	0.260	1												
TINNO8	0.199	0.317	1											
INTERF5	0.231	0.290	0.222	1										
TINTERF1	0.239	0.299	0.230	0.397	1									
INTERF2	0.212	0.266	0.204	0.353	0.364	1								
INNO4	0.279	0.444	0.341	0.312	0.322	0.287	1							
CUST1	0.263	0.369	0.283	0.297	0.306	0.273	0.397	1						
CUST4	0.244	0.343	0.263	0.276	0.284	0.253	0.369	0.598	1					
BP4	0.227	0.322	0.247	0.227	0.234	0.208	0.347	0.328	0.304	1				
TBP1	0.189	0.268	0.205	0.188	0.194	0.173	0.288	0.272	0.253	0.55	1			
COMP2	0.417	0.360	0.276	0.320	0.331	0.295	0.387	0.365	0.339	0.32	0.261	1		
INNO3	0.284	0.452	0.347	0.318	0.328	0.292	0.486	0.404	0.375	0.35	0.293	0.394	1	
COMP6	0.250	0.215	0.165	0.192	0.198	0.176	0.232	0.218	0.203	0.19	0.156	0.346	0.236	1

Appendix 4.3a

Mean, Standard Deviation and Factor Loading of market orientation measure

Questions / Variables	Means weight Statistics	Means weight Std Error	Std. Deviation	Factor Loading
Competitors Orientation – (COMP)	3.78	.024	.393	0.539
1. Managerial staff regularly shares information within our organization regarding our competitors' actions - (COMP1).	3.83	.036	.594	.446
2. We keep informed and analyze the product offers by our competitors. (COMP 2).	3.82	.038	.632	.738
3. Managerial staff target customer where we can have an opportunity for competitive advantage - (COMP3).	3.82	.038	.628	.424
4. Top Management often discuss competitors strengths and strategies - (COMP4).	3.77	.038	.627	.649
5. We usually anticipate how our competitors will response to our competitive move - (COMP 5).	3.72	.037	.617	.441
6. We rapidly response to competitive action that threaten us - (COMP 6).	3.76	.039	.641	.520
7. When I'm faced with decision making situation, I'm willing to take the risk - (COMP 7).	3.78	.039	.641	.561
Customer Orientation - (CUST)	3.85	.029	.475	0.644
8. Our business strategies are driven by our believe about how we can create greater value for customer - (CUST1).	3.82	.040	.668	.740
9. We measure customer satisfaction systematically and frequently - (CUST2).	3.86	.041	.673	.664
10. Our business objectives are driven primarily	3.82	.041	.671	.570

by customer satisfaction - (CUST3).

11. Our competitive advantage is based on our understanding of customer need - (CUST4).	3.80	.039	.637	.757
12. We constantly monitor our level of commitment and orientation to serving customer needs - (CUST5).	3.86	.036	.593	.437
13. We give close attention to after sales services - (CUST6).	3.94	.044	.724	.694
Inter-functional Coordination – (INTERF)	3.81	.028	.457	0.549
14. Our top managers from every function regularly visit our current and perspective customers - (INTERF1).	3.78	.041	.675	.583
15. We freely communicate information about our successful and unsuccessful customer experiences across all business functions - (INTERF2).	3.78	.040	.666	.554
16. All our Business function (Sales, marketing, R&D and finance) are integrated in serving the needs of our target markets - (INTERF3).	3.83	.040	.653	.702
17. All our managers understand how everyone in our business can contribute to creating customer value - (INTERF4).	3.79	.040	.657	.546
18. We share resources with other business units - (INTERF5).	3.85	.039	.639	.588

Appendix 4.3b

Means, Standard Deviation and Factor Loading of Innovations measures

Questions / Variables	Means weight Statistic	Means weight Std Error	Std. Deviation	Factor Loading
Innovation – (INNO)	3.82	.027	.448	0.600
19. For past 5 years the business has developed any new products or service- (INNO1)	3.93	.041	.679	.682
20. For past 5 years, the business has improved The product or services it offers- (INNO2)	3.90	.039	.646	.648
21. For past 5 years, the business has improved its methods of production – (INNO3)	3.79	.039	.644	.664
22. For past 5 years, the business has developed new method of marketing - (INNO4)	3.77	.039	.638	.680
23. For past 5 years, the business has established new markets – (INNO5)	3.82	.041	.681	.692
24. Knowledge allow firm to develop and implement innovation strategies in marketing – (INNO6)	3.81	.044	.720	.519
25. For past 5 years the competitor has provided you the innovative idea – (INNO7)	3.77	.040	.667	.431
26. For past 5 years the customer has provided you the innovative idea - (INNO8)	3.78	.042	.695	.523

