TOTAL QUALITY MANAGEMENT ADOPTION AND PERFORMANCE: A STUDY OF FAMILY OWNED AND NON-FAMILY OWNED ENTERPRISES IN MALAYSIA

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BY

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ABSTRACT

TOTAL QUALITY MANAGEMENT ADOPTION AND PERFORMANCE: A STUDY OF FAMILY OWNED AND NON-FAMILY OWNED ENTERPRISES IN MALAYSIA

Tan Boon In

The relationship between total quality management (TQM) and organizational performance in both manufacturing and service organizations has been previously studied around the world. In Malaysia, there is insufficient research being carried out in the scenario of family owned and non-family owned businesses. Hence, this study will look into ISO certified (or planning to apply for ISO or any other quality certifications) family owned and non-family owned enterprises from the quality management perspective towards improvement in organizational performance based on four perspectives, namely employee satisfaction, customer satisfaction, product quality and strategic business performance. One hundred and eighty six respondents gathered through self-administered questionnaires were analyzed with Partial Least Squares Structural Equation Modeling (PLS-SEM) method to test the relationship between TQM practices (i.e. leadership, strategic planning, human resource management, process management, customer focus and information and analysis) and organizational performance using SmartPLS software. The findings from this study have identified leadership and customer focus positively and significantly associated with organizational performance. In addition, this study also provides evidence that firm size, industry type and firm's ownership (family or non-family owned) do not have moderating effects of TQM practices on organizational performance. The findings of this study offer useful insights for practitioner of

family owned and non-family owned enterprises to evaluate tools that could be effective in the implementation of TQM practices in influencing the organizational performance. The contribution of this study attempts to narrow the gap and reflect the business community from the context of family owned and non-family owned firms who wish to improve organizational performance by implementing TQM practices. It is suggested that six TQM principles selected from the Malcolm Baldrige National Quality Award (MBNQA) model can provide a comprehensive understanding on how TQM practices would influence on organizational performance among the Malaysian's family owned and non-family owned enterprises.

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APPROVAL SHEET

This thesis entitled "**TOTAL QUALITY MANAGEMENT ADOPTION AND PERFORMANCE: A STUDY OF FAMILY OWNED AND NON-FAMILY OWNED ENTERPRISES IN MALAYSIA**" was prepared by **TAN BOON IN** and submitted as partial fulfilment of the requirement for the degree of **Doctor of Philosophy** at Universiti Tunku Abdul Rahman.

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It is hereby certified that **TAN BOON IN (ID No: 10ABD07324)** has completed this dissertation entitled "**TOTAL QUALITY MANAGEMENT ADOPTION AND PERFORMANCE: A STUDY OF FAMILY OWNED AND NON-FAMILY OWNED ENTERPRISES IN MALAYSIA**" under the supervision of **Dr. WONG KEE LUEN** (Supervisor) from the Department of Commerce and Accountancy, Faculty of Business and Finance and **Prof. Dr. CHOONG CHEE KEONG** (Co-Supervisor) from the Department of Economics, Faculty of Business and Finance.

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Yours truly,

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(TAN BOON IN)

DECLARATION

I TAN BOON IN hereby declare that the thesis is based on my original work except for the quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
CEO	Chief Executive Officer
CR	Composite Reliability
EFQM	European Foundation for Quality Management
EQA	European Quality Award
FMM	Federation of Manufacturers Malaysia
JUSE	Union of Japanese Scientists and Engineers
MBNQA	Malcolm Baldrige National Quality Award
PDCA	Plan-Do-Check-Act
PLS-SEM	Partial Least Squares Structural Equation Modeling
SME	Small and Medium Enterprise
SQC	Statistical Quality Control
TQC	Total Quality Control
TQM	Total quality management
VIF	Variance Inflation Factor

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Total quality management, also known as TQM, can be defined as a business management strategy that seeks to improve the quality of organizational management, and hence to improve its overall effectiveness and performance (Ooi, Safa, & Arumugam, 2006). TQM's ubiquitous has elevated itself into top management research agenda with dedicated journals (Taylor & Wright, 2006) as an important area for research in the past two decades. The function of TQM is comprehensively known to be vital in the success and survival of both manufacturing and service sectors (Ooi, Arumugam, Teh, & Chong, 2008). Previous empirical studies have proven that the effective adoption of TQM practices can produce enhancements in the area of competitive abilities in the marketplace (Sinha, Garg & Dhall ,2016;, Neyestani & Juanzon, 2016; Anderson, Rungtusanatham, & Schroeder, 1994); improve innovation performance, Yusr (2016), lower manufacturing cost and improved productivity (Garvin, 1983); provide a competitive advantage for organizations (Chong, Ooi, Chong, & Tan, 2009); and lead to improvements in overall organizational performances (Anderson & Sohal; 1999; Flynn, Schroeder, & Sakakibara, 1995; Millen, Sohal, & Moss, 1999; Samson & Terziovski, 1999; Terziovski & Samson, 1999; 2000). Moreover, Prajogo and Sohal (2004a) stated that TQM has been widely accepted as a management model if the approach is implemented successfully.

The uniqueness of family owned enterprise owes its characteristics to the intermingling of family relationship in the enterprise itself as well as the intention of passing of the enterprise ownership to the next of kin as one of the most important criteria (Davis &

Harveston 1998). At the same time, family owned enterprise has been known to play a key role in all economies regardless of whether in the developed world or the developing world. For examples family-run businesses account for 61% of all private sector firms in the UK with more than 3 million family businesses in the UK, which between them provide 9.4 million jobs and generate 25pc of GDP (Bridge, 2015). In India family owned business account for almost two-thirds of India's GDP. Many of the companies in the country are run by families and that these organisations employ approximately half of the country's work force (FFI, 2016).

And in Malaysia 70% of the public listed in Malaysia is family owned (Amran & Ahmad, 2010). In the Top 50 richest Malaysians in 2016 listed by Forbes Asia, a vast majority of them were controlling or managing public listed companies or businesses which are family owned business in nature such as Perlis Plantation Berhad (Robert Kuok & Family), Genting Berhad (Tan Sri Lim Kok Thay & Family), Hong Leong Group (Tan Sri Kek Leng Chan & Family), YTL Corporation Bhd (Tan Sri Yeoh Tiong Lay & family), IOI Corporation Bhd (Tan Sri Lee Shin Cheng & Family) and Amcorp Berhad (Tan Sr Azmin Hashim & family) just to name a few. These businesses are found in all sectors of Malaysian economy ranging from banking, plantation, retail, hotels, real estate, e-commerce, oil & gas etc. in Malaysia, Singapore, Hong Kong, Australia, China UK and many parts of the world. Moreover these ultrahigh net worth individuals between them control a total estimated wealth of USD129b or equivalent to about 38% of the Malaysian GDP (Appendix I). Of these 50 richest persons, the wealth or businesses will be handed down to their next of kin, therefore business performance and sustainability shall hold as one of the top priority in order for the wealth to be transferred safely to the future generations (Davis & Harveston 1998). In addition to these prominent tycoons, there are 645,136 establishments of small and medium enterprises (SME) owned and managed by families playing a key role in the economy in

Malaysia. Of these SME 90% are in services, 6% are involved in manufacturing sector and balance are in construction, agriculture and mining (SME Corp Malaysia, 2016). On the macro perspective, in 2015, services made up 52% of the Malaysia' GDP (excluding government services which is about 8%), manufacturing contributed 22%, quarry & mining 9% and agriculture made up 8% the contribution by sector to the Malaysian (Bank Negara Malaysia, 2016)

Malaysia's economy is classified as an open economy where export and import sectors recorded 130% of the country's GDP. Malaysia was ranked at 24th globally in terms of export to GDP ratio in 2014 at 72% (The Global Economy, 2016). Furthermore, Malaysia being one of the lowest tariff economy in the world (except for passenger cars where the import tariff remained high), many world's popular brands of products services are available in the country. For examples, the presence of fast moving consumer products giants such as Unilever, Proctor & Gamble, Nestle, Kao's and services company such as Starbucks, KFC, McDonald, 7-Eleven, Tesco, AEON, DHL, FedEx etc. has created tremendous pressure to the local companies to be competitive, efficient and need to innovate to be able to sustain the organization life span. Due to the above characteristics of the country's openness in economic activities, Malaysian firms face intense competition from most global companies in the world. To remain competitive and maintain their sustainability in spite of the competition they are facing, firms in Malaysia are always aiming to improve their performance in order be efficient, profitable and achieve market leadership. To maintain competitiveness and market leadership one of the most effective approach is through enhancing the quality improvement and quality management in the enterprise be it family owned or non-family owned enterprise. (Arumugam, Ooi, & Fong, 2008). Quality management is an universal concept that have been widely accepted by all to enhance competitiveness and to improve performance. In this thesis

TQM being the leading concept in the quality management is used to further develop the study on the effectiveness in both manufacturing and service sectors companies in Malaysia.

In the manufacturing sector, the technology and competitive advantage has moved from mass production with standardization of products to mass customization and innovation. In mass standardization era, manufacturing firms were competing on efficiency to be cost leader and hoping to outsell competitors with commodity that goes with the lowest price. In addition manufacturing firms do take into consideration of the quality expectation demanded by the consumers (Radder & Louw, 1999). However, with mass customization and innovation, it requires firms to be flexible and creative in its approach in management, managing quality expectation has become even more challenging.

On the other hand, service firms are providing intangible products that must be consumed on the spot and cannot be stored. More often than not, it requires more human touch that it is difficult to maintain in its consistency in terms of delivery. Even though with a set of fixed standard operating procedures (SOP) is designed with the purpose of achieving consistency in the service delivery, but whether the SOP is followed strictly depends on the contact persons with the consumer. Furthermore service SOP will create other problems such as issues of flexibility and lacking of variety in customer solutions (Dotchin & Oakland, 1994; Parasuraman, Zeithaml, & Berry, 1985).

Due to the challenges of maintaining the quality of the product and consistency of service delivery quality, TQM concept with the aim of achieving performance management is proposed in this thesis for the study of its effectiveness and organization performance.

At the same time, despite the ubiquitous of TQM concept and the significant contribution of family owned enterprise in the economy in Malaysia, there is limited literature focus on the perception of the role of TQM in family owned enterprise implementation and its effectiveness in Malaysia. This thesis aims to fill the gap and study the effectiveness of the

application of TQM concepts in driving organization performance in particular compares the effectiveness between family owned and non-family owned enterprise in the country in terms of TQM application. This research is especially significant in contribution as the research on family owned enterprise has only began to get some attention in the recent years in Malaysia as it was never in the mainstream of the curriculum for business management courses even though the contribution of family owned enterprise in the economy is many ways significant (Ibrahim & Samad, 2010).

1.2 Problem Statement

In spite of the fact that the relationship between TQM and organizational performance in both manufacturing and service organizations (Flynn, Schroeder, & Sakakibara, 1995; Jitpaiboon & Rao, 2007; Teh, Yong, Arumugam, & Ooi, 2009) has been previously studied around the world, generally the research in this area in Malaysia is found to be still lacking especially research related to the family owned business in Malaysia from the perspective of TQM concept and application. In Malaysia's context, based on the literature search, only a few studies were carried out related to the subject of TQM and organization performance. Most of the literature concerning Malaysian firms and TQM reviewed from this study were from the perspective of customer satisfaction (Agus, 2004; Sit, Ooi, Lin & Chong, 2009), small and medium enterprise (SME) (Rahman & Tannock, 2005; Sohail & Teo, 2003) and financial performance (Agus & Sagir, 2001).

Even though there were research carried out on the relationship of TQM practices and family owned business performance in other parts of the world (Ellington, Jones & Deane, 1996; Ryan & Moss, 2005), in Malaysia, there is insufficient research being carried out in the scenario of family owned business performance from the TQM perspective. Despite the fact that other than the government linked companies and multi-national company, most of the

privately owned or even many of the public listed companies in Malaysia are family owned (Ibrahim & Samad, 2010), the contribution from family owned business to the economy has not been acknowledged officially either by the government or the family owned business operator themselves. In fact, compare to the non-family owned business enterprise, anecdotal evidence is that family-owned enterprise is not a preferred place to work for or it is not a place to develop one's career. At the same time, there isn't any sufficient research on the level of awareness in terms of quality management among these family owned companies in Malaysia, not to mention the practice of TQM among them. As family owned enterprise play a very key role in our economy both in developed world as well as in developing economies such as Malaysia, applying TQM practices towards achieving family firms' performance is strategically vital for sustaining the family owned business life span. Family owned firms carry some unique characteristics that are differed from other types of organization. One of which is the intention for the relevant family to pass down the business to the next generation, for example Ernst & Young (2012) pointed out that two third of the major enterprise in the world intends to keep the business across generations. In order for the family owned enterprise be passed down to the next generations, the respective firms need to be healthy and properly managed so that it is sustainable (Daspit, Holt, Chrisman & Long, 2016 and Tan, 2015). This research will argue that TQM practices are useful for improving the performance of the business organizations. At the same time compares to the total number of firms in Malaysia, firms that have formal quality certification program is still a small percentage term (Centrex 2018) and the results from this research should encourage more adoption of TQM programs by the practitioners. Thus, understanding TQM practices among the family owned enterprise warrants more research from the researchers especially in Malaysia where as it is there is no such study carried out. This study wishes to narrow the knowledge gap through research using questionnaire survey on the business community who are with hands-on

experience in practising TQM and investigate the relationship with the family owned and non-family owned business performance.

Hence, this study will look into quality conscious companies such as ISO 9001 certified or companies (Magd & Curry, 2003; Rohaizan & Tan, 2011) or companies with any other quality certifications such as HACCP (or planning to apply for certification) from family owned businesses as well as non-family owned enterprise and compare their performance from the TQM perspective. This research is different from the current work on the links between TQM and business accomplishments in the developed countries from the West as it includes in the study on the perception of TQM adoption among family owned firms' performance in the developing economy such as Malaysia where family relationship among members of the family is believed to be stronger than the Western world due to the factors of Asian culture and traditional values which are different from the Western world (Hofstede, 2010).

1.3 Research Questions

To explore the relationship between TQM practices and organization performance more so on the family owned enterprise especially when compared to non-family owned enterprise, a few research questions have been raised and we need to answer them accordingly to have a holistic understanding of the subject issues. Based on the above research background and knowledge gap currently the following five research questions are formulated.

Firstly, the first fundamental question we need to explore is there any positive relationship between TQM practices and performance (such as revenue growth and market share, product quality, customer satisfaction), whether from the family owned business or non-family owned enterprise? A positive relationship will denote the more firms apply the TQM practices, the firm's performance should be better. Next, as we understood from the

subsequent literature review, there were a few commonly accepted TQM practices that have been used by organizations and researchers (Ooi 2014, Solis, Rao, Raghu-Nathan, Chen, & Pan, 1998) for TQM principles and its application. In this thesis study the researcher has chosen and identified six among them, namely strategic planning, process management, leadership, information and analysis; customer focus and human resource management (HRM) which are based on the America's Malcom Baldrige National Quality Award (MBNQA) (Solis, Rao, Raghu-Nathan, Chen, & Pan, 1998) As there are more than one commonly TQM practices, the researcher takes this opportunity to explore and analyze the strength of each of the selected practices and at the same time to identify TQM practices that have the strong positive relationship with the organization performance. This identification will contribute to the literature and practical body of knowledge of management from the TQM perspective where it will assist practitioner to identify practices that are found to be useful and effective for organizational performance objective.

Last but not least, to further validate the proposed research model, which will be describe in detailed in the subsequent chapters, the comparison between the subgroup analysis will provide more comprehensive understanding of the relationship between TQM practices and organizational performance; whether is there any difference in the relationship between TQM practices and organizational between the sub-group by i) firm size (large vis-a-vis small-medium sized firms), ii) type of firm (industry) (manufacturing vis-a-vis service sector firms) and by firm's ownership (whether family owned or non-family owned).

Henceforth, the following five research questions are formulated for this study:-

RQ1: Do the identified TQM practices namely leadership, strategic planning, customer focus, information & analysis, process management and human resource

management, have any positive relationship with organizational performance in the Malaysian family owned and non-family owned enterprise?

RQ2: Which TQM practices have the strongest relationship with (family owned and non-family owned) organizational performance?

RQ3: Does the strength of the relationship between TQM practices and organizational performance change when the relationship is moderated by firm size (i.e. small firms and large firms)?

RQ4: Does the strength of the relationship between TQM practices and organizational performance change when the relationship is moderated by industry type? (i.e. manufacturing firms and service firms)?

RQ5: Does the strength of relationship between TQM practices and organizational performance change when the relationship is moderated by firm's ownership (i.e. the family owned firms and non-family owned firms)?

1.4 Research Objectives

In line with the research questions above, this study will provide an empirical analysis aiming to achieve the five research objectives (RO) listed here in this study:

RO1: To determine whether there are any relationship between TQM practices and organizational performance within the Malaysian family owned and non-family owned enterprise.

RO2: To determine which TQM practices have the strongest relationships with organizational performance.

RO3: To determine whether if there is any difference in the strength of the relationship between TQM practices and organizational performance by firm size between small & medium sized firms and large firms.

RO4: To determine whether if there is any difference in the strength of the relationship between TQM practices and organizational performance by industry type between manufacturing firms and service firms.

RO5: To determine whether if there is any difference in the strength of the relationship between TQM practices and organizational performance by firm's ownership between the family-owned firms and non-family owned firms.

1.5 Scope of the Study

This study covers on the family owned firms and non-family owned firms that have obtained or planning to obtain ISO9000 or any other quality certificates such as HACCP within the Malaysian context. The selection of firms with quality certifications to represent or denote firms with TQM practices have been carried by many researchers prior to this study such as Idris, McEwan, and Belavendram (1996), Magd and Curry (2003) and Rohaizan and Tan (2011). The managers/executives from the sampling elements were selected as the unit of analysis as they have a better understanding on the quality management level in their firms. Each representative from an organization/firm to answer a self-administer questionnaire that complete one sampling unit. This study is based on quantitative method where the methodology is discussed in more detailed in Chapter 4. The TQM principles being selected and examined in this study are limited to only six principles based on the Malcolm Baldrige National Quality Award (MBNQA) model (Sun & Cheng, 2002).

At the same time the strength of the relationship among the TQM practices were compared and identified. The study further compares the TQM relationship with

organizational performance between firms from manufacturing sector with firms with service sector; the comparison of the strength of relationships between TQM practices and organizational performance between big firms and small and medium sized firms and last but not least the study also compares the strength of relationships between TQM practices and organizational performance between family owned and non-family owned firms.

1.6 Significance of the Study

Based on the literature review, many studies concluded that there is a positive relationship between TQM practices and organizational performance (da Silva Jonas, Kikuo, & Tadashi, 2002; Fotopoulos & Psomas 2010; Prabhu, Appleby, Yarrow, & Mitchell 2000). However, there are many different findings of which TQM practices contribute the most to the positive relationship or non-at all (da Silva Jonas, Kikuo, & Tadashi, 2002, Ooi, Safa, & Arumugam, 2006.). Furthermore, the study will show whether there is any differences in terms of the relationship between TQM practices and organizational performance between firm with different sizes (small & medium compares to large firms); firms from different sector (manufacturing and services firms) and firm's ownership (family owned and nonfamily owned firms).

The contributions of this research can be divided into theoretical contributions and managerial contributions.

1.6.1 Theoretical Contributions

From the theoretical point of view, this research has extended previous studies carried out in most of the Western countries and provides potential to enrich TQM literatures with a better awareness of the impact of TQM practices on its effect on organizational performance. This research with the analysis carried out using structural equation modelling through

employing SMART PLS technique will add to the theoretical contribution in terms of analyzing the relationship between TQM practices and family owned organizational performance, which is limited in the current literature, more so in the Malaysian context. Furthermore, the research carried out will analyze the identified six TQM dimensions and their relationship with organizational performance together with three moderators namely size of the firms, industry of the firms belong to; and the ownership types of the firms (family-owned and non-family owned). The findings will greatly enhance the knowledge of management of family-owned business from more holistic perspective and add on to the current stocks of literature.

1.6.2 Managerial Contributions

This research will further validate the theoretical proposal of TQM practices that could contribute to the actual organization performance improvement practices. Managers would be able to have a more in depth understanding of the TQM practices in their quest to improve the organizational performance though active quality and continuous improvement management within the organization. From the study, practitioner could use the identification of which TQM practices are more effective in helping to achieve organization performance improvement. Secondly practitioner would also be able to know whether there are any differences in terms of their firm size (small & medium or large), firm ownership (family owned or non-family owned) and sector of the business (service or manufacturing) has any effect on the relationship of TQM practices with organizational performance. Thus would help them to make a better decision which TQM practices are suitable for their own firm based on the characteristics of the firms and they industry they belong to.

1.7 Definition of Terms

TQM:

TQM is a set of systematic activities carried out by the entire organization to effectively and efficiently achieve the organization's objectives so as to provide products and services with a level of quality that satisfies customers, at the appropriate time and price (JUSE, 2013).

Management:

According to Peter Drucker (Bagad, 2009), "Management is a multipurpose organ that manages a business and manages managers and manages workers and work." (p.1-4). Management includes administration, setting strategy for an organization, management employees, processes and resources to achieve the agreed objectives.

Leadership:

Anderson, Rungtusanatham, and Schroeder (1994) explain the concept of leadership as: The ability of top management to establish, practice, and led a long-term vision for the company, driven by changing customer needs, as opposed to the role of internal management controls.

Strategic Planning:

Strategic planning is associated to setting and adopting long-term goals and mission so that these organizational objectives can be accomplished efficiently and effectively (Wong, Sim, Lam, Loke, & Darmawan, 2010).

Customer Focus:

Customer focus can be defined as the extent to which a company continues to meet customer needs and expectations (Philips Quality, 1995).

Process Management:

Process management can be defined as the behavioral and systematic practices that are vital to dealing the process rather than the results (Anderson, Rungtusanatham, & Schroeder, 1994; Teh, Ooi, & Yong, 2008; Ooi, 2009).

Information and Analysis:

Information and analysis can be defined as the scope, management and use of data and information to maintain a customer focus, to drive good quality control and to improve performance (Malcolm Baldrige National Quality Award, 1997).

Human Resource Management:

Human resource management plays the role of acquiring, developing, utilizing and retaining employees in an organization (Ferris, Rosen, & Barnum, 1995).

Organizational Performance:

Organizational performance consists of employee satisfaction, customer satisfaction, product quality and strategic business performance which reveal that the impact of performing business, show the ability of a firm's competitiveness in the marketplace and its financial health and predict its future failure or success (Zhang, 2000a)

1.8 Conclusion

This chapter has laid out the background and rationale of the research to be carried out for the thesis. The background of TQM and family owned business was introduced. The rationale for further was presented and research question and research objectives were

presented. Last but not least the expected outcome and contribution for this research were also discussed. This introductory chapter has helped to clarify the need to the research and the gap and new knowledge literature are to be expected from the end of the thesis work to be carried out in the subsequent chapters.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

This chapter covers three important topics and begins with the literature review of TQM practices, organizational performance and family owned enterprise. It comprises the following subsections: the evolution of quality management, explore the variety of quality prescriptions by the quality gurus, quality award models, review of TQM concept, review of key practices of TQM, review of organizational performance and review of family owned enterprise. The last subsection of this chapter outlines a summary for the theoretical framework and hypotheses development to be exposed in next chapter.

2.2 The Evolution of Quality Management

Quality management, as defined by Flynn, Schroeder, and Sakakibara (1994), is an assimilation of accomplishing and maintaining quality excellence in the course of continuous process improvements and preclusion of defects to meeting customer expectations. It emphasized on quality initiatives such as total quality management, zero defects or statistical quality control which are commonly reported as principal tool for achieving competitive advantage within their respective industries (Chakrabarty & Tan, 2007). These tools have been established to be keys to strategies for organizational leaders (Williams, Wiele, Iwaardeen, & Visser, 2004) for further developing their business strategy (Cheng & Choy, 2007). However, due to different environment and circumstances, organizations tend to develop different quality management systems and quality practices in accordance to their own business strategy to compete effectively in the market (Prajogo, 2016 and Lau, Zhao, &

Xiao, 2004). Dale, Lascelles and Boarden (1990), Garvin (1988), and Holmegaard (1990) believed that organizations pass through several stages of quality management development and eventually quality discipline is recognized and adopted as one of the strategic tools for the management.

Quality has become a subject study when the Western economy was industrialized and moved into mass production in the late nineteenth century. Whereas in the early twentieth when scientific management was introduced by FW Taylor and evolved, quality management began to become more prominent in the course of business. In fact as early as 1907, in Germany the concept of product quality was introduced in forming the German Association of Craftsmen or *Deutscher Werkbund* by Herman Muthesius, Friedrich Newman and Karl Schmidt for the purpose of making German products to be more competitive in the world (Europe) market (Giaccio, Canfora, & Del Signore, 2013). The history of quality management is intertwined with the history of production especially in the early stage of industrialization and production. While on the one hand engineers were busy designing the best and most efficient mass production system such as Ford on the T-model, they also must ensure the products are able to perform its function. In the mass production era, the main objective of production and quality management was to ensure the products churned out from the factory were able to fulfill the product functionality. This was evident especially after the Second World War where the quality improvement was very much based on the military led concept where statistical quality control (SQC) and analysis was the central of the concept and tools.

The concept of meeting the expectation of the market or consumer was never take off until the market becomes more competitive and the consumers are provided with multiple choices of the products being offered in the market place (Giaccio, Canfora, & Del Signore, 2013). More so from the late 1970s onward when Japanese cars and electrical and electronic taken the world market share by storm, even breaking into the Western market that gave a

sudden jolt to the Western industrialists. The quality of the Japanese products was exceeding the Western products which were never expected to be in the recent history. To thwart the challenges from the Japanese perceived high quality products the more companies are paying attention to the quality management where more wholesome approach with emphasis of input (management practices) such as leadership, information management, human resource management etc. (Flynn, Schroeder, and Sakakibara, 1994). The whole world came to the realization that what quality achievement can be done that have been demonstrated by the Japanese counterpart. Consumer products from Japan were once seen as much inferior to the West could beat them in the home country. The word 'quality' become the key word that everyone was talking about in the 1980s to 1990s, books and research were produced in search of the secret of better product, better packaging, better services and better performance.

Many concepts of quality and quality management were developed and we have selected a few listed below based the stage of development for further understanding of the concept of quality, quality management and TQM. The different stages of quality concept, quality management and TQM were generally divided into four stages, namely quality inspection, statistical quality control, quality assurance stage, and subsequently to strategic quality management (Garvin, 1988).

2.2.1 Quality Inspection Stage

The first stage of quality development is quality inspection. In the early stage of quality management, it was more of the checking of the finished product, where the defect products are rejected after the production line. It is correction action at the end of production cycle of products and services to ensure the compliance to quality standard and product specifications. Inspection works such as counting, sorting and grading were carried out by trained quality inspectors. At this is stage, it was later realized by the management when defect products are

discovered, it will be too late, cost has been incurred and order from customers could not be fulfilled due to high reject rate. At this stage quality management was at the elementary stage which was the off shoot of the introduction of the mass production system after industrialization. Product produced conformity to the functionality was the key determinant of quality assessment.

2.2.2 Statistical Quality Control Stage

The second stage of quality development is statistical quality control. It is quality evaluation via the application of statistics such as process control charts and sampling techniques in the scientific manner. During the Second World War in 1940s, statistical techniques and quality control charts were used to monitor production process and evaluating quality compliance. The person who has been widely recognized as the main contributor to SQC was Walter Shewhart. Shewhart not only proposed the statistical control which is being used up to today as one of the effective management tools, he has also proposed the role of the management lies in PDSA, Plan, Do, Study Act (Goeff, 2001). This was later adopted by Deming which will be explained in more detail in the subsequent sections. By using statistical quality control chart, variability or changes from the mean will be detected and eliminated during the production process and thus reduce defective units are being produced. At this stage, it is an improvement from the first stage where defects are to be detected or avoided along the production process, not until at the end of the finished products.

2.2.3 Quality Assurance Stage

The third stage of quality improvement is quality assurance. At this stage quality is no longer a narrow, manufacturing-based discipline. It emphasizes on designing and monitoring total quality control starting from planning, designing, documenting, cost of quality, statistical

process control and third-party certification to customer service (Garvin, 1988). In this stage, quality assurance is divided into four components: cost of quality, total quality control, reliability engineering and zero defects.

2.2.3.1 Cost of Quality

According to Juran, cost of quality is the details of quality cost associated with defective products (Zhang 2000a). Defective product will create the cost of repairing and re-working. Cost of quality program gathers and reports products quality related costs incurred and its management tool is classified into four elements as follows:

i) Internal failure cost – costs incurred on defective products before delivering to customers. For example, spoilage, rework, scraps etc.

ii) External failure cost – costs incurred on defective products after delivering to customers. For example, warranty repairs, liability claims, cost of returned products etc.

ii) Appraisal cost – costs incurred in the investigation of the individual units of products which do not meet the specifications. For example, product testing, product inspection and evaluation, design analysis etc.

iii) Prevention costs – costs incurred to prevent the production of products that do not meet the specifications. For example, preventive equipment maintenance, design engineering, process engineering, quality training.

2.2.3.2 Total Quality Control

According to Martinez-Lorente, Dewhurst, and Dale (1998) the origin of TQM could be traced from Total Quality Control (TQC) where Feigenbaum defines TQC as:

"An effective system for integrating the quality development, quality maintenance and quality improvement efforts of the various groups in an organization so as to enable production and service at the most economical levels which allow for full customer satisfaction".

This is also concurred by Teh (2010) where she opines total quality control is the basis for the development of TQM. TQM concept expands from total quality control that was proposed by Feigenbaum (1991) based on the functions of quality costs, quality assurance and quality system. These were further developed by considering the management implications and quality management methods at every management level of the organization in order to satisfying customers' needs. TQM concept was further evolved from TQC and suggested customer focus, employee empowerment, continuous improvement and systematic process for improvement as dimensions for organization to exploit and give due attention for quality management (Anderson, Rungtusanatham, & Schroeder, 1994; Waldman, 1994; Westphal, Gulati, & Shortell, 1997).

2.2.3.3 Reliability Engineering

Reliability, as defined by Elsayed (2012, p.3), is the probability a product will operate or a service will be provided properly for a specific period of time (design life) under the design operating conditions (such as temperature, load, volt….) without failure. Whereas, reliability deficiencies will result in reduction or loss of efficacy, increased cost and compromised safety due to increased parts replenishment repair and maintenance (Zhang, 2000a). Through reliability engineering we can review the design process, find the root cause of failures,

identify critical path, reduce failure rates and increase resistance of product failures (Bergman & Klefsjö, 1994; Feigenbaum, 1991).

2.2.3.4 Zero Defects

Zero Defects was originally proposed by Crosby in 1950s. Crosby also proposed to empower employees and place the responsibility of quality into the employees' hands, this will yield positive result for quality performance (Milgram, Spector, & Treger, 1999). According to Aboulnaga (1998), the concept of zero defects is a performance standard whereby top management is personally directing the zero defects program in turning to attempt and respond enthusiastically for quality improvement. Zero defects program is to putting employees for the conformance to specification and to achieve error-free work (Vroman & Luchsinger, 1994).

2.2.4 Strategic Quality Management

The last stage of quality development is strategic quality. It emerges from top management involvement on embracing and recognizing the strategies aspects of quality at every level of organization in order to maximize competitive opportunities (Garvin, 1988). In this respect, top management is involved for a change in corporate culture and continuous improvement of quality which tend to be defined from customer expectation and market competition. MBNQA is widely regarded as a framework for organizations to evaluate the achievement of strategic quality management (Lau, Zhao, & Xiao, 2004). At this stage, the emphasis of quality management has elevated quality to the strategical level where achieving quality performance is one of the tool for achieving competitive advantage for the organization.

2.2.5 Summary

This section began with reviewing the evolution of quality management that provides an overview description of the quality framework to be employed. The overall quality management knowledge and practices can be summarized in four major stages: (1) quality inspection, (2) statistical quality control, (3) reliability engineering, and (4) zero defects. This subsection presents the key features and differences between each stages of quality management. The following section presents the main early quality management and TQM concept proponents in the early years many of whom are now considered as quality gurus.

2.3 Quality Prescriptions by Quality Gurus

There are many quality gurus identified from our study on a comprehensive review of literature to be associated with the quality management and TQM concept, the key figures identified are Deming (1986), Juran (Juran & Gryna, 1993), Crosby (1979), Ishikawa (1985) and Feigenbaum (1991). Each of the individual prescription to TQM as proposed by these quality gurus is served as the foundation of TQM concept which is covered in greater details in the following subsections.

2.3.1 W Edwards Deming (1900 – 1993)

W Edwards Deming was an American statistician who was credited with the rise of Japan as a successful manufacturing nation with his works on helping the Japanese manufacturing firms to improve their product quality with a big leap. Deming studied electrical engineering at University of Wyoming and did his postgraduate at University of Colorado (MSc) and University of Yale (PhD). After the Second World War, Deming went to Japan first to be involved in census of the Japanese population. He later taught SPC

(statistical process control) to Japanese engineers - a door opens to the future quality management and improvement that enabled the Japanese to gain renowned reputation for their high quality goods. For his significant contribution to the quality achievement in Japan, Deming was awarded a medal by the Japanese Emperor in 1960.

After returning to the USA and living in private life for some time, Deming completed a book "Out of Crisis" in 1986, which aims at telling the American manufacturing sector with possible ways of being competitive against the onslaught of the Japanese products in the world market. Even though the term TQM or its concept was not suggested by Deming, but Deming is widely credited for his original ideas of launching quality management as one important aspect for firm's management to remain competitive (Deming, 1986).

Deming (1986) states that quality is determined by customers' expectation, therefore customer satisfaction affects the quality uprising. With his background in statistics, Deming is famous for developing a system of statistical quality control as a management tool (Saunders, 1995). He stressed that managers create the systems and processes with combination of a good design and effective production methods at all stages could assure quality.

The fundamental of Deming's philosophy of quality improvement is focus on system and top management's involvement and it is their responsibility for the firm's performance. Deming (1986) stressed that top management plays the role to lead in changing system in pursuit of continuous improvement such as to identify customer requirements, to create supplier partnership, to enhance employee skills and to solve quality problems. In addition, in line with his philosophy to focus on the nature of organization, the significance of leadership and the need to diminish variation in the processes, he insisted that adoption of *Deming's 14 points* must be taken at all levels of organizations (Anderson, Rungtusanatham, & Schroeder, 1994; Evans & Dean, 2003).

One of the key benefits of ensuring quality at all levels is the virtual cyclical benefits for all in the system, as he described in the Deming Chain Reaction "As improvement of quality will reduces costs and increased productivity, which in turn to create more jobs, better market share and sustainability for long term survival" (Deming, 1986).

Contribution from Deming in the quality arena is widely regarded and the amount is enormous. He is one of the earliest scholars to propose the virtual of having a system of knowledge whereby he coined it *the system of profound knowledge.* The system of profound knowledge consists of four interrelated elements, namely theory of systems, theory of variation, theory of knowledge and knowledge of psychology. These four systems are interacting with each other to form the interaction between managers and workers.

i. Theory of system

A system refers to a collection of activities or actions that work together within an organization for the accomplishment of an organization's objective (Deming, 1993). He further adds, no operation from system that could cause disintegration, inconsistency and excessive of internal and external influences of the organization which affects performance.

ii. Theory of variation

Variance is categorized into: (1) controlled variance, which the variance is controllable in the normal processes; and (2) uncontrolled variance, which the variance is uncontrollable in the normal processes. He suggested that organization incurs higher costs of operation is due to management being unable to segregate the cause of the variation (Deming, 1986). Deming stresses that measurement of variation gives a means for forecasting the behavior of the system. As a result, knowledge of statistical theory is important for managers to

collect the appropriate data and apply the relevant methods for the measurement of variation of a particular system.

iii. Theory of knowledge

As believed by Deming, applying scientific management in the processes of explanation, prediction and control enable managers to explore more knowledge about the processes and systems in the organizations.

iv. Knowledge of psychology

Deming describe language for the people in the workplace, methods of learning, team performance, and organizational culture as knowledge of psychology. As suggested by Deming, managers should be clear of how people interact, their working environment, individual needs, and learning styles.

2.3.1.1 The Plan-Do-Check-Act (PDCA) Cycle

Deming also proposed a management checklist or soft tool called Plan-Do-Check-Act (PDCA) Cycle which was adopted from Shewhart and referred to as Shewhart Cycle by Deming (Shewhart was working for Bell Laboratories and has most profound influence on Deming in his early career days). As this management tool was popularized by Deming, some also referred it as the Deming Cycle (Hill, 2008). PDCA cycle is the application of scientific method towards continuous process management which focuses on meeting the demand from customers (Deming, 1986; Mann, 1992; Dale, 1999). It expects a company to continue to improve to meet the continuous change in technologies and customers' behavior. Four steps are involves in the PDCA Cycle in a clockwise cycle:

P – Plan Planning begins with the problems related to customer indicator such as complaints or rate of defections on goods. After analyzing the problems and the cost alternatives, setting the objective, develop the action plan with workable solution, improvement opportunity and the implementation target.

D – Do Implement the plan and carry out the act and execution to solve the problems, it may involve some trial element as it was meant to be exploratory to solve problem or for the change in the process management. The plan implemented is monitored by collecting data continuously on performance measures. This stage is the implementation of the change intended.

C – Check Analyze the collected data, observe and review the effects of the test, find out the solution against the intended plan step. At this stage, analysis is carried out to check whether the change has yielded any positive results to meet the customer's requirement.

A – Act Study the results and act on what was learned. If result is successful, the revised process is being standardized. Further feedback from customer is also collected to make further improvement.

While Deming may not have decided on what the definition of quality is, he is clearly a strong proponent of producing something that meets customer's demand which rather revolutionary compared to the efficient production focus concept in those days.