Appendix 4.3c :
Means and Standard Deviation of Business Performance measures

Questions / Variables	Means weight Statistic	Means weight Std Error	Std. Deviation	Factor Loading
Business Performance - (BP)	3.68	.030	.493	.750
27. Gross Profit (before tax) – (BP1)	3.66	.038	.628	.733
28. Return of Asset (ROA) – (BP2)	3.64	.037	.615	.741
29. Profitability – (BP3)	3.67	.036	.596	.790
30. Growth – (BP4)	3.69	.037	.608	.748
31. Overall Business success – (BP5)	3.72	.037	.610	.740

Appendix 4.4
The result of Regression Test for all indicator

			Standardized Regression coefficient = Standard B	CR	P
Innovation	<--	Competitors Orientation	.328	2.567	.010
Innovation	<--	Customer Orientation	.339	3.241	.001
Innovation	<--	Inter-functional Coordination	.302	2.337	.019
Business Performance	<--	Competitors Orientation	.119	0.759	.448
Business Performance	<--	Customer Orientation	.116	0.887	.375
Business Performance	<--	Inter-functional Coordination	-.054	-.343	.732
Business Performance	<--	Innovation	.488	2.446	.014
TBP1 (Gross profit)	<--	Business Performance	.674		
BP4 (Growth)	<--	Business Performance	.812	7.180	***
INNO1 (develop new market)	<--	Innovation	.642	9.017	***
INNO3 (Improved method)	<--	Innovation	.704	9.017	***
INNO4 (developed a new method)	<--	Innovation	.691	8.691	***
TINNO8 (customer has provided)	<--	Innovation	.493	6.811	***
TINTERF1 (Top management)	<--	Inter-functional Coordination	.640	7.198	***
INTERF2 (Freely Communication)	<--	Inter-functional Coordination	.570	6.432	***
INTERF5 (Share resources with others Business Unit)	<--	Inter-functional Coordination	.620		
CUST1 (Business Strategy)	<--	Customer Orientation	.802		
CUST4 (Understand Customer Need)	<--	Customer Orientation	.745	9.473	***
COMP2 (Analysis the product offer by Competitors)	<--	Competitors Orientation	.761	6.893	***
COMP6 (competitive action)	<--	Competitors Orientation	.455	5.513	***
COMP7 (risk takers)	<--	Competitors Orientation	.549		

Appendix 4.5
Path Coefficient Signification Test

The equation measure of the model in Appendix 4.4 can be seen as follows:

1. The equation model measure of latent exogenous variable and latent endogenous variable:
   a. Business Performance = 0.674 TBP1(Gross Profit) + 0.812 BP4(Growth)
   b. Customer Orientation = 0.802 CUST1(Business Strategy) + 0.745 CUST4(Understand Customer Need)
   c. Inter-functional Coordination = 0.640 TINTERF1(Top management) + 0.570 INTERF2(Freely Communication) + 0.620 INTERF5(Share resources with others Business Unit)
   d. Innovation = 0.642 INNO1 (develop new market) + 0.704 INNO3(Improved method) + 0.691 INNO4(Developed a new method) + 0.493 TINNO8 (customer has provided)
   e. Competitors Orientation = 0.761COMP2(Analysis the product offer by Competitors) + 0.455 COMP6(competitive action) + 0.549 COMP7(risk takers)

2. The first model regression equation is:

   Innovation = 0.328 Competitors Orientation + 0.339 Customer Orientation + 0.302 Inter-functional Coordination

   The equations can be translated as:

- Regression coefficient of competitors orientation is 0.328, so for every increase of competitors orientation there will be an increase of 0.328 of innovation.
- Regression coefficient of customer orientation is 0.339, so for every increase of customer orientation, there will be an increase of 0.339 of innovation.
- Regression coefficient of inter-functional coordination is 0.302, so for every increase of inter-functional coordination , there will be an increase of 0.302 of innovation.
- Based on the measurement result, the dominant variable toward the Innovation is customer orientation. This is because the regression coefficient was at the highest value at 0.339. Its shows that the variable is very important in increasing the innovation for SMEs in Malaysia.

3. The second model regression equation is:

   Business Performance = 0.119 Competitors Orientation + 0.116 Customer Orientation – 0.054 Inter-functional Coordination + 0.488 Innovation

   This can be interpreted as:

   - Regression coefficient of competitors orientation is 0.119, so for every increase of competitors orientation, there will be an increase of 0.119 of Business Performance.

- Regression coefficient of customer orientation is 0.116, so for every increase of customer orientation, there will be an increase of 0.116 of Business Performance.
- Regression coefficient of inter-functional coordination is - 0.054, so for every increase of inter-functional coordination , there will be an decrease of 0.054 of business performance. And every increase of business performance, there will be an decrease of 0.054 of inter-functional coordination.
- Regression coefficient of innovation is 0.488, so for every increase of innovation there will an increase of 0.488 of business performance.
- Based on the measurement result, the dominant variable toward the business performance is innovation . This is because the regression coefficient was at the highest value at 0.488 coefficients. Its shows that the variable is very important in increasing the business performance for SMEs in Malaysia.