2.3.1.2 Deming's 14 Points

According to Knouse, Carson, Carson, and Heady (2009), Deming's 14 points is a favorable quality improvement approach. The concepts of his 14 points could be applied anywhere, to manufacturing, service industry, to large as well as small organization (Dale, 2003). Deming's work focuses on customer satisfaction and it serves as fundamental directions and guidance for quality improvement. To implement the Deming's 14 Points, management has to emphasize on long term thinking instead of short term thinking of the organization.

Deming's 14 Points (Source: Walton, 1990, pp. 17-18 as cited by Ya'acob, 2008) are:

i. Create constancy of purpose towards continual improvement of products and services through maintenance, research and innovation.

ii. Adopt the new philosophy towards a customer driven approach for eco constancy in a never ending improvement cycle by enhancing mutual cooperation between management and labour.

iii. Cease or chase dependence on mass production to improve quality. Workers liable to make defects instead of passing the problems to inspectors.

iv. End the exercise of awarding business based on price tagging. Seek on purchasing for the lowest price and the best quality based on a total cost assessment of long term relationship with a single loyalty good supplier.

v. Improve constantly and forever the system by reducing waste, eliminating common cause and special cause of variations to look for continually improvement of quality.

vi. Institute on the job training to discover better ways and learning through experience.

vii. Institute leadership and supervision improve production.

viii. Drive out fear such as fear of failure, fear of punishment, fear of weakness, fear of loosing control, fear of change so that workers feel secure to increase efficiency, effectiveness and productivity.

ix. Break down barriers, conflict or competing with each other between departments, units and staff.

x. No slogans, posters and exhortations. Workers create their own slogans help to enhance motivation from leadership and trust.

xi. (a) Abolishment numerical quotas and work standards. Setting quotas lead to fear, frustration and discouraging for improvement.

(b) Abolishment management by objectives, numbers and numerical goals.

xii. Eliminate barriers that restrict the hourly workers of their right to pride of workmanship.

xiii. Institute a vigorous program of continual education, self-improvement and retraining.

xiv. Everybody in the organization take part for the accomplishment of transformation.

2.3.1.3 The Seven Deadly and Ten Dreadful Diseases

Other than proposing the virtual of good practices, Deming has also pointed out practices that are to be avoided for quality and management performance (Deming, 1986). He

called these The Seven Deadly and Ten Dreadful Diseases. The Seven Deadly Diseases occur in the process of transformation and can be solved by revision in management style whereas Dreadful Diseases can be eliminated by implementation of the Deming's 14 points plan.

Seven Deadly Diseases are:

i. Inconsistency of purpose in planning products and services for keeping business in a market.

ii. Focus on short term profits such as quarterly dividend causes undermine quality.

iii. Over dependency on performance appraisal in resulting to fear, short term thinking and lack of teamwork.

iv. Mobility of management from excessive job hopping discourages long term thinking of actions.

v. Over rely on visible figures and may not getting known the effect of satisfied customers.

vi. High medical cost for employee health caring increase final cost of products and services.

vii. Examining costs of liability, warranty and legal cost.

And the Ten Dreadful Diseases were listed as follow:

i. Looking for examples to solve problems of quality.

ii. Innovative accounting.

iii. Purchasing standards that presume a certain percentage of deficiencies.

iv. Assigning management's responsibilities to others.

v. The assumption that problems are the mistake of workers.

vi. The effort to maintain quality by inspection on produced goods.

vii. False begins: modest, ad hoc efforts for changes.

viii. Expect for immediate pudding.

ix. The assumption that mechanization will transform industry.

x. The assumption that it is only required complying specifications.

The entire life of Deming up to the very last days was dedicated to quality management and quality improvement (Voehl, 1995). The above are nothing but just a brief summary of Deming's contribution that has changed many parts of our world and humanity improvements especially in the quality aspect. Most important of all, without realizing, Deming might have unofficially suggested the widely acknowledged concept of TQM where continual improvement is the fundamental understanding accepted by all scholars.

2.3.2 Joseph M. Juran (1904 – 2008)

2.3.2.1 The Early Years

Joseph M. Juran is commonly agreed by all quarters from both academic and industry practitioners as one of the masters of quality in the modern times. He lived till the old age of 104. Juran was born in Braila, Romania in 24th December 1904. He emigrated to USA when he was 8 years old. His father settled the family down in Minneapolis, Minnesota and he went on the study in University of Minnesota in electrical engineering (Bailey, 2007). Similar to Deming, he began his career in Western Electric since he graduated from his first degree in

1924. Out of concern for his job security during the Great Depression in the 1930s, Juran studied law on part time basis and earned for himself a doctor of jurisprudence degree (1935) from Loyola University, Chicago. During the Second World War, he was seconded to Land Lease Department of the Foreign Economics Administration where he served for four years. This is where is developed his insight into the federal government administration (Juran, 1975 and http://www.jmjuran.com/biography.htm, retrieved 30th Oct 2010.)

2.3.2.2 From Western Electric to New York University

In 1945, Juran decided to embark on his new career by moving into academic and became the Chairman of Department of Administrative Engineering, New York University (again similarly Deming also found NYU his home). He has also set off to build his career through consultancy jobs and writing books.

By 1951 he published his first Quality Control Handbook which cemented him as the authority in quality management. With the publication of this book he was noticed for his knowledge in quality management and he began to receive invitation for his services and training. In 1954, he was also first invited to Japan to present his quality management ideas and began his association with the Japanese community in his works. He was later bestowed the Order of the Sacred Treasure by the Japanese Emperor Hirohito for his contribution to the improvement of the Japanese quality management which the whole world talked about and admired since 1980s.

2.3.2.3 Pareto Principle (1937) "Vital Many" and "Trivial Few" (80/20 Rule)

Perhaps the most widely applied knowledge from Juran's observations was Pareto Principles. Juran in his article in 1975 clarified and confirmed that in fact he probably made a mistake by calling this principle as Pareto Principle. Granted, Juran acknowledged that

Vilfredo Pareto indeed had observed the concentration of wealth in a handful of wealthy people in those days in Italy. However, that was about the economics observations. However, Juran further developed the observation and came out with the conclusion of "vital few" and "trivia many" could be observed in many areas of application. For examples, 80% of the quality problems were contributed by 20% of the cause. Juran did not discover this observation by accident, it was upon his visit to the office of General Motor where he was shown this particular noting by General Motor's management. From here plus his own works in the area of quality management, he concluded that these is 80/20 rule which could be applied in many situation and managers ought to pay attention to the main factors that contribute to the greatest effect of all, be it the results of defects or results of greatest performance, and he names this observation as Pareto Principle in recognition of Vilfredo Pareto's contribution in this area of observation. In the later part of his life, he conceded he could adopted his own name for this principle as he concluded that Pareto was only observing in the area of economic where as he saw it could be applied in all scenarios.

2.3.2.4 Definition of Quality – Fitness for Use

Another contribution from Juran was his definition of quality which he defined it as "fitness for used" (Bisgaard, 2008). In this definition, Juran's idea on quality is that quality should mean what is intended should be able to meet the demand of the usage. Indeed he has always emphasized on the customer aspect of quality as the core (Juran, 1992). Of which, he suggested that the concept of quality is vague in the mind of customers such as "I know it when I see it". However, he would still go on to propose analyzing quality from two perspectives, which are product features and freedom from deficiencies. For Juran, the customers would perceive higher quality if there is more product features in the design and also fewer deficiencies in the products (or services). From Juran's perspective, products

features would attract customers which would impact on sales and freedom from deficiencies would have the element of cost reduction. Therefore, higher quality would bring about higher sales and lower costs.

2.3.2.5 Contribution to Japan (First Visit 1954)

Contrary to the common belief, Juran has never claimed to be the persons (Juran and Deming E.W.) responsible for the revolutionary quality standard achieved by the Japanese since the 1980s. In fact he dismissed it that it is as a notion of 'chauvinistic nonsense' (Juran, 1993). In his opinion, the Japanese were already producing world class products. Notably in the weaponry and military aircrafts, they were as good as the Western world during the Second World War. The Japanese were also very good at the craft products such as paper, lacquer ware, copper and woodblock print. However, he conceded that the quality standard achieved in these two areas was not achieved in the Japanese consumer products in those years. Especially the export of the Japanese consumer goods to the Western world was known to be shoddy in those years. He believed that with the capability of the Japanese in the first two areas, it is a matter of time they would able to achieve the third after the war even without the help from the two of them. He agreed that he and Deming had helped to jump start the quality improvement process from 1950s (Juran, 1993). What he observed in the process of transformation of quality standard achieved in Japan during his lectures and training workshops conducted there was the leadership demonstrated by the top management of the Japanese corporation. This was followed by re-defining quality management by focusing on the requirements by the customers instead of just merely meeting the specifications which professed by Juran.

2.3.2.6 The Juran Trilogy

Perhaps one of the most important contribution from Juran in the quality management knowledge is the Juran Trilogy. To Juran, managing quality begins from the customer perspective where identifying who are the customers and what they need is part of the initial planning process. From the customer requirement, the product specifications are established as the objective. And the actual products (results) are compared to the specification (objective). If there is any gap, improvement is sought to close the gap.

The brief steps of the Juran's Trilogy presented below is the version adopted from Juran (1993) which is more elaborate compares to when it was first presented in 1986.

i) Quality planning

- Establish quality goals
- Identify who are the customers
- Determine the needs of the customers
- Develop product features which response to customers' needs
- Develop processes able to produce the needed product features
- Establish process control; transfer the plans to the operating forces

ii) Quality control

- Evaluate actual performance
- Compared actual performance to quality goals
- Act on the difference

iii) Quality improvement

- Prove the need

- Establish the infrastructure
- Identify the improvement projects
- Establish project teams
- Provide the team with resources, training, and motivation to:
- Diagnose the causes
- Stimulate remedies
- Establish controls to hold the gains

(Source: Juran, 1993)

The trilogy was first proposed by Juran through his observations on the companies in USA in the 1980s. From Juran's observation, he concluded that there is a need to find a common unified way tackle the crisis in quality management among the companies in USA in the 1980s. He later proposed the unified quality oriented processes to improve the performance of organizations; the Quality Trilogy that is managing for quality. He divided the processes into three main parts, therefore the (Juran) Quality Trilogy, quality planning, quality control and quality improvement. He further concluded from the feedback collected from the management most companies in those days did not put enough emphasis on Quality Planning, which the management themselves also acknowledged. In Juran's opinion, he felt the main cause was due to the compartmentalization of various departments in an organization, the hierarchical layers in the organization structure and also the many divisions of different products in the company. He tried to propose a unified approach to combat these differences through the trilogy which transient the differences and barriers (Juran, 1986; 1993).

Juran was born in the same era as Deming and both have served Japan well for the improvement of quality after the Second World War. Juran's philosophy states that top

management leadership is responsible for implementing quality improvement. Juran (1988) stressed that teamwork within and among inter-departmental needs to be inculcated to promote quality awareness through quality cycle campaign. For decades, Juran's Quality Control Handbook was referred to as "Bible of Quality" by most in the quality management; it is also regarded as one essential reference in the quality movement. He is considered to be the "father of quality management" for adding and expanding human element from statistical origins to quality (Destefani, 2005). He posited that resistance to change, especially cultural resistance to change is the cause of the human relation problems (Phillips-Donaldson, 2004).

2.3.3 Dr. Philip Bayard Crosby (1926 – 2001)

Dr. Philip Bayard Crosby is well-known for his concepts of "Do It Right First Time" and "Zero Defects" as the management tools for TQM. Crosby (1979; 1992) suggests that no addition cost will be added to a product if doing things correctly in the first time. He claims that the cost of quality in fact is the expense of doing the things incorrectly. Zero defects as proposed by Crosby and now being widely accepted that there is only one level of quality in presence, the existence of any defect would obstacle to level of quality.

Crosby (1979) defined quality as "conformance to requirements" means it must clearly be measureable on tangible targets set by the organization instead of opinions or experience. According to Crosby, TQM is formed by three major concepts which are: (1) four absolutes of quality management, (2) 14 steps for quality management, and (3) quality vaccine.

2.3.3.1 Four Absolutes of Quality Management

To Crosby, four absolutes of quality management if adhered by management would reflect their orientations to reducing costs as quality improves, and as a consequence, quality

does not cost, hence leading to Crosby's phrase of "quality is free but not a gift" (Crosby, 1979). The elements as categorized in four absolutes of quality management are:

i. The definition of Quality is conformance to requirements, Not Goodness

   Clear communication between management and employees through leadership, training and developing a cooperative environment is essential for running an organization, produce a product and service and dealing with customers. When nonconformance is detected, there exists quality problem.

ii. The system for Causing Quality in Conformance, Not appraisal.

   The quality system installed should aim at avoiding errors begins from the early stage instead of carrying out the appraisal in conformance for the end product.

iii. The Performance Standard is Zero Defects, Not "Close Enough".

   Once employee is aware this expectation of no mistake will be condone, most problem will be rooted out as employees will become proactive instead of being reactive.

iv. The Measurement of Quality is the Price of Non-conformance, Not Indexes

   The result of nonconformance is waste and wastage which will create additional costs to the company. The amount to be invested in quality management to conform to requirements is recoverable from the elimination of waste and wastage.

2.3.3.2 14 Steps for Quality Management

Crosby introduces a 14-step technique whereby top management and employees are responsible in the activities of quality improvement process. Table 2.1 summarizes Crosby's 14 steps for managing quality improvement in list form.

Table 2.1: Crosby's 14 Steps

1. Management Commitment	8. Quality Education
2. Quality Improvement Team	9. Zero Defects Day
3. Quality Measurement	10. Goal Setting
4. Cost of Quality	11. Error Cause Removal
5. Quality Awareness	12. Recognition
6. Corrective Action	13. Quality Councils
7. Zero Defects Planning	14. Do It Over Again

Source: Crosby (2005)

The 14 Steps are not actually 'steps' per se. They are not necessarily laid out in sequence like an SOP (standard operating procedures). In fact they are more of the pointers, advice or principles that are useful guides for practitioner to adopt and implement the quality management concepts (Crosby, 2005).

2.3.3.3 Quality Vaccine

Crosby views quality problems as bacteria of nonconformance; hence antibodies vaccination is required to prevent problems (Crosby, 1984). Crosby stated that TQM as of quality vaccine supports the organization quality management to improve its overall operations and communication.

Apart from the above, Crosby has written book entitled "Quality is Free" in 1987 which gained international recognition, he believes that prevention was the key factor to high quality achievement and 35 percent of operating expenses would therefore be anticipated that

opposing from requirements cost service companies (Ehrlich, 2002). He exerted that bringing cultural transformation is vital for high quality in an organization.

2.3.4 Kaoru Ishikawa (1915 – 1989)

Kaoru Ishikawa, a renowned Japanese quality guru who created the practice of quality control circle which was once taking the world by storm where many manufacturing firms around the world trying to emulate. He identified small groups of people on planning and implements process changes for improvement of work environment, productivity and quality. His concept of continuous quality improvement led him to call for continued customer service where he opined that customers should continue to receive services even after the product has been purchase. According to Ishikawa (1991), quality begins from customers and thus producing quality products and services to meet customers' needs is the notion of total control system which is a system of production process involving all workers from top management to the front line staff. Ishikawa believed quality begins and ends with knowledge, thus quality control is the process of developing, designing, producing and servicing a quality product which is deemed as the most useful, most economical that always meets customers' satisfaction (Ishikawa, 1985).

Ishikawa is also known for the creation of an effective analysis tool called cause and effect diagram or fishbone diagram which reveals the key categories and organize thoughts of processes such as factors and steps involved in the potential causes of defects (Hill, 2008). He believed that seven quality tools can be used to solve as much as 95% problems within an organization; he stressed that every employee is to be trained with these tools, namely cause and effect diagram, scatter diagram, check sheet histogram, control chart, Pareto chart, flow chart and stratification (Ishikawa, 1985).

2.3.5 Armand Vallin (1922) Feigenbaum

Armand Vallin Feigenbaum acknowledged by Ishikawa (1985) who was the earliest to apply the term and define the concept of total quality control in the early 1950s (Huggins, 1998). To Feigenbaum, quality is defined and determined by customer, he advocated that in order to improve profitability, it is essential to focus on customer at all time (Powell, 2001). Feigenbaum (1991) stated that quality is the best investment for an organization to gain competitiveness. He defined quality of products and services as the quality of overall composite products and services characteristics of manufacturing, engineering, marketing and maintenance that meeting to customers' expectation (Feigenbaum, 1983). Quality control is thus related to managing customer satisfaction and lower costs. With this definition, customer satisfaction is the main focus of quality management. He stressed that process of quality control is critical aspect of meeting customers' expectation which starts from the first stage of collecting products requirements until the final stage of delivering products. Consistent with these terms, a high degree of quality standard is required to be attained on all functional activities such as inspection, purchasing, engineering, production, shipping and servicing. By focusing on objective of total quality control and the importance of quality activities (i.e. control of new design, control of arriving materials, control of product and studies of special process), Feigenbaum (1991) highly exerted that quality training covered of quality skills, quality attitude and quality knowledge should be promoted as vital element of TQM.

Additionally, Feigenbaum's approach of total quality control was credited with total quality system in coordinating the four quality activities (i.e. control of new design, control of arriving materials, control of product and studies of special process). Feigenbaum has promoting quality management improvement relentlessly. He tirelessly and unselfishly promote the formation of interest group in quality management leading to formation of Quality and International Academy for Quality which brought together leaders of the

European Organization for Quality, the Union of Japanese Scientists and Engineers and American Society for Quality.

2.3.6 Comparing of Quality Guru's Prescription

The common themes of these five quality gurus, namely Deming, Juran, Crosby, Ishikawa and Feigenbaum believe the system and management are key determinant of quality improvements. Their study on quality management concentrates on quality management improves productivity and reduces costs has brought the same objective to gaining the organization's competitive edge. Meeting customer requirement and expectation and satisfaction are the core belief of all principles prescribed by these quality gurus all for the sustainability and performance of organization. Each of these five scholars has developed their unique concepts of TQM which are now being applied by a number of organizations across the word for decades.

Deming believes quality is the expectations of customers though he really never officially defines it. He emphasized the integration of process improvement and leadership as fundamental to his approach of quality. He stressed on statistical thinking and statistical method as a mean of quality management tool. Leadership plays as top management role to provide clear standards and methods such as an appropriate environment to employees to ensure the success of quality management. His 14 points approach emphasized on customer satisfaction through transformation of quality at all stages which provides the basis of TQM. Additionally, Deming's "System of Profound Knowledge" and PDCA provide guidance and directions toward achieving high quality products and services.

Juran introduced the practice of total quality control with its managerial dimension which consists of planning, organizing and controlling to achieve quality which he sees as never ending. Quality is defined as "fitness for use" as opposed to merely fulfilling the

products' specification from the production perspective. He highlighted that quality standards management through SPC must be set and recognized in measurement as the cost of quality to evaluate the effectiveness of the quality improvement activities. Management must form up teams at each level of all processes to provide leadership to work on specific goals rather than focusing on products specification. As such, setting quality standard program and measurement of quality improvement become part of manager's strategy to undertake the improvement efforts.

Crosby's main goal orientation is to achieve quality by prevention of defects as well as conformance to requirements. He pointed out that zero defect approach can lead both management and employees reaffirming their obligation to quality. To Crosby, quality is free as he believes that prevention cost is lower, whereas the cost of detection, rework and scrap are expensive when defects are being occurred. Like Deming, Crosby introduced his own 14 steps as being good quality practices for zero defects management.

Ishikawa stresses that the use of quality control by introducing seven quality tools as the essential components to develop, design, produce and service after sales of quality products. Due to the notion quality begins and ends with customers, all from top management to the front line staff involved in the production process are expected to play their role to enhance quality at ongoing basis.

Feigenbaum's approach to quality is based on total quality control which emphasizes on managing customer satisfaction and cost reduction. He believes that quality determined by customers is the responsibility of all levels in an organization which is a moving target in a competitive market. He suggested that products and services quality must meet or exceed customers' expectation in a holistic manner from the first stage of careful planning, product design, product delivery until the last stage of maintenance. Table 2.2 tabulates the key contributions from quality gurus.

Table 2.2: Key Contributions from Quality Gurus

Gurus	Quality Definition	Contributions
Deming	Three corners of quality: product, user, instruction for use	• The theory of variance • PDCA cycle • 14-point for quality management • Seven deadly and ten dreadful diseases
Juran	Fitness for use	• Quality control hand book "Bible of quality" • Categorized the cost of quality • Pareto Principle • Habit of Quality • Quality Triology
Crosby	Conformance to requirements	• 14 steps for quality management • Theory of "Zero defects" • Written book "Quality is Free"
Ishikawa	Satisfactory to the customer	• Cause and effect diagram • Quality circle
Feigenbaum	What the customer says it is	• Total quality control

Source: Adapted from Richardson (1997)

From the above, we summarized the ideas on quality management methods and practices as proposed by the five quality gurus and widely accepted by all on quality management by the five gurus in Table 2.3 below.

Table 2.3: Similarities Among the 5 Gurus

	Deming	Juran	Crosby	Ishikawa	Feigenbaum
Leadership	√	√	√		√
Process management	√	√	√	√	√
Customer focus	√	√	√	√	√
Information management / SPC	√	√	√	√	√
Strategic planning		√			√
Human resource focus	√	√	√	√	√

While it is not as simple to clearly segregate and isolate all the ideas proposed by the gurus by categorizing them, with in depth studying and analyzing of their thought and widely accepted proposed quality management ideas and suggestions, the grouping of the ideas in Table 2.3 gives us what are the areas consistently proposed and emphasized in quality management philosophy from the five different gurus. For examples, fulling or meeting customer requirement consistently appear in all the guru's preaching; strategic planning which is the later stage general management tool, appears in the later era thinking like Feigenbaum on the total quality control (as an organization strategy); although loosely speaking Juran foresaw the importance of strategic thinking in his Juran Trilogy where Juran began the quality idea of setting the quality goals as the key first step of all. Furthermore, all five quality gurus recognized that to attain quality achievement the importance of employee participation and training are essential to the success of any programme, therefore HRM is proposed to be the commonalities for all five. Last but not least process management and information management/SPC which are arising from the manufacturing activities and measurement of conformance, naturally form the core of quality management from all the gurus. The only difference among them are in the refinement of the ideas such as better or improvement in statistical analysis and control as well as newer tools such as the fishbone diagram by Ishikawa.

In summary, all gurus made significant contributions to the advancement of knowledge for mankind which we should all emulate and continue their works to make further improvement of quality management thus bringing better quality of life for the society at large.

2.4 Quality Award Models

In the effort to improve quality management practices, organizations around the world increasingly using the criteria in the quality award programs for benchmarking of best practices, implementing quality strategy and performing self-assessment. The renowned quality award models in the world include the MBNQA in the USA, the European Quality Award (EQA) from Europe and the Deming Prize in Japan.

2.4.1 Malcolm Baldrige National Quality Award

MBNQA, a national award established in 1987 in the United States and it is managed by US Commerce Department's National Institute of Standards and Technology and American Society for Quality. The MBNQA awards are given out by the President of USA annually to recognize organizations that have demonstrated a certain level of quality achievement and overall performance excellence. MBNQA covers three major objectives: (1) "Awareness" to increase quality awareness for competitiveness, (2) "Sharing" is to disseminate information on successful quality strategies, and (3) "Understanding" is to comprehend the quality excellence's requirements (Rao, Carr, Dambolena, Kopp, Martin, Rafii, & Schlesinger, 1996; Skrabec, Ragu-Nathan, Rao, & Bhatt, 1997; Vokurka, Stading, & Brazeal, 2000). According to Dean and Bowen (1994), MBNQA model does not to align with a particular researcher or practitioner's viewpoint, but covers widely all viewpoints on quality. Dervitsiotis (2003) suggests that MBNQA is a good mechanism to contribute great improvements for promoting the United States business organizations, it is a useful tool aimed to deliver the ever-improving quality products and services, promote quality performance standards to meet customers' satisfaction and achieve sustain competitive advantages for the organizations. Ibekwe (2006) pointed out that MBNQA criteria entail three major characters for amplification of competitiveness performance among United States organizations. Firstly, it facilitates to improve organizational performance. Secondly, it promotes communication

and information sharing among organizations. Lastly, it serves as a guiding tools to understand and managing learning activities.

The MBNQA model is divided into seven constructs which provide the strategic direction for the entire quality management (Collier, Goldstein, & Wilson, 2002; Dale, 2003; Evans & Dean, 2003; ASQ, 2013):

i. Leadership
ii. Strategic planning
iii. Customer and market focus
iv. Measurement, analysis and knowledge management
v. Human resource focus
vi. Process management
vii. Business results

In the first criteria of MBNQA, *leadership* is the foundation for quality movement (Hackman & Wageman, 1995), which purports task-related guidance to employees to increase output, to improve quality and to bring pride of workmanship (Deming, 1986). Ulrich, Smallwood, and Sweetman (2008) demonstrated leaders need to be the human capital builders and are not only passionate about developing personal insight, proficiency but also inspiring goodwill of individuals to build strengths for the next generation of talent. He further added that Leadership also insure against the organization for the long term strategic success.

In the second criteria of MBNQA, *strategic planning* means the efforts taken by the organization on planning, establishing and developing action plans to the achievement of

goals (NIST, 2003 as cited by Olson, 2009). Firms will be successful when management examines their strategy map at every operation between market focus, product differentiation and cost minimization from the customer's point of view (Porter, 1985). In addition, this criterion encourages firms to use the emphasis on quality as part of their overall organization competitive strategy.

In the third criteria of MBNQA, *customer and market focus* are efforts taken to satisfy market requirements, building relationship and promote customers loyalty (NIST, 2003 as cited by Olson, 2009). Customer focus helps organization to understand, deliver and satisfy requirements of end-user of products and services based on the inputs from customers (Ehrlich, 2002). Bui (2009) referred the building of relationship with customer and marketplace as the listener and learner to understand their voices.

Next, *measurement, analysis and knowledge management* being the fourth criteria focus on the collection, selection, integration, analysis and improvement of data and information to support processes and management of the organization (NIST, 2003 as cited by Olson, 2009). This criterion is related to the usage of quality management tools such as data and analysis, and information sharing for all in order to achieve the overall strategic goal for the organization. Knowledge management as viewed by Latham (2008) is a vital approach to maintain current level of performance and seeking even higher level of achievement.

The fifth criteria of MBNQA; *human resource focus* is related to the implementation and development of people management in the tasks of planning, acquisition, organization and motivation (Amstrong, 2000; Dessler, 2000). Employees in people systems are considered as internal customers, they are integrated with external customers toward overall organization planning (Calhoun, 2002). In fact we have reviewed previously all the selected quality gurus were all emphasizing on the contribution of people in the quality achievement.

The sixth criteria of MBNQA, *process management* is the management dealing with behavioural practices and process methodology (Wong, Sim, Lam, Loke, & Darmawan, 2010), its basic objectives are to improve quality performance in terms of cost reduction, lowering cycle time and increased overall efficiency (Ooi, 2009). The emphasis of process management not only looking at the methods to produce goods and services that meet the demand of customers and quality standard, but also into making the process management in an efficient and effective manner.

Last but not least the seventh criteria of MBNQA, *business results* are measurements of the success or failure of organizational performance and key business areas on meeting its customer satisfaction, supplier and partner performance, operational performance and marketplace performance (Hertz, 2006). Whereas in all the first six criteria were more of the input for the organization or management practices, this last criteria is more of measuring the output (result and performance) of an organization. The output measurement could be from the perspective of financial performance such as profitability, or from the market and customers perspective such as market share or customer satisfaction or from the employee's perspective such as job satisfaction or employee turnover etc.

In summary, these seven criteria (also known as Baldrige Criteria for Performance Excellence) provided a wide scope of assessment or checklist to the area of performance drivers. The framework is widely adopted all over the world especially in USA (Gorenflo, Klater, Mason, Russo & Rivera, 2014). Many scholars have adopted and adapted these seven elements as dimensions for TQM practices in their research (Prajogo & Sohal, 2003; Ooi, 2009).

2.4.2 European Quality Award (EQA)

The EQA was first established in 1992 by European Foundation for Quality Management (EFQM) which is currently known as the EFQM Excellence Award. The EFQM Excellence Award was established to recognize companies in Europe (Wilson, 1998) based on the EFQM Excellence Model, a holistic framework than can be applied to any organization, regardless of size or sector. To date many European organizations are using the framework for their development for the performance purpose (Doeleman, Ten Have & Ahaus, 2014). The missions declared by EFQM are: As a European Foundation, we inspire organizations to achieve sustainable excellence by engaging leaders to learn, share and innovate using the EFQM Excellence Model (EFQM, 2015). The EFQM introduce the following three-step plan for accomplishment of its mission (Ghobadian & Woo, 1996):

i. To recognize and reward European-based firms on their successful implementation of total quality management programme.

ii. Encourage other firms to benchmark the awarded organizations via network medium and distribution of information.

iii. Promote the quality awareness throughout business society and communities to the European quality of life and competitiveness via training, lobbying and information sharing

According to European Foundation for Quality Management the EFQM Excellence Award is presented to companies that have shown excellence of quality management and apply TQM as their primary framework process by integrating continuous improvement; and for best exponent of TQM in Europe. The EFQM Excellence Award is similar to other grand scale national awards as it provides a TQM model in a continuous updating basis which enables ongoing improvement to promote quality (Bohoris, 1995).

The EFQM Excellence Model structure is divided into two parts with all together nine criteria, five enablers and 4 results criteria (EFQM, 2015). Firstly, the five enablers are leadership, strategy, people, partnership & resources and last but not least; processes, products & services serve as drivers to the business and facilitating the transformation process from inputs to outputs. These enablers are the criteria where organizations could focus on to produce the results, which have been defined in four categories. The four categories of results are customer results, people results, society results and business results. These results measure the accomplishment of output level from the actions and implementation of the enablers. Both of these aspects focus on applying quality data and information and suppliers' quality assurance to improve the effectiveness of TQM development. The EFQM Excellence Model is presented in Figure 2.1 below.

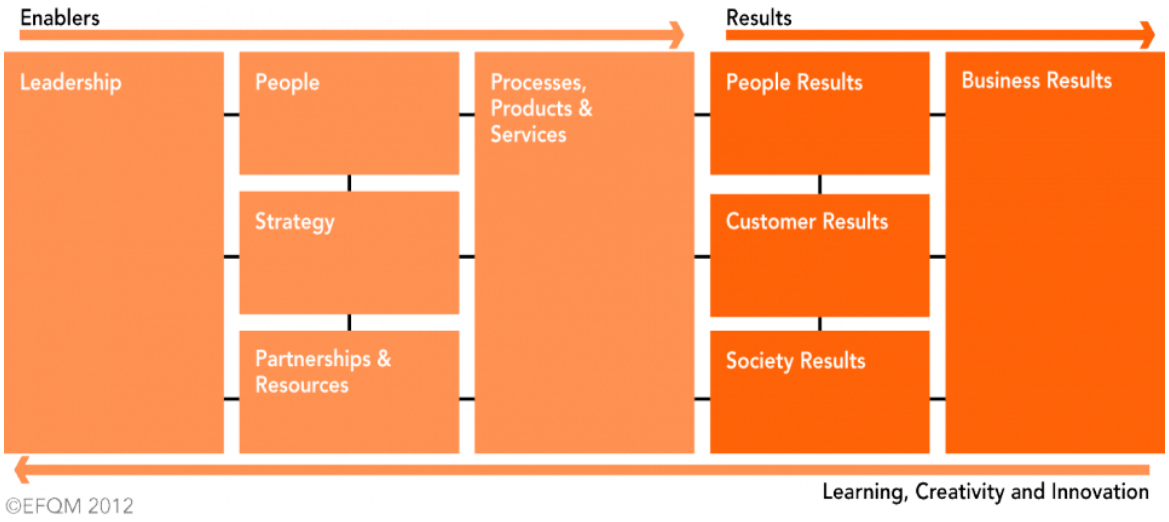

Figure 2.1: EFQM Excellence Model (source: EFQM 2015)

The EFQM Excellence Award is awarded to Europe based company annually based on Eight Fundamental Concepts of Excellence for assessment for quality achievements. The eight fundamental concepts were chosen after careful study by the foundation as well as from the quality management scholars together with gathering input from the industry practitioners.

The fundamental concepts must be seen to be adopted by the winners of the award in order to sustain the quality management practices and the achievements. The winner must prove that their performance not only exceeds that of their peers, but also that they will sustain this achievement into the future. The 8 Fundamental Concepts of Excellence are listed as follows (EFQM, 2013):

i. Adding Value for Customers

   Excellent organisations always create added value for their customers through understanding and anticipating their needs and expectations.

ii. Creating a Sustainable Future

   Excellent organisations are conscious of its surrounding and create positive impact in its environment which will improve the economy, communities and society they are with.

iii. Developing Organisational Capability

   Excellent organisations are ever ready for managing change and always equipped with capabilities to effectively managing change both outside and inside the organisations.

iv. Harnessing Creativity & Innovation

   Excellent organisations emphasize on continual improvements which will generate increased value and levels of performance through harnessing the creativity of their stakeholders.

v. Leading with Vision, Inspiration & Integrity

   Excellent organisations have visionary and aspiring leaders who are role models for the employees for his values and ethics.

vi. Managing with Agility

Excellent organisations are moving with agility and are able to identify and response to the threat and opportunities promptly.

vii. Succeeding through the Talent of People

Excellent organisations empower their people and always have high level of trust and give due recognition for the value their people have created that is in line with both organisational and personal goals.

viii. Sustaining Outstanding Results

Excellent organisations will sustain outstanding results within the parameters of the environment, meet both the short and long term needs of all their stakeholders.

In summary, EFQM is a non-profit and professionally self-managed organization that promotes quality management practices to spur European organisations to compete globally. The five quality management enablers and five areas of results focus are widely used as driver to achieve sustained excellence performance for the organisations. The 8 Fundamental Concepts of Excellence are used to provide the fundamental assessment on the achievements and leading to the EFQM Excellence Awards.

2.4.3 Deming Prize

In 1951, the Board of Directors of the Union of Japanese Scientists and Engineers (JUSE) unanimously accepted a proposal to introduce the Deming Prize for the development of quality across Japan. The award was being given in honour of Dr. E. Deming to thank him for his contribution to the advancement of manufacturing standard in Japan. Its aim is to reward individuals and organizations that have successfully excelled in quality control

(Ghobadian & Woo, 1996). According to Union of Japanese Scientist and Engineers (2018), the award is classified into three categories:

i. The Deming Prize for the Individuals;

ii. The Deming Distinguish Award for Dissemination and Promotion (Overseas);

iii. The Deming Prize (Previously known as Deming Application Prize prior to 2012).

The Deming Prize for the Individuals is given to honour to individuals (or groups) who have made outstanding contributions to the study of TQM or statistical methods used for TQM, or those who have made outstanding contributions in the dissemination of TQM. On the other hand the Deming Prize is awarded to corporations or their subsidiaries for their implementation of TQM that is suitable for the company's scope and philosophy. Lastly, The Deming Distinguish Award for Dissemination and Promotion is given to individuals based in overseas who has contributed greatly in the dissemination and promotion of TQM. Both of the Deming Prize and Deming Prize for the Individuals are awarded for the accomplishment of outstanding performance development using statistical method and total quality control or companywide quality control.

According to Ghobadian and Woo (1996), ten primary factors are included in a checklist of the Deming Prize (previously Deming Application Prize) evaluations and the primary factors are then divided into the secondary factors which have items that are equally weighted between four to eleven;

i. Policies

- Policies of management, quality and quality control

- Methods for setting up policies

- Appropriateness and constancy of policies
- Application of statistical methods
- Communication and distribution of policies
- Evaluate policies for the achievement status
- Relationship to both short-term and long-term plans

ii. Organization

- Transparency of power and responsibility
- Appropriateness of authority delegation
- Co-ordination between inter-department
- Committee and team activities
- Employment of staff
- Application of quality control activities
- Quality control or management analysis

iii. Education

- Plans and results of education
- Understanding of quality, quality control and management
- Dissemination of statistical theories and methods

- Take hold of impacts

- Education of group companies, distributors, retailers and contractors

- Activities of quality control circle

- Suggestions for improvement system

iv. Information

- Gathering information externally

- Communication between inter-department

- Appliance of computers for speedy communication

- Analyzing and processing information

v. Analysis

- Selection of main issues and development themes

- Application of appropriate analytical methods

- Statistical methods analysis

- Applying analysis results

- Improvement actions taken

vi. Standardization

- Standards system
- Set up, revise and abolish standards methods
- Standards details
- Application of statistical methods
- Gathering of technology
- Application of standards

vii. Control

- Management systems for quality and quantity
- Items and points of control
- Control charts
- Quality control circle activities
- Control activities status
- In-control status

viii. Quality assurance

- Reliability testing and design review on new products
- Preventive actions for product liability and security
- Improvement on design, analysis and control processes

- Process competences
- Inspection and instruments
- Quality audit and assessment

ix. Effects

- Evaluation of effects
- Tangible effects (i.e. cost, profit, delivery, environment, safety, service and quality)
- Intangible effects
- Conformity of actual result to estimated effects

x. Future plans

- Understanding of current condition
- Evaluation for solving fault
- Future development plans
- Relationship between long-term and future plans

Table below is the evaluation form extracted from Deming Prize Evaluation Handbook which provides the holistic ideas of the quality concept promoted by the JUSE.

Table 2.4: Quality Award Assessment Items Check-List By JUSE

Evaluation Items	Points
1. Management policies and their deployment regarding quality management	20
a. Under clear management policies that reflect its management principles, industry, business, scope and business environment, the organization has established challenging, quality-oriented, customer-driven business objectives and strategies.	(10)
b. Management policies are deployed throughout the organization and implemented in a united way.	(10)
2. New product development and/or work process innovation	20
a. The organization actively develops new products (including services) or innovates work processes.	(10)
b. New products need to satisfy customers' requirements. In the case of work process innovation, it must contribute greatly to the efficiency of business management.	(10)
3. Maintenance and improvement of product and operational qualities	20
a. Daily Work Management Through standardization and education/training, the organization rarely has troubles in daily work and major operations in each department have been stabilized.	(10)
b. Continuous Improvement The organization makes improvements on quality and other aspects of its business in a planned and continual manner. It has reduced claims and defect problems in the market or the succeeding processes. It has been maintaining claims and defect problems in the market or the succeeding processes at extremely low levels. The customer satisfaction rate has improved.	(10)
4. Establishment of systems for managing quality, quantity, delivery, costs, safety, environment, etc. The organization has established the necessary systems among the ones listed above and utilizing them effectively.	10
5. Collection and analysis of quality information and utilization of IT The organization collects, analyses and organize knowledge of quality information from the market and within its organization in an organized manner and utilizes it effectively. Together with the use of statistical methods and information technology, such information is utilized effectively for developing new products and maintaining and improving operational qualities.	15
6. Human resources development The organization educates and develops its human resources in a planned manner resulting in maintaining and improving product and operational qualities.	15

From the above check list, organizations that apply for the Deming Awards will be evaluated based on the 6 criteria begins from the basic category.

1. Management policies and their deployment regarding quality management

   The organization will be evaluated based whether it has a clear policy that is reflected in the management objectives, understood by all, clearly defined business scope; and how it will response to the business environment, and whether it is customer and quality driven.

2. New product development and/or work process innovation

   The organization shows proof that is it actively in developing new products and services through the innovative work processes. The new products will need to satisfy customers' requirements. The process innovation must be relevant to the contribution in business efficiency.

3. Maintenance and improvement of product and operational qualities

   With work process that is standardized, employees that have adequately trained, operations in the organizations will reduce problems and troubles in the daily works. The organization also shows proof in making continuous improvements on quality and other aspects of its business in a planned and continual manner. The claims of defects from the market place has been reduced, at the same time the customers satisfaction rate has improved.

4. Establishment of systems for managing quality, quantity, delivery, costs, safety, environment, etc.

   The organization has shown systems have been established and all operations are working effectively in synchronization.

5. Collection and analysis of quality information and utilization of IT

The organization has collected and analyzed information effectively and is able to apply the information by utilizing statistical methods.

6. Human resources development

   The organization prized its human resources, train and educate them in a planned manner resulting in improvement in productivity and quality of output.

It is also worth noting that in the revised *The Application Guide for the Deming Prize* (JUSE, 2013), it is clarified that there is no necessity for any applicant (for participating in the award selection) to conform to any particular quality framework or model prescribed by JUSE for the diagnostic process. Rather, the guide spells broadly so long as the company could show TQM is practiced and through the practice of TQM leading towards organization and business objectives collectively organization wide.

2.4.4 Comparing of the Quality Awards Models

The criteria of three quality awards: MBNQA, EFQM and Deming Prize have several common objectives which emphasize customer-driven quality through customer focus plans, leadership, human resource focus, processes and product design. The approaches of each award are different; MBNQA and EFQM stressed on continuous analysis and improvement, whereas the Deming Prize is more concerned with TQM promotion and implementation.

The MBNQA model is an audit framework for organization to carry out self-assessment internally. This award is categorized into small business, services and manufacturing, in which each category may be awarded to maximum of two winners for profit United States businesses annually. The seven criteria of MBNQA model underpin continuous improvement and customer results suggest a foundation for assessing the management practices of organizational performance of various sectors and sizes such as small business, service,

manufacturing, healthcare and education. The model can also be used as benchmarking against competitors through recognition of world-class standards. It highlights leadership as the primary role to create goals, identify values and develop systems for ever improvements. The inclusion of employee participation and empowerment are contributing to sustainable performance improvement that maximizing customer satisfaction, increase profitability and improved market share.

The EFQM model is targeted at European organizations which promote the long-term commitment to TQM concept. Evidence has revealed that mechanism of TQM programme in self-appraisal could satisfy employee and customers' expectations, as well as other company's interest. The EQA model therefore is believed to support the underlying association between employee satisfaction, outputs and outcomes. Like the MBNQA, leadership in EFQM is important to drive quality and customer satisfaction, business results, processes and also emphasized by most practitioners and academics.

The Deming Prize is no longer emphasizing strongly on a particular framework or criteria. On the other hand, Deming Prize is more concern with the promotion and implementation of TQM practices. The assessment/diagnosis which could appear to be more subjective and very much depending on the presentation and proof of works submitted by the applicants to compete for the award.

The criteria summary of the three major awards in the world is present in Table 2.5. Interestingly, while all of them shared important major traits such as leadership, customer focus, strategic planning, people focus, results oriented, society conscious, JUSE's Deming Prize has single handedly explicitly mention the practice and promotion of TQM. JUSE under Deming Prize even expanded its scope by providing the definition of TQM which we will cover in the later part of this chapter. Whereas EFQM is slightly different with additional

emphasis on relationship with working partners such as suppliers though we can't say the other two are excluding this criteria out totally.

Table 2.5: Summary of Comparisons on the Three Major Quality Awards

Quality Awards Criteria/Framework	MBNQA	EFQM	Deming Prize
Leadership	✓	✓	✓
Strategic planning	✓	✓	✓
Customer and market focus	✓	✓	✓
Measurement, analysis and knowledge management	✓		✓
Human resource focus/People	✓	✓	✓
Process management	✓	✓	✓
Business results	✓	✓	✓
TQM			✓
Society Results	✓	✓	✓
Partnership & Resources		✓	

2.5 Review of TQM Concept

The history of TQM began since few decades ago (Ahire, Golhar, & Waller, 1996; Flynn, Schroeder, & Sakakibara, 1994; Saraph, Benson, & Schroeder, 1989). The foundation of TQM can be traced back to as early as 1949 by the creation of Union of Japanese Scientists and Engineers which brought together Japanese scholars, engineers and government officials with their dedication to improve postwar Japanese productivity (Powell, 1995). TQM with its three principles of emphasizing customer satisfaction, strive to improve process continuously and ensure employee efforts to take part in quality improvement (Levis, Brady, & Helfert, 2008), has led to vast economic achievement in Japan and it therefore as being the catalyst to lead in producing the superior quality from Japanese products (Sun, Li, Ho, Gertsen, Hansen, & Frick, 2004).

TQM is regarded as a management philosophy aims to meeting and exceeding ever-changing customer expectations (Evans & Lindsay, 2008). It contributes significantly to organizations toward sustainable competitive edge (Prajogo & Sohal, 2004a; 2004b). According to Dean and Bowen (1994), TQM as a philosophy or a management theme is different from other management concept which can be exemplified by its principle of continuous improvement from groups, individuals and organizations. The designation of TQM is to help organization to improve product service, product quality, customer satisfaction and lower management costs. According to Motwani (2001), the implementation of TQM is deemed as organization transforming itself in the processes, culture, belief system and strategic objectives. Potential benefits associated with the proper efforts on successful implementation of TQM include: proper allocation of resources, improved production method and higher management efficiencies (Chin & Pun, 2002). Conversely, poor organizational culture and minimal leadership support are the potential problems arise from the unsuccessful efforts of TQM.

TQM, in short as summarized by Wilkinson and Witcher (1993) and Nwabueze (2001) is as follows:

Total : Involvement of every individual and company

Quality : Fully meeting customers' expressed and requirements

Management : Commitment from senior management and leadership

A few pioneer researchers have defined TQM differently based on their viewpoints (Lakhe & Mohanty, 1994), such as continuous for excellence where TQM is an approach to organize and aligning every department, every individual person and every activity to be more flexible and effectively at all levels of organization (Oakland, 1989). On the other hand, Zaire & Simintiras (1991) proposed that it is an integration approach for a range of processes; TQM

is the grouping of the total system process for doing everything with right skills at the first time, all time and each process.

In addition to the definitions suggested by some scholars, JUSE is probably one of the few organizations that has a formal definition of TQM which is;

> *TQM is a set of systematic activities carried out by the entire organization to effectively and efficiently achieve the organization's objectives so as to provide products and services with a level of quality that satisfies customers, at the appropriate time and price.* (JUSE, 2013)

From the definitions and literature review, we see that there are five broad headings covered to describe the concept of TQM which further supported by the respective scholars as described below:

i. TQM as a culture**.**

   According to Kanji and Wallace (2000), TQM is the organizational culture of ever-ending improvement focus on meeting customer satisfaction.

ii. TQM as an organizational-wide management process.

   Parzinger and Nath (2000) highlighted that TQM is the organizational-wide process to establish a management of inculcating a culture of continuous improvement that aims to constantly meeting and exceeding customer requirements.

iii. TQM as a guiding management philosophy.

Pun (2002) states TQM is an integration of management philosophy and guiding practices which seeks continual improvement; reduce rework, process redesign, long-term thinking, competitive benchmarking, meeting customers' requirements and closer relationship with suppliers.

iv. TQM as a strategy.

Jones (1994) defines TQM as strategy of how TQM improves organizational performance which aims for lowest overall cost, greatest satisfying customer requirements through all employees' involvement for continuous improvement of products and services.

v. TQM as a system.

Evans and Dean (2003) defines TQM is a total system approach, all employees work from top to bottom, from horizontal to vertical, from backward to forward within all departments and functions.

The concept of TQM is widely accepted for its distinctive mission of ongoing process towards continual excellence with the right skills and attitudes toward satisfying every customer at all the time. According to past literature review from various researchers such as Lewis, Pun, and Lalla (2006) and Yong and Wilkinson (2001), there are three general broad practices for the concept of TQM. Firstly, TQM is categorized into hard TQM and soft TQM. The soft TQM are more centered on humanity aspects such as leadership, training, employee involvement. Hard TQM is related to technical aspects which are production methods, processes and procedures through benchmarking, ISO certification, customer delivery etc. Secondly, mutual support and interrelation between hard and soft TQM practices should be

established (Flynn, Schroeder, & Sakakibara, 1994; Hackman & Wageman, 1995) for the improvement of the expected results when the organization defines TQM practices (Fissher & Nijhof, 2005; Oakland & Oakland, 1998; Stainer & Stainer, 1995). Thirdly, core concepts of TQM would suggest to improve organizational performance have been validated by many studies (Hendricks & Singhal, 2001; Kaynak, 2003; Powell, 1995; Terziovski & Samson, 1999; Zhang, 2000b). Calvo-Mora, Picón, Ruiz & Cauzo.(2013) identify three soft and hard TQM dimension; management and human resources, strategic management of partnerships and resources and processes management concluded that all have an impact on firm performance. Similarly Zeng, Phan & Matsui (2015) suggested that in their study both hard and soft quality management have an effect on innovation performance directly and indirectly. Soft QM has indirect effect on innovation performance through its effect on hard quality management practices. The basis theoretical assumption that TQM offered customers a direction map towards meeting their requirements, respond to changing markets and improve the production process of producing the product or service (Anderson, Rungtusanatham, Schroeder, & Devaraj, 1995; Reed, Lemak, & Montgomery, 1996).

2.6 Review of Key Practices of TQM

The pursuit of TQM has become a strategy for both manufacturing and service organizations to sustain their key competitive edge (Zakuan, Yusof, Laosirihongthong, & Shaharoun, 2010). Because of its distinctive effort to strive for continuous improvement in every process within an organization to satisfy customer expectations at all time (Kumar, Choisne, de Grosbois, & Kumar, 2009; Prajogo & McDermott, 2005), the practices of TQM is therefore have caught the attention in both in the developing and developed countries especially in the manufacturing sectors (Jung & Wang, 2006) at both national to international levels (Kim & Chang, 1995).

Past studies have examined TQM constitutions and key practices for successful implementation of TQM (Antony, Leung, Knowles, & Gosh, 2002; Sila & Ebrahimpour, 2002; Sureshchandar, Chandrasekharan, Ananthearaman, & Kamalanabhan, 2002; Zhang, Waszink, & Wijngaard, 2000). Each study has come out with different sets of TQM practices (Talib, Rahman, & Qureshi, 2010) and because of inconsistency in previous research, this leads to difficulty in making a conclusion on what the TQM practices should be (Hoang, Igel, & Laosirihongthong, 2006; Ooi, Arumugam, Teh, & Chong., 2008). In view of this, some quality award models have been used as a benchmark framework for implementation of TQM and for evaluation on business performance results, the awards include the MBNQA, the EFQM, the Deming Prize and Kanji Business Excellence Model (Talib, Rahman, & Qureshi, 2010). According to the study of Bayraktar, Tatiglu, and Zaim (2008), they have identified a set of critical success factors which resembles TQM practices (i.e. program design, quality system improvement, process control and improvement, measurement and evaluation, vision, leadership, employee involvement, education and training, recognition and award, customer focus, and other stakeholder's focus). In Brah, Tee, and Rao's (2002) study, eleven elements of TQM practices were identified: supplier quality management, employee empowerment, employee involvement, service design, process improvement, quality improvement rewards, customer focus, top management support, employee training, benchmarking, and cleanliness and organization.

From the literature review, there are quite a number of study carried out and papers written on the practices of TQM that have contributed to development of business excellence from the people-oriented aspects (Boselie & van der Wiele, 2002), for examples; employee satisfaction and loyalty (Chang, Chiu, & Chen, 2010), job involvement (Karia & Asaari, 2006) and job satisfaction (Ooi, Arumugam, Teh, & Chong, 2008), customer satisfaction (Sit, Ooi, Lin, & Chong, 2009). In addition, Chang, Chiu, and Chen (2010) identified five elements

of TQM for the examination and validation of the effects on employee satisfaction and loyalty in the government context. They are employee training, teamwork, management leadership, employee empowerment, and teamwork. Another study conducted by Ooi, Safa, and Arumugam (2006) has empirically analyzed the influence of TQM on employees' affective commitment of six major Malaysian semiconductor contract manufacturing organizations by applying the hierarchical regression approach. Five key practices of TQM were identified to be contributing to TQM performance: organizational trust, customer focus, employee involvement, organizational communication, and teamwork.

Further literature review also found that many scholars concluded the implementation of TQM practices brought a significant improvement on performance management such as strategic performance (Zhang, 2000a), operational performance (Choi & Eboch, 1998), organizational and financial performance (Tanninen, Puumalainen, & Sandstrom, 2010), quality and innovative performance (Claver & Tari, 2008). Dow, Swanson, and Ford (1999) introduced nine dimensions of TQM practices, namely workforce commitment, shared vision, customer focus, use of teams, personnel training, cooperative supplier relations, use of benchmarking, advanced manufacturing systems, and use of just-in-time principle to investigate the effect of TQM practices on firm's quality performance. According to Curkovic, Melnyk, Calantone, and Handfield (2000), MBNQA is considered as the best fit of TQM due to its several strengths. Firstly, the MBNQA codifies the principles of quality management as well as it provides comprehensive framework for organization to evaluate customer satisfaction and employee involvement (Garvin, 1991). Secondly, the framework of MBNQA has been advocated as popular strategy and philosophy by the leading quality academicians in Asia and North America (Winn & Cameron, 1998). Thirdly, the core concepts and values of MBNQA are updated regularly for the latest development of quality improvement (Tai &

Przasnyski, 1999). Last but not least, the MBNQA has been acknowledged as an operational framework for TQM (Flynn & Saladin, 2006; He, Hill, Wang, & Yue, 2011).

After the thorough review of the TQM literature, a set of six TQM practices were selected in this study. They are: leadership, strategic planning, human resource management, process management, customer focus and information and analysis. The reasons for the above dimensions being selected are based on the following criteria:

(a) It is in line with the practices proposed by most of previous TQM scholars and practitioners which are incorporated with the world-wide recognition quality awards.

(b) It represents the hard and soft components of TQM.

(c) It has been identified as key practices in implementing in both manufacturing and service contexts (example Zhang, Waszink, & Wijngaard, 2000; Sila & Ebrahimpour, 2002; Hoang, Igel, & Laosirihongthong, 2006)

2.6.1 Leadership

The theory of leadership is based on the Deming's idea in transforming American management which he believes top management leadership should always attempt to improve quality and reducing costs constantly by determining the cause of failure (Deming, 1986). Leadership is a way of how leaders influence the behavior of followers towards achieving desired organizational goals (Yukl, 2005; Northouse, 2010). Leaders through inter-personal influence on followers will lead to creation of new environment (Das, Kumar, & Kumar, 2011). According to Lord, Brown, Harvey, and Hall (2001), no universal definition or style is given to leadership due to immeasurable situational and factors. Authors in the TQM literature such as Goetsch and Davis (1995) and Guillen and Gonzalez (2001) have pointed out that leaders can influence their followers to develop teams in defining and communicating a shared vision, and stimulate creativity. The leadership construct has been validated as one of

the principles of TQM, for example in Perles's (2002) study, he stated that without the distinct role of leadership in influencing and mobilization competency, the program of TQM would not be possibly completed. For TQM to work, leaders are therefore responsible to develop and communicate a vision in supporting the continuous improvement and organization sustainability (Zairi, 2002).

In traditional research, leadership is referred to behavioural approach rather than traits of an individual in the late 1940s to 1950s (Botha, 2001), but new paradigms are applied in the past three decades, for example charismatic leadership (House, 1977), visionary leadership (Westley & Mintzberg, 1989), and new leadership (Bryman, Stephens, & Campo, 1996). McGregor's X and Y (McGregor, 1957) theory are two major theories of leadership behavioural approach. McGregor suggested that management by direction and control regardless of hard and soft approach control are no longer adequate to motivate employee toward organizational goals. McGregor believes employees are inherently motivated byy agreeing to potential for development, capacity for assuming responsibility and readiness to direct behavior towards organizational goals. It is the task of management leadership to provide the conducive organizational conditions and methods to derive such motivation frm the employees toward such behavior. According to Ristow (1998), Theory X and Theory Y are identified in the motivational theory by McGregor which can be applied into different leadership styles. Theory X states followers are being motivated and enlighten by leaders about their expectation, tasks execution, meeting standards, and to ascertain that all followers be familiar with their place. Whilst, Theory Y advocates leaders seek advice and opinions from their followers and followers participate in the decision making process. The first is more well suited for a firm and swift decision from the leader while the latter called for a more democratic leadership.

Leadership as described by Burns (1978) as a mutual practice between leaders and followers which starts from identification of motives and needs to reach the defined goal in a whole group. According to Bass and Steidlmeier (1999), leadership concerns others behavior in the organization especially on vision, value, personality and genuity. Leaders seek to align followers' needs, focus on intrinsic motivation and personal development in order to inspire them in exceeding their expected performance (Bass & Riggio, 2006; Miia, Nicole, Karlos, Jaakko, & Ali, 2006; Sivanathan & Fekken, 2002). With this characteristic, the leaders motivate followers to have a deeper thinking in their daily work (Wheatley, 2002) and which the same opinion expressed by Das, Kumar, and Kumar (2011) that leaders play as ideal agents of change to lead followers when in situation of high risks and uncertainties. Avolio and Bass (2002) proposed to identify leaders through four characteristics. First, leadership is idealized influence that the leaders are respected and followers seek to emulate their high moral standards. Secondly, leadership acts as inspirational motivation that could stimulate followers with challenges and understanding to perform well in order to achieve organizational goals. Thirdly, leadership is an intellectual stimulation that could improve followers' aptitude and problem solving skills. Finally, leadership is individualized consideration on treating followers equally through support, mentoring, coaching and learning opportunities.

On the other hand, transactional leadership is to satisfy followers' requirements by praising, rewarding and promising followers (Northouse, 2010), and it is short term in nature of its effect. Leaders provide direction and inspiring followers (Conrad & Poole, 2002) and as such the followers will be given rewards for a job done well that meet the leaders' requirements (Hollander, 1986). With this perspective, a system of rewards and punishment will be implemented by the leaders to motivate subordinates. Subordinates are likely to receive a reward when they achieved the desired performance, and a punishment will be taken

if they failed the work (McMurray, Islam, Sarros, & Pirola-Merlo, 2012). There are three behaviours of transactional leadership identified by Avolio, Waldman, and Yammarino (1991): (1) contingent reward which will reward the subordinates of good performance; (2) management by exception (active) refers to the monitoring system and correction action that will be taken to subordinates to work effectively, and (3) management by exception (passive) which the subordinates will be punished for performing any discrepancies. As described by Bass and Avolio (1993), transactional leadership emphasize on implicit and explicit contractual relationship which is based on contingent reward for work done, continuous oversight is applied in active management and correction action is applied in passive management.

Regardless of the style of leadership and whether it is from the behavioral approach or traits, charismatic or situational; the main focus for leadership contribution is whether it is leading the organization towards a better organizational performance? This contributing factor in terms of TQM is especially apparent and critical in this study as there reported leadership differences in the family owned firms and non-family owned firms (Chua, Chrisman, & Sharma, 2003, Ibrahim & Ellis, 2004). For the least, the ownership and the agency theory would suggest that the CEO leadership would behave differently in different firm's ownership and thus arriving at different performance reults (Fernández-Aráoz, Iqbal & Ritter 2015).

2.6.2 Strategic Planning

Strategic planning is defined very simply as "*A plan of action designed to achieve a long-term or overall aim*" in the Oxford dictionary. It typically refers to the practices on how the strategic actions plan of formalized long-running approaches to be set and implemented in an efficient and effective manner that can help to achieve organizational goals (Wong, Sim, Lam, Loke, & Darmawan, 2010). Mintzberg (1994) differentiates between planning and

strategic thinking. Strategy in the opinion of Mintzberg could not easily be formed is fixed and formalized process as there are too many uncertainties. Instead strategic planning is derived from strategic thinking when occasional nugget ideas are uncovered. In today's ever-challenging environment, strategic planning is viewed as one of the most important management activities to assist organization towards fitting the goals achievement (Welsh, 2005). The aims of strategic planning are to employ and deploy action plans (Lee, Rho, & Lee, 2003), to enhance relationships with suppliers, business partners and customers (Prybutok, Zhang, & Ryan, 2008) and to facilitate long and short term goals achievement through participative planning (Teh, Yong, Arumugam, & Ooi, 2009). As identified by Floyd and Lane (2000), the process of strategic planning constitutes of three levels (i.e. top, middle and operational) of management. Top management concerned with decision making, establishes, and manages the organizational goals. Middle management is a mediator to coordinate the activities and facilitate the implementation process between the relationship between top and operational management. Operational management refers to the execution work of non-managerial employees such as supervisors, officers, foreman etc. Review of previous literature by Billich and Neto (2000), Cascella (2002) and London (2002) stated that the process of strategic planning involve five activities. Firstly, strategic planning must begin with future-based mission: the mission and aims of organization in accordance with TQM principles must be first defined clearly. Secondly, strategic planning needs strategic objectives: future planning that creates maximum opportunities must be supported by measurable objectives. Thirdly, strategic planning needs critical success factors: strategic planning must further develop critical success factors for the mission achievement. Fourthly, strategic planning needs all departmental action plans: participation by each department for developing its structural plans promoting the integration of the entire organization performance. Lastly, strategic planning depends on individual participation on drawing up the

departmental plans, involvement of employees across all levels provides opportunity for them to participate in the strategic planning process.

According to London (2002), organizations gain competitive advantage with an effective plan. Strategic planning aligns all activities and resources by focusing on past and future, internal and external environment across all function and levels of the organization that are critical to the TQM implementation, which in turns foster cooperation, commitment and creativity (Sussland, 2002).

2.6.3 Human Resource Management

Human resource management is defined as a system, policy, practices and philosophy that would influence employees' attitudes, behavior and performance (Noe, Hollenbeck, Gerhart, & Wright, 2010). The history of human resource management can be traced to 1920s where dedicated function in an organization was established (Ferris, Rosen, & Barnum, 1995). Human resource management plays the role of acquiring, developing, utilizing and retaining employees in an organization (Ferris, Rosen, & Barnum, 1995). Over the years, human resource management has been recognized to play a more and more indispensable strategic role in any organization (Ferris, Rosen, & Barnum, 1995). The previous empirical research has suggested that human resource management considers employees as valued assets to influence organizations' competitiveness (Pfeffer, 1994; Yeganeh & Su, 2008). Due to varying of environment, organizations and people, Becker, Huselid, and Urich (2001) suggested the frameworks and policies of human resource management in holistic terms for an effective organization across vertical and horizontal integration, consistency, and organizational learning. Human resource management is thus viewed as an emerging cross functional integration, total contribution to the organization, innovative and creativity behaviour, customer value orientated, and diversity management of labour capital (Bagshaw,

2004). According to Mondy (2010), the practices of human resource management generally can be categorized into four key elements: (1) staffing involve planning, recruitment and selection, (2) development involve training, career planning, development, (3) compensation which also includes safety and health, compensation regardless of direct, indirect, financial and nonfinancial, and (4) employee relations. These four elements are the general practices of HRM in most organizations. Armstrong and Baron (2004) said that the configuration of people and their collective skills, abilities and experience, as well as their effort leverages in the interests of the employing organization are contributing to organizational success and contributing to competitive advantage. At the same time, Werbel and DeMarie (2005) suggested human resource management practices identify ways to align employees' knowledge and skills to support key business and organizational competencies which imply that human resource management has a strategic role in an organization.

Guest (1999) cited Storey (1987) was first to divide human resource management into "hard" and "soft" approaches. Hard human resource management also known as core human resource management (Brewster, Sparrow, & Harris, 2005), is viewed as utilitarian (Guest, 2002) which is related to quantitative and calculative aspects of managing the "headcount" employees as flexibly as possible with minimum labour costs (Drucker, White, Hegewisch, & Mayne, 1996). Its strategies are intimately associated with organizational strategic goals and seeking to gain its competitive advantage. Therefore, it relates to employment relations that focus on managers, employees' compliance, tasks, quantitative output, and development of the organization (Ivo, 2006). Whilst the soft model perceives employees as valued assets (Edgar & Geare, 2005; Guest, 1997; Storey, 1987) which is human oriented, employees are proactive inputs into productive processes through their communication, motivation, adaptability and commitment (Legge, 1995).

2.6.4 Process Management

The interest in process management has always remain high in management study (Hellström, 2006). Process management is the management discipline that is related to behavioural practices as well as the activities of process methodology involved during the production of products and services (Wong, Sim, Lam, Loke, & Darmawan, 2010). The objectives of well-managed processes are primarily related to quality performance such as reducing cost, minimizing cycle time and improving efficiency (Ju, Lin, Lin, & Kuo, 2006; Ooi, 2009).

Many scholars have written on the various definitions of process management differently and considered process management as one element of TQM. Powell (1995) pointed out that process management is linked to process improvement in terms of reduction of waste and cycle times across all areas or department processes by investigating the relationship between TQM factors and firm performance. Kaynak (2003) examined the relationship between TQM practices and firm performance. He described process management as a preventative approach toward the development of quality management and develops a four item scale which covers inspection, schedule stability, process automation, and fool-proofing. On the other hand, Choi and Eboch (1998) use five item scales and focused their study to examine the relationships between TQM practices, customer satisfaction and plant quality performance to monitor and improve work processes by reducing variation.

Process management begins with process design as a core element (Anderson, Rungtusanatham, & Schroeder, 1994; Evans & Lindsay, 2005; Juran & Godfrey, 1999). As noted by Evans and Lindsay (2005), to produce quality product, prevention of defects is to be proactive in the planning and implementation of process design. Besides, according to Hill (2000), labour cost reduction and labour saving opportunities are to be investigated during process design. Next, process control is the second element of process management.

Minimum variation is to be stable in the process control in order to improve a process (Evans & Lindsay, 2005) and process feedback is a key aspect of process control to ensure consistent production (Flynn, Schroeder, & Sakakibara, 1995). The last element of process management is process improvement. In order to compete over time, organizations must continuously improve their operational processes (Juran & Godfrey, 1999).

2.6.5 Customer Focus

Customer focus is considered as an important TQM practice because of its potential impact on organizational performance (Dean & Bowen, 1994). As viewed by Nwankwo (1995), looking customers at the center of an organization's product-market focus is the first strategic mechanism of managing customer-orientation effectively. The idea of customer focus is referred to as starting point that underpins and drive direction of any quality initiative (Sousa, 2003). Customer focus is a term generally refers to the extent of an organization express its skill in customizing high level of customer service that could fulfill customer satisfaction and meeting customer demands as closely as possible (Barlow & Ozaki, 2003). Numerous researchers viewed customer focus as the way it concerns about customer needs through customer relationship practices such as organizational practices, systems and procedures (Flynn, Schroeder, & Sakakibara, 1994; Morrow, 1997; Powell, 1995), while some researchers focus on organizational customer orientation (Ahire, Golhar, & Waller 1996; Douglas & Judge, 2001; Samson & Terziovski, 1999;).

Without doubt, maximization of customer satisfaction which aims to a meet or exceed customer expectation is a never ending agenda (Yaacob & Abas, 2011). Quality management organizations which focus on customers always strive towards continuous improvement (Fryer, Antony, & Douglas, 2007; Terziovski & Power, 2007), whereby customer expectation is perceived to be changing from time to time (Ortner, 2000). A number of previous studies

have been carried out to investigate the importance of customer focus for TQM. For example, Dean and Bowen (1994) argue that customer focus is the key component of TQM principle. They suggest that by designing and delivering products and services that meet customer needs is supposedly contributing to satisfying customers. Morrow (1997) asserts that organization should maintain close relationships with customers and seeks their feedback on a regular basis which will fundamentally underpinning the TQM practices. An organization is able to correct and revise its operation plans proactively by continuingly keeping track of customer complaints and roots out their dissatisfaction (Bhatt & Emdad, 2010). Ahire, Golhar, and Waller (1996) regard customer expectations as one critical to production process that an organization should review and adjust its operations in order to meet their expectation accordingly. Customer orientation has been acknowledged that it could lead to gaining market advantage. In the findings of Cai's (2009) study, organizational customer orientation is typically reported to affect customer relationship practices, which in turn to being able to influence production performance, customer satisfaction and further contributing to financial performance.

2.6.6 Information and Analysis

Information and analysis refers to the extent on how the collected data and information are being analyzed in order to improve quality (Hoang, Igel, & Laosirihongthong, 2006; Sila & Ebrahimpour, 2002; Prajogo & Sohal, 2003; 2004b). Information is one crucial component in the business operations especially in the context of digital management (Sen, 2001). From a report by top national daily in Malaysia, The Star, the IT spending in 2016 by Malaysian companies is expected to hit RM68b (USD15) This compares to USD3,410b expected IT spending in the whole wide world (The Star, 2016). The budget and expenditures on IT is by no means a small feat and it further proven that IT plays a key role in the input as well as

organizational performance factor in all businesses. According to Madnick, Wang, Lee, and, & Zhu (2009), many organizations are increasingly using technology for data collection, data storing and data processing into information. It focuses on data-base information to provide more selection criterion for decision making (Dean & Bowen, 1994; Hackman & Wageman, 1995). It also enables organizations to monitor and evaluate the relevant data, thus it is useful for management when require change in strategy, goals or processes (Feldman & March, 1981).

Information has become more fundamental component of technology based organization to improve and promote innovation (Lemos & Porto, 1998). Samson and Terziovski (1999) and Malcolm Baldrige National Award's (1999) criteria have indicated that information and analysis falls within the management, scope and application of data and information, which is to improve quality control, to sustain a good focus on customers, and to generate higher performance for an organization. Piskar (2006) highlighted that information and analysis is necessary to monitor all the activities and processes so that the plan can be aligned with organization's goals. As noted by Lee, Yang, and Yu (2001), greater efforts will be taken by organizations on practicing quality information and analysis to ensure an effective exchange of information between employees, suppliers, business partners and customers. Furthermore, information and analysis is one of significant elements of TQM in which it has been reported in Wong, Sim, Lam, Loke, and Darmawan's (2010) study to have an impact on improvement of quality performance when management monitor well on operation processes for delivering right products to the customers.

2.7 Review of Organizational Performance

Organizational performance is the key term for management to gain success in the competitive environment (Richard, Yip, & Johnson, 2009). An organization aims to be

successful in terms of gaining customers, inputs and capital in the competitive environment (Richard, Yip, & Johnson, 2009). There is no universal definition for organizational performance. Organizational performance is generally referred to the measurement on achieving level of desired objectives (Ho, 2008; Khang, Arumugam, Chong, & Chan, 2010). It has been always a question and critique on the basis of how to measure organizational performance. For example, Hoogh et al. (2004) criticized the performance measures focused only on a few subjective outcome in most leadership-performance research. Moreover, measurement of organizational performance is greatly relying upon environmental restrictions and may reflect forces beyond the leader's control (Heneman, 1986; Hoogh et al., 2004).

As proposed by Stock, Greis, and Kasarda (2000) and Vickery, Calantone, and Droge (1999), organizational performance associated with competitive environment on the degrees of market share, sales growth, sales profit margin and return on investment. Dyer and Reeves (1995) studied and segregate organizational performance into four outcomes i.e. human resource outcome (staff turnover and job satisfaction), organizational outcome (productivity and quality), financial outcome (profitability) and market outcome (growth and returns).

In this study, the measurement of organizational performance refers to the Zhang's (2000a) study in which the organizational performance measures with respect to four major categories of employee satisfaction, customer satisfaction, product quality and strategic business performance. These dimensions not only study the level of competitiveness of an organization in the marketplace, its financial condition and its failure or success possibilities, but also provide comparison across industries and organizations.

2.7.1 Employee Satisfaction

Employee satisfaction is an essential component in the measurement of organizational performance (Zhang, 2000a). Employee satisfaction also called job satisfaction (Buitendach

& de Witte, 2005), refers to the extent to which employees like or dislike their jobs (Zhang, 2000a). As asserted by Buitendach and de Witte (2005), employees evaluate their job satisfaction based on their perceptions of needs, expectations and job values. Spector (1997) perceived that satisfied employees are more likely to have impact on higher job performance, less absenteeism and low turnover. To increase effectiveness, this need to consider the factors that would influence the level of employee satisfaction such as workplace conditions, interpersonal relations, policy and management, empowerment and policy (Castillo & Cano, 2004).

Study by Nebeker, Busso, Werenfels, Diallo, Czekajewski, and Ferdman (2001) stated that employees are considered as the greatest assets, an organization looks for greater customer satisfaction when there is higher level of employee satisfaction. Employees would work in the organization to their best execution if they are satisfied with their job environment, and leads to promoting employee creativity, increase productivity, greater employee commitment and reduce employee turnover (Chen, Yang, Shiau, & Wang, 2006). In contrast, an organization may be unlikely to achieve success when employees are having negative feeling (Zhang, 2000a). As recommended by Kuo, Ho, Lin, and Kai (2010), employee empowerment and work redesign are important characteristics to promote employee commitment and loyalty. Employees are likely to be motivated to participate actively in the improvement of system when organization perceived the role of employees as a major part of the organization (Teh, Yong, Arumugam, & Ooi, 2009). Employee satisfaction also corresponds directly to the TQM model of HRM practices. With good HRM practices, the employee satisfaction is expected to be good ad contributing to the organizational performance.

2.7.2 Customer Satisfaction

Customer satisfaction is widely accepted to be one crucial element within TQM philosophy to improve customer service through minimal cost and high product quality (Gerson, 1993). This is also in line with the all the value proposition of the quality gurus discussed in the earlier sections. According to Anderson, Rungtusanatham, and Schroeder (1994), customer satisfaction is the degree of how an organization delivers products to customer in meeting customers' expectations. Emphasizing customer satisfaction is seen as the key objective of organizations aim to measure their customer centric orientation (Mihelis, Grigoroudis, Siskos, Politis, & Malandrakis, 2001). High customer satisfaction is believed to be considered as future profit indication of organization (Cengiz, 2010). In marketing context, customer satisfaction has been acknowledged as an essential potential driving for corporate strategy (Fornell, Mithas, Morgeson, & Krishnan, 2006) and firm's long-term profitability and market value (Gruca & Rego, 2005).

Satisfaction of the end customer is strongly associated with satisfaction of the whole customer chain. In terms of channel management, if an organization's wholesalers are not satisfied, it is possible that the end customer will be dissatisfied (Kocakoc & Sen, 2006). Organizations must be customer centric, otherwise it may lose revenue if customers are dissatisfied (Hepworth, 1997). Customers are more likely to be less price sensitive, less influenced by competitors, and to buy more products and stay loyalty when they are satisfied (Dimitriades, 2006). Fornell, Johnson, Anderson, Cha, and Bryant (1996) and Bolton and Lemon (1999) suggested that satisfaction not only is a mediator to influence the impacts on service and products quality, price or payment equity on loyalty, but also a significant affective component on repeated product or service usage (Oliver, 1999). Customer satisfaction is considered predominantly related to improving business performance as suggested by Dean and Bowen (1994) that customer satisfaction is a major element for continuous business success. Furthermore, past studies (e.g. Patterson, Warr, & West, 2004;

Xenikou & Simosi, 2006) observed employee job satisfaction is the main key to better organizational performance.

2.7.3 Product Quality

Dunk (2002) regards quality as fundamentally relating to competitive advantage because product quality is regarded as undeniable component for organization to maintain customer loyalty. The eventual satisfaction that a customer or consumer would derive from is non-other than the product and services rendered by the organizations, be it profit or non-profit, private or public organizations. This has been also clearly articulated by all the quality gurus and is widely accepted as universal business performance yardstick for all. Sadly, in some of the organizations especially from the developing economies product quality is still not seen to be the top agenda in some of the organizations where short term profit out-weights the long term investment in bringing up the product quality for organization's long term sustainability.

Organizations struggle to deliver quality, customers look for quality, and markets are decorated by quality (Golder, Mitra, & Moorman, 2012). In business context, evolution of quality began in the since 1950s as noted by many scholars to help manufacturing industry to improve product quality through programs such as TQM, the Baldrige Awards, and Six Sigma (Deming, 1982; Powell, 1995). The significant contribution from quality focus is that it serves as a foundation for strategic advantage that from improved product quality to improved performance (Daniel & Reitsperger, 1991; Terziovski, Sohal, & Moss, 1999). The scholars are obviously agreed that attention to customer's needs and requirements become the vital factors for manufacturing firms to compete for survival in the market place. For example, studies from Benson, Saraph, and Schroeder (1991) and Flynn, Schroeder, and Sakakibara (1994) found that the notion to improve product quality is seen to gain competitive advantage when the organization is able to meet customer oriented market through the improvement of

design and product manufactured. A study by Lin and Lu (2006) has indicated that product quality determines product innovation. They have regarded product quality as a framework of innovation which offers products that satisfy customers and environmental demands through new product development. Thus customer satisfaction is critical to gauge the performance level of any organization.

2.7.4 Strategic Business Performance

Organizations nowadays face a rapid changing environment with the development of science and technology which has led to shorten product life cycle and more competitive market (Zhang & Jin, 2006). To achieve sustainable competitiveness, an organization has to develop and implement strategic tools in the right way in order to fit internal and external environment (Zhang & Jin, 2006). O'Neill, Sohal, & Teng (2016) in a study on Australian companies concluded that firms with quality orientation shown differentiated financial performance. Therefore, strategic business performance becomes vital driver for an organization to succeed.

Throughout the years, numerous scholars have assessed generic strategy business performance (Capps, Jackson, & Hazen, 2002; Leask & Parker, 2007; Pandza & Thorpe, 2009; Porter, 1980). The definition and measurement of business performance has varied considerably depending on organization's objectives or practice. In Zahra and Covin's (1994) work, they examined strategy variables and concluded that technological leadership, capital and research and development as well as internal sourcing of technology are positively related to performance. Naumann and Giel (1995) refer to several measures of assessing strategic business performance in the domains of finance and marketing that include profitability, market share and sales growth. Slack, Chambers, and Johnston (2001) include two measures in assessment of performance: primary measure is the degree about the achievement on

performance objectives; and secondary measure degrees on the part of operation that meeting customer needs. These measures capture core ideas on the overall approach to be taken by managers and business management researchers to closely monitor and delivering high business performance – such as financial indicators on business performance i.e. turnover, profitability and productivity (Nickell, 1995; Estrin & Rosevear, 1999). In summary, most scholars would agree to a few selected indicators for organization performance which are; employee performance, product quality, customer satisfaction and some other strategic performance indicators such as sales and profitability performance and market leadership performance.

2.8 Review of Family Owned Enterprise

The importance and influence of family owned business in the trade and economy has gained attention from various segment of the society. For example, according to the statistics from the Family Enterprise Centre, University of Pittsburgh, it is believed, family owned business make up 50% of the Gross Domestic Product in the USA and 60% of the country's employment (Damast, 2007). And among the emerging economies, Malaysia as an example, 70% of the public listed in Malaysia is family owned (Amran & Ahmad, 2010). Furthermore, Ibrahim and Samad (2010) stated that the list of the 40 richest Malaysians in 2008 is mainly from the family based business entity; of which, 27 are family based and account for 67.5% of the top 40.

The contribution towards the society from family owned business also received recognition from the academic circle. For examples, some renowned universities have set up research centres which focus on this area. For example, Wharton School with their Wharton Entrepreneurship and Family Business Research Centre, IMD with its IMD Family Business

Centre and Australian Centre for Family Business, Bond University just to name a few examples.

Chrisman, Chua, and Steier (2005) describe the definition of family business can be anchored from four corners, (1) family's influence over strategic direction of a firm; (2) the intention of the family to keep control; (3) family firm behavior; and (4) unique inseparable, synergistic resources and capabilities arising from family involvement and interaction. On the other hand, Chua, Chrisman, and Sharma (1999) define family business as "a business governed and managed by with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or small number of families in a manner that is potentially sustainable across generation of the family or families". Chua, Chrisman, and Sharma (1999) believe that the definition should take into account of the behavioral and intention aspect of the business, which is viewed to be different from non-family firms. Similarly, based on extensive literature review, Chua, Chrisman, and Sharma (1999) proposed that, family business is a business governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families. By these definitions, if the intention is clearly to make the said business sustainable across generations, even the businesses that are not owned but managed by a family with the intention of sustainability across generations, fits into this definition.

And some businesses has have remained in the same family for hundreds of years. Probably one of the oldest continuous operating family businesses is in a Japanese hotel called Ryokan Hoshi, which was founded in 717, and the 46th generation is still running the business (Hutcheson, 2007). In Malaysia more than a century old companies such United Malacca Berhad which is listed in Bursa Malaysia was incorporated in 1910, and currently is

in the hand of third generation. The company was founded by the late Tun Tan Cheng Lock and passed to his son the late Tun Tan Siew Sin and currently being chaired by Siw Sin's daughter Datin Paduka Tan Siok Choo. The company is still active in the plantation sector generating more than RM200m revenue a year with profit after tax of about RM60m.

Other than having long history, some family businesses could have grown into very large corporations. Some of these large family businesses are still tightly held as a privately owned companies such as Cargill Co with its a number of employees that stood at 130,000 (Solomon, 2011) which and is still 88% owned by the two founding families. Some choose to list their companies in the stock exchange but retained control either in management of shareholding, such as Ford Motor. However, it is also true that many businesses flourished and many failed, family business included. Fewer than one in three survives the second generation (Perman, 2007). For the examples from Malaysia, it is none other than the business empire owned and managed by the Mr. Robert Kuok and his family members which span from plantations, manufacturing, fertilizers, hotels, shipping, properties and consumer products. This has put the Kuok family in the league of one of the richest person/family in the world.

The terms of family business and small business are not similar. The practice of family business is to be more focus on the management and control methods (Chrisman, Chua, & Litz, 2003; Habbershon, Williams, & MacMillan, 2003). Daily and Dollinger (1992) define family enterprise as to be owned, controlled and managed by the single family's members. Chrisman, Chua, and Steier (2005) identified family firms are the involvement of family members over the management, ownership and control transfer. There are three operational definitions of family owned business according to Astrachan and Shanker (2003). First, the family has voting control over the family owned business. Second, direct family is involved in

the daily business procedures. Lastly, combination of voting control and multiple generations are worked together in managing the daily business procedures.

In investigating family firm performance, Upton, Teal, and Felan (2001) found that family enterprise is characterized with innovative and fast growth when applying a high quality strategy, thereby market share is likely to be increased as superior benefits to customers enable firm differentiate from competitors. In addition, Hendricks and Singhal's (2001) study has discovered that better performance can be achieved when firm size is small, less capital intensive and less diversified when comparing with larger, more capital-intensive and more diversified firm. Having such small business management, research has revealed that better financial performance could be accomplished through business planning (Ibrahim, Angelidis, & Parsa, 2004; Miller & Cardinal, 1994). Also, according to Dyer (2006), the involvement of "family effect" in performance has ascertained that alignment with ownership of family-specific resources would lead to costs savings and reduce the enlargement of agency problems. The reduction in agency costs which is associated with savings and surplus resources that family owned enterprises tend to have the possibility to generate greater financial returns (Miller & Le Breton-Miller, 2006).

After the rigorous statistics churning, testing and elimination, in their findings, Miller, Le Breton-Miller, Lester, and Cannella (2007) concluded that the performance assessment of the family business was largely depends on the definition of what family business is in the sample design. They discovered that high-performance firms were largely companies with large personal owners with large ownership and who do not have relatives associated with the firms or lone founder family firms. Empirically they did not find any superior market valuation if lone founder business is removed from the family business definition. They further concluded that neither lone founder nor family firms exhibited superior valuations

within a randomly drawn sample of companies. The results also confirmed the difficulty of assigning extraordinary performance to a particular controllable variable.

However, Miller, Le Breton-Miller, and Scholnick (2007) contribution to the review may not be absolute as in the study since only Tobin's q (See Appendix II) was used as the performance measurement indicator. In their own critics, Miller, Le Breton-Miller, and Scholnick (2007) pointed out that Tobin's q is not a fool proof tool for the performance assessment as it does not directly reflect other factors of performance such as real returns of the stocks and the risks that come with it.

On the other hand, Villalonga and Amit (2006) also using equally large sample size (from Fortune 500) and Tobin's q measurement on the firms' performance, concluded quite differently from Miller, Le Breton-Miller, and Scholnick (2007). They stressed that the family firms only create value when the founder (and can also be with other family members together, which is different from lone founder in Miller, Le Breton-Miller, and Scholnick's (2007) study, still holding holds the main position such as the CEO, or Chairman in of the company or family firms with a hired CEO. They also specifically pointed out the descendant managed family firms have a tendency to destroy value.

In an earlier study, Ellington, Jones and Deane (1996) have concluded in their study that family owned firms with the highest performance are also found to be adopting TQM more holistically. In a case study on a big family owned supermarket chain in Spain, Callejo (2012) has also concluded TQM approach has helped the firm to achieve spectacular results with profitable growth as well as able to face challenging situation of economic crisis (from 2008 to 2011). As one of the uniqueness of family owned businesses is to pass down the ownership to the next generation or another family member, sustainability of the family owned firms is utmost important in the business and family agenda (Abouzaid, 2008). At the same time the sustainability of the firms depends greatly on the organizational performance. The threat of

the business being closed down is high and real. It was reported that 95% of the family owned business does not survive the third generation (Neubauer & Lank, 1998). Therefore the issue of whether TQM practices could provide impetus to improve the family owned business firm performance which leads to sustainability as well as keeping the ownership within the family would be of great relevance to the society and business family owners.

In summary, family owned business has its own major contribution to our economic and society. Its unique characteristics set it apart from the other types of businesses such as institutional owned firms, cooperatives or non-profit organizations. The performance and sustainability of a family owned firms, as well as suitability or contribution of TQM practices shall be one area that shall warrant the study.

2.9 Conclusion

In this chapter, this study has discussed the evolution of quality management. It then reviews quality prescriptions by the quality gurus include Deming, Juran, Crosby, Ishikawa and Feigenbaum. An examination was discussed on three quality award models MBNQA, EQA and Deming Prize. After a comprehensive literature review on TQM concept, six key practices of TQM are identified in this study, namely leadership, strategic planning, human resource management, process management, customer focus and information and analysis. Further literature on organizational performance was reviewed and categorization of its concept into employee satisfaction, customer satisfaction, product quality and strategic business performance. Lastly, theory of family owned enterprise was also studied. This study hence looks at the issue from the family owned enterprise perspective to investigate the relationship between TQM and organizational performance. The next chapter proposes a conceptual framework and hypotheses development of this study.

CHAPTER 3

RESEARCH MODEL AND DEVELOPMENT OF HYPOTHESES

3.1 Introduction

This chapter presents the research model and development of hypotheses. Section 3.2 demonstrates the formulation of theoretical framework based on the relationship between TQM practices and organizational performance. Followed by section 3.3 describes the hypothesis development: (1) leadership and organizational performance; (2) strategic planning and organizational performance; (3) HRM and organizational performance; (4) process management and organizational performance; (5) customer focus and organizational performance; and (6) information and analysis and organizational performance; (7) firm size and moderating effect; (8) industry type and moderating effect and lastly (9) firm's ownership and moderating effect. Section 3.4 presents the chapter's conclusion at the end.

3.2 Research Model

The research model is formulated to examine how the TQM practices are associated with organizational performance of family owned and non-family owned enterprise. Six independent variables, namely leadership, strategic planning, HRM, process management, customer focus and information and analysis are the key practices of TQM, while the dependent variable is organizational performance as presented in the research model. Even though there are number of empirical research studies conducted to explore the relationship between TQM practices and organizational performance, however, insufficient research being done on this relationship in family owned enterprise and TQM especially in the context of Malaysia. Therefore, this study proposes a research model that can be considered as an

initiative to close the gap by examining this relationship in the family owned enterprise. The research model is presented in Figure 3.1 as below and the relationships of the TQM practices and organizational performance are further explained and developed in the subsequent sections, therefore forming the research model.

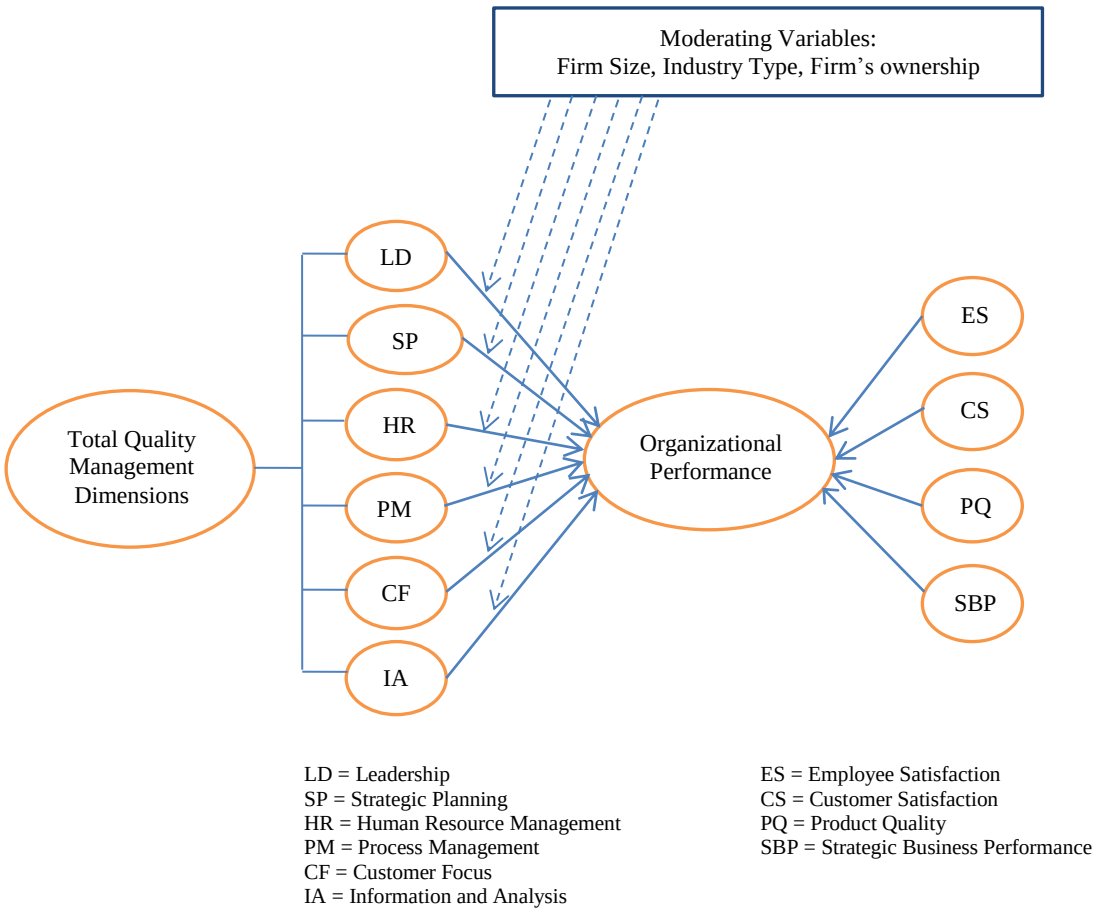

Figure 3.1: Research Model of TQM Practices and Organizational Performance

3.3 Relationship between TQM Practices and Organizational Performance

Since 1980s, TQM has been acknowledged as a competitive concept for a firm to compete for success (Kuei, Madu, & Lin, 2001). According to Vouzas (2007), a noted distinction of implementing TQM is to improve organizational performance and to gain

competitive advantage. The efforts of TQM are associated with a significant commitment of changes in culture, processes, strategic objectives and system belief of an organization (Motwani, 2001). When TQM is properly implemented would lead to change in culture as well as improvement of operational performance (Leonard & McAdam, 2004). It was found that TQM organizations outperform non-TQM organizations in improving organizational performance (Sila, 2007). This was supported by Yeung, Cheng, and Lai's (2006) study whereby they conducted a study for the investigation of TQM impact on a sample of 225 electronics manufacturing firms, the results showed TQM organizations achieved better performance than non-TQM organizations in terms of cost-related and time-based operational effectiveness, customer satisfaction, marketing and financial performance. Similar finding reported by US Government Accounting Office Study (GAO, 1991) also supported that organization applies TQM concept (such as leadership, empowerment, training, customer focus, involvement and application of fact finding and decision making) is strongly associated with organizational performance. Huarng and Chen (2002) conducted a survey on 64 TQM companies in Taiwan, results from linear regression analysis found that both TQM philosophy and TQM method can improve quality and business performance. In Brazil, de Sousa Jabbour, Jabbour, Latan, Teixeira, & de Oliveira (2014) conducted a study on 95 firms with ISO 14001 certification concluded that quality management together with environmental management do enhance the green performance in the firms.

In order for organizations to achieve the research aim on quality management program to be successfully implemented, TQM researchers attempt to determine the principles of TQM to improve TQM effectiveness. Organizations have taken many actions to develop a set of management practices for continuous improvement. Numerous past studies (Ahmed, Aoieong, Tang, & Zheng, 2005; Ju, Lin, Lin, & Kuo, 2006; Lewis, Pun, & Lalla, 2005; Prajogo & McDermott, 2005; Sila & Ebrahimpour, 2005; Tari, 2005) have suggested various

key factors for the implementation of TQM that include leadership, strategic quality planning, continuous improvement, knowledge and education, employee management and involvement, process management, customer focus, information and analysis and supplier management. Talib and Rahman (2010) proposed a model of nine critical dimensions (i.e. top management commitment, customer focus, training and education, continuous improvement and innovation, supplier quality management, quality information and performance measurement, employee involvement, employee encouragement and benchmarking), which could help to maintain a fit with the changing environment toward effective results of business excellence in service organizations. Similarly, Fotopoulos and Psomas (2010) conducted an examination of the structural relationships between TQM factors and organizational performance, 370 Greek companies were analysed using structural equation modeling. According to their findings, quality management factors consist of quality practices of top management, quality tools and techniques, process and data quality management, customer focus and employee involvement were significantly affecting small-medium companies' performance in relation to their natural and social environment, internal procedures, customers and market shares. Demirbag, Tatoglu, Tekinkus, and Zaim (2006) synthesized seven critical success factors of TQM practices from their survey of small and medium enterprises in Turkish, namely role of top management, training, employee relations, supplier quality management, process management, quality data and reporting, and quality policy. Antony and Fergusson (2004) analyzed eleven critical factors which aimed at continuously attributed to TQM implementation in UK manufacturing and service industries. They are customer focus, continuous improvement, teamwork and involvement, top management commitment, training and development, quality systems and policies, supervisory leadership, communication, supplier partnership/management, measurement and feedback, and cultural change. In another empirical study which was conducted by Dayton (2003), he identified ten critical success factors to the success of TQM

implementation. They are communications, customer satisfaction, teamwork structures for improvement, supplier partnerships, strategic quality management, external interface management, people and customer management, operational quality planning and quality improvement systems. Wiengarten, Fynes, Cheng & Chavez in 2013 identify seven practices closely related to TQM, namely visionary leadership, internal and external cooperation, learning, process management, continuous improvement, employee fulfilment, and customer satisfaction, have strong positive impact on operational performance in companies with high level of innovative characteristics.

After the thorough review of TQM literatures, we identify six commonly accepted constructs of TQM practices, namely leadership, strategic planning, human resource management, process management, customer focus, and information and analysis were selected in this study based on two reasons. Firstly, these practices have been widely accepted by numerous scholars (e.g. Ahire, Golhar, & Waller, 1996; Terziovski & Samson, 1999; Flynn, Schroeder, & Sakakibara, 1994). Secondly, these practices have been well-accepted by the MBNQA for organizational performance (Prajogo & Sohal, 2003).

3.3.1 Leadership

Support from top management with participation of proactive leadership is generally considered as a principal requirement in supporting broad-based quality initiative for an organization's success (Jacobsen, 2008). According to Gonzalez and Guillen (2002), participation and commitment from top management are essential to support efficient allocation and utilizing resources for the accomplishment of firms' objectives. The roles of leaders are primarily about establishing the vision and direction and ensure that resources are in alignment to the goals and objectives of an organization (Sadikoglu, 2008). Leadership, as defined by Yahchouchi (2009) refers to a process in which one person influences the other

people for the successful achievement of their individual and organizational goals. The impact of leadership has been viewed as an important belief that could affect organizational performance (Rowe, Cannella, Rankin, & Gorman, 2005) and in evoking performance among subordinates (Berson, Shamair, Avolio, & Popper, 2001; Zacharatos Barling, & Kelloway, 2000). Team leaders provide subordinates on valuable insights and what actions they are supposed to coordinate so that they can outperform others to cope with challenges from the business environment (Mehra, Smith, Dixon, & Robertson, 2006). It has been asserted by Rehman, Shareef, Mahmood, and Ishaque (2012), effective leaders support change when facing ambiguity, uncertainty and risks, whereas a poor leadership often leads reluctance to change. An effective leadership fosters to improve performance when organizations are facing challenges (McGrath & MacMillan, 2000). Organizations need strong leaders that are willing to inspire and motivate competent employees for the achievement of organization's goals (Xirasagar, 2008). Furthermore, organizations with effective leaders are able to respond to changes in the environment; thus sustains better performance (Vardiman, Houghston, & Jinkerson, 2006). As such, managers and management researchers concur that good leadership yields organizations' effectiveness (Andersen, 2002). With an effective leadership in place, it is suggested that the team leader will spur the team to face to the changes in environment by implementing cooperative actions (Mehra, Smith, Dixon, & Robertson, 2006) in order to encourage better commitment, increase motivation, encourage cohesion and increase trust within the team that would result in improving the performance of an organization (Zhu, Chew, & Spangler, 2005).

A leader is believed to have an influence on satisfying employee, as opined by Kotter (1990) that leaders are responsible in setting direction, aligning and motivating employee behaviours. Thus, leaders would affect the traits of employees (Wexley & Yukl, 1984). It is essential that through a committed leader, employees' commitment can be enhanced (Bass &

Riggio, 2006; Miia, Nicole, Karlos, Jaakko, & Ali, 2006; Sivanathan & Fekken, 2002) and finally to motivate them to outperform beyond expectation (Hater & Bass, 1988). Employees are satisfied when leaders are supportive (Yukl, 1971), however poor productivity, higher absenteeism and greater turnover are the effects from an unsatisfactory leader-employees relationship (Keashly, Trott, & MacLean, 1994; Ribelin, 2003). Henceforth, it resulted low organizational performance (Page & Vella-Brodrick, 2008; Riketta, 2008; Scroggins, 2008; Pitts, 2009). According to Voon, Lo, Ngui, and Ayob's (2011) study, there is a significant relationship between leadership and employee satisfaction. Leadership has the ability to spur subordinates towards their own self-motivation to adopt new method for the accomplishment of group and organization's objectives (Iqbal, 2009). Similarly, in another research carried out by Nielsen, Yarker, Randall, and Munir (2009), in search of the factors that comprise of team efficacy and self-efficacy that affect employee satisfaction from a sample of 274 employees who worked in the elderly healthcare sector in a large Danish local government, the findings revealed that self-efficacy and team efficacy mediate the effects of employee job satisfaction.

Higher level of customer satisfaction depends on how the customer's expectation can be achieved, it is noted by González and Guillén (2002) that top management leadership plays an important role to allocate resources efficiently. Prior research like Terziovski (2006) has carried out a research study by collecting 962 Australian manufacturing firms and 379 New Zealand manufacturing firms to test the relationship between TQM practices and operational performance whereby the result has confirmed that leadership can impact on customer satisfaction. Findings from other studies such as Pannirselvam and Ferguson (2001) and Sit, Ooi, Lin, and Chong (2009) also showed that leadership has significant relationship with customer satisfaction. One hundred and forty managers form the sample collected from among the Malaysian service firms in a study carried out by Sit, Ooi, Lin, and Chong (2009) concluded that leadership has a positive impact on higher level of customer satisfaction.

Past scholars like Anderson, Rungtusanatham, and Schroeder (1994) and Dean and Bowen (1994) have pointed out the importance of leadership in quality management literatures. They suggested that TQM is the foundation of performance improvement that interlinked with process quality. Lakshman (2006) stated that a successful quality management begins at the top management, whereby the role of leadership at the top management has an impact on the quality improvement process in terms of designing and producing the products and services. An effective leader is willing to work closely with followers so that the shared objective can be achieved through the implementation of TQM (Hertzler, 1994). According to Srinivas (1995), competent leaders call to improve quality in continual basis. An effective leadership has the role in managing quality through selecting quality material (Flynn, Schroeder, & Sakakibara, 1995; Trent & Monczka, 1999), it thus has the potential to allocate resources adequately at different phases for continuous improvement in managing quality (Karuppusami & Gandhinathan, 2006). This is also is supported by an empirical study conducted by Das, Kumar, and Kumar (2011), through a study on how leadership can improve product quality on 265 sample companies collected among ISO 9000-certified Thai manufacturing firms. Leadership was proven to have significantly improved product quality.

The principles of leadership which comprised of integrity, openness and transparency enable organization to meet the challenges of change for solving problems at all time and concurrently improving performance (Alimo-Metcalfe, Alban-Metcalfe, Bradley, Mariathasan, & Samele, 2008). Thus, the principal objective of leadership is not only to increase output, but also to improve performance (Graetz, 2000, Breevaart, Bakker, Hetland, Demerouti, Olsen & Espevik, 2014). It has been stated by Tombaugh (2005), optimistic leaders drive to implement correction for solving difficult situation and positive leaders tend to improve performance and to enhance firm success by developing necessary skills. Valmohammadi

(2011) had conducted an empirical work testing on 65 Iranian manufacturing SMEs to evaluate the relationship between TQM implementation and organizational performance. The data was collected from top management and the findings indicate that leadership plays a crucial role in enhancing organizational performance. The results from previous empirical studies also have confirmed that commitment from top management like leadership had significantly resulted in higher level of performance which include quality performance (Brah, Wong, & Rao, 2002) and innovation performance (Feng, Prajogo, Tan, & Sohal, 2006). Thus, leadership is therefore hypothesized to have a positive relationship with organizational performance:

H1: Leadership will contribute to organizational performance.

3.3.2 Strategic Planning

According to Brah and Lim (2006), strategic planning plays an important role to help organizations in adapting their action plans to suit with the changes in the market. Therefore, strategic planning is pertinent to every organization regardless profit and non-profit organizations (Ketokivi & Castaner, 2004). Strategic planning is also used as setting the direction of an organization whether it is short-term and long-term organizational goals (Tari, 2005). In other words, strategic planning serves as a framework for directing an organization on how the action plans can be devised and implemented efficiently and effectively (Tan, 2013).

In general, the efforts of strategic planning are mainly manifested by upper-level management to adapt changes over the entire organization (Ingman Kersten, & Brymer, 2002). The introduction of strategic planning is expected from the recommendations for change that would lead to creating new and innovative thoughts that are implemented by an organization

(Korosec, 2006). He further claimed that strategic planning could improve decision making, enrich organizational responsiveness, improves performance and supports teamwork. Additionally, the planning efforts can be an effective tool in creating a unified working environment to improve cooperation for teamwork, setting clear goals and minimize conflict and anxiety among managers throughout the organization (Nutt & Backoff, 1993; Porth, 2003). Therefore, employee capabilities and employee job satisfaction would be strengthened by applying strategic planning on effectively and clearly delegating of employees' task (Ketokivi & Castaner, 2004). According to Teh, Ooi, and Yong (2008), strategic planning was suggested do have an impact on role stressors that consisted of role conflict and role ambiguity, whereby lower degrees of role stressors will be associated with higher degree of strategic planning. In their proposed theoretical framework, they believe when strategic planning is being executed, better understanding of role tasks for each employee will be aware of their positions and thus have greater clarity to pursue them to reduce role conflict and role ambiguity. Therefore, the extent of employee satisfaction could be enhanced with the perception that a better understanding of organizational goals as well as strategic and tactical plans.

Strategic planning is seen to be a management tool to improve quality. An uncertain and inaccurate control system will result in difficulty on evaluating the deviation between the standard and actual output when lacks of proper planning (Tan, 2013). In line with this, strategic planning is believed to drive innovation to produce higher product quality in the production process and development for new patented products (Gibbons & O'Connor, 2005; Stewart, 2002; Upton, Teal, & Felan, 2001). Using the finding of Prajogo and Sohal (2003), they found TQM has significant relationships with product quality whereby the performance of product quality could be enhanced by a strategy focusing on improving processes. Wong, Sim, Lam, Loke, and Darmawan (2010) using 116 samples gathered from ISO 9001:2000

certification manufacturing organizations also concluded the perception that having greater control on resource allocation in place in the production process is likely to have higher degrees of product quality.

Past literatures have claimed that alignment between strategy and performance measurement is essential for organization (Dyson, 2000; McAdam & Bailie, 2002). Organizations having strategic planning are more likely to gain better performance, minimize uncertainty and better understanding of environment (Tan, 2013). Tapinos, Dyson, and Meadows (2005) claimed that the development in strategic planning can help organizations towards performance. Besides, arguments have been forwarded that formal plans are more superior with regard to the planning ideas and objectives as compared to informal plans (Shrader, Mulford, & Blackburn, 1989). It was evidenced by Temtime's (2000) study that formal planning has been addressed with clearly listed objectives and hence it does encouraged organizations to outperform. On the other hand, Feng, Prajogo, Tan, and Sohal (2006) surveyed 194 Australian and 58 Singaporean organizations to investigate the multidimensionality of TQM and organization performance. Their results proved that strategic planning significantly impacted on organizational performance. In short, by undertaking strategic planning in small and medium sized enterprises would influence on firm performance like high growth in sales, higher profit margin and increased returns on assets (Bracker, Keats, & Pearson, 1988; Miller & Cardinal, 1994; Berman, Gordon, & Sussman, 1997; Gibson & Casser, 2005). Therefore, the following hypothesis is developed:

H2: Strategic planning will contribute to organizational performance.

3.3.3 Human Resource Management

According to Storey (1992), human resource management is considered as a dynamic mechanism of managing people. Human resource management has significant effect on improving quality of work and revenue in an effective managing system (Cascio, 2003). Therefore, the role human resource management is being suggested as a fundamental element to help an organization to gain success when it is implemented effectively (Stavrou-Costea, 2005).

Research evidence has shown the practices of human resource management improve organizational performance which has led to contributing to the satisfaction of customer and employee, innovativeness, productivity and improve reputation across organization's community (Delaney & Huselid, 1996; Noe, Hollenbeck, Gerhart, & Wright, 2010). Likewise, a study conducted in Taiwan by Lee and Lee (2007) to examine the linkages of human resource management practices, leadership style, competitive strategy and business performance of steel industry. Through the findings, human resource management practices (i.e. employee security, performance appraisal, human resource planning, compensation/incentive, and training & development) have proven to support organizations in improving their business performance which include product quality, employee's productivity and organization's flexibility. Besides, recent empirical evidence has reported human resource management practices would influence organizational performance. Che Ros and Kumar (2006) have studied on 300 Japanese multinational firms to examine the influence of human resource management strategy on performance and the outcome from statistical analysis using SPSS has shown organizational performance was significantly affected by human resource management practices. Other studies by Tzafrir (2006) and Wang and Zhang (2005) also have supported HRM practices to bring positive impact on organizational performance.

Several human resource management practices that are related to innovative strategy, namely incentive remuneration, job flexibility, work security, task flexibility, teamwork and

training are found to have influenced greater levels of productivity and employee job satisfaction as suggested in Ichniowski, Shaw, and Prennushi's (1997) study. Teamwork was proven to be a key factor of human resource management practices as it could influence employees' satisfaction as validated in the study of Ooi, Arumugam, Teh, and Chong (2008) where they used responses from 173 production employees to examine their perception of linkage between the TQM elements and job satisfaction in three main electrical and electronics sectors in Malaysia. With the perception of human resource management in place, it can assist organizations to improve productivity and business performance in accordance to the research carried out by Ramsey, Scholarios, and Harley (2000). Many earlier researchers such as Conti (2005), Ballot, Fakhfakh, and Taymaz (2006) and Dearden, Reed, and van Reenen (2006) found that the implementation of training encourage employees to share knowledge with each other and thus improving productivity. Training acts as a mediator to enhance employees' work-related knowledge via skills development (Swanson, 1999) is likely to foster employees to perform better in an efficient and effective mode when performing task and subsequently it leads to improve organizational performance (Rothwell, Sullivan, & McLean, 1995). Therefore, the following hypothesis is developed:

H3: Human resource management organizational performance.

3.3.4 Process Management

Process management refers to a system that comprised of many processes in which the methods are applied to improve and to be well-suited with the organization's processes (Benner & Tushman, 2003) and towards the accomplishment of organization's goals like production, processes of delivering and innovation (Brah & Lim, 2006). In order for an organization to improve and optimization, process management acts as the role in managing

and discovering all activities along the production of goods and services (Smith & Fingar, 2003).

Business processes are determined through the linkages of horizontal key activities that perceived to have an influence on customer (Zairi, 2005). According to Wilkinson, Redman, Snape, and Marchington (1998), production and work process control techniques are fundamental to ensure the correct functioning of process design such as "just in time", ISO 9000 norm and the seven basic quality control tools. The process management concept has attracted many research attention as well as research interest from many scholars (Armistead, Pritchard, & Machin, 1999; Wharton, 2005). To prepare for better process management, Smart, Maddern, and Maull (2007) identified five common application elements as pre-requisites namely (a) process strategy, (b) process architecture, (c) process measurement, (d) process ownership and (d) process improvement. Maddern, Maull, Smart, and Baker (2007) carried out investigation from empirical work in attempt to determine the key drivers that would effect on customer satisfaction. Process management has been suggested in the study as the driving factor to affect customer satisfaction. Likewise, findings from another similar study in investigating business process management and customer satisfaction relationship was conducted by Kumar, Smart, Maddern, and Maull (2008). Data gathered for this research were within a large bank sector in UK. The results have highlighted the importance of business process management as a critical driver to determine customer satisfaction.

The importance of process management in influencing product quality has been reviewed by past scholars since two decades ago like Adam (1994) and Mann and Kehoe (1994). No doubt, well-organized task practices and effective order of operating processes are suggested to minimize handling tasks of operators, to support work design and to streamline the process flow of manufacturing program (Kasul & Motwani, 1995). As such, the functions of business process management refer to supporting daily processes and to maintain the

performance as per schedule plan (Aalst, Hofstede, & Weske, 2003). In manufacturing field, process management is related to well organized operation system to strive for no missing materials, zero breakdown and no variation on workforce (Flynn, Schroeder, & Sakakibara, 1994). In accordance to this, lower degrees of process variation is believed to effect on producing higher output, minimize errors, reduce rework machine time and saving materials (Deming, 1986) which will lead to improvement in product quality management.

In recent years, researchers such as Ju, Lin, Lin, and Kuo (2006) and Ooi (2009) have pointed out that by implementing a well-managed process would have the benefits of reducing cost, lower cycle time and improved quality performance efficiency. On the other hand, an effective process management is suggested to be correlated with quality performance through reduction of process variance (Lee, Yang, & Yu, 2001). Arumugam, Chang, Ooi, and Teh (2009) have conducted a survey on 299 employees working within a major computer hard disk USA based manufacturing company in Malaysia. The analysis outcome from multiple regression revealed that process management has significant relationship with the organization's strengths. Therefore, the following hypothesis is presented:

H4: Process management will contribute to organizational performance.

3.3.5 Customer Focus

Customer focus is commonly viewed as the aptitude of an organization's skill to deliver high degree of customer satisfaction skill by meeting customer needs so that greater degree of customer service can be produced as much as possible (Barlow & Ozaki, 2003; Lemon & Verhoef, 2016). On the other hand, according to Nwokah and Maclayton (2006, p. 65), customer focus is "a central tenet of market orientation". They opined that being customer focus is emphasizing on the interest of customer such as after-sales service, regularly

soliciting comments and complaints from customers. The main aim of customer focus is to continuously satisfy customer's needs efficiently and effectively (Brah, Wong, & Rao, 2000; Sila, 2007). In order to produce superior products or services, it is essential to emphasize customer orientation whereby a sufficient understanding of the customer is to be taken place (Narver & Slater, 1990).

Greater customer satisfaction is deemed to derive from employee satisfaction in TQM perspective (Dean & Bowen, 1994). Through customer focus, higher employee satisfaction could be developed in a favorable working environment by understanding customers' feedback (Griffin, 1982). This statement was validated by Ooi, Bakar, Arumugam, Vellapan, and Loke (2007), they assessed 230 samples from a Malaysian outsourcing semiconductor assembly and test organization to investigate how the elements of TQM can influence employees' job satisfaction. The theoretical model was tested by using multiple regression analysis, customer focus was shown from the empirical study to be positive and significantly impact on employees' job satisfaction. The strong relationship between customer focus and employees' job satisfaction from their finding also has shown the importance of customer focus to improve employee satisfaction.

In service management perspective, Sousa (2003) stated that customer focus will lead to quality improvement. Indeed, according to Oakland (2005), identifying customers' needs and delivering customers satisfaction were greatly interlinked with quality improvement. To satisfy customers, understanding well of what customers expect and require during product design and development would minimize quality problems (Flynn, Schroeder, & Sakakibara, 1994; Kaynak, 2003). Furthermore, customer survey, customer feedback and complaint analysis as proposed by past researchers to investigate and carry out analysis on evaluating customer satisfaction (Wong, Sim, Lam, Loke, & Darmawan, 2010) will aid in further quality improvement. The availability of customer satisfaction evaluation system is imperative to

identify problems and hence suggested for remedy action (Juran & Gryna, 1993). Due to the above perceptions, customer focus has been adopted to improve quality management in the past studies like Adam et al. (1997) and Jeng (1998). An empirical study was conducted by Arumugam, Ooi, and Fong (2008) in Malaysia where the relationship between TQM practices and quality management performance was examined by gathering one hundred and twenty two ISO 9001:2000 certified manufacturing organizations. The findings from the data were analyzed using multiple regression analysis revealed that customer focus was perceived as primary TQM practices in quality management.

According to Reed, Lemak, and Montgomery (1996), having understanding customer needs is likely to improve product quality, lower defective production cost and also reduce excessive production. It has been validated by numerous earlier research works that customer focus has strong effect on various business performances. Examples are the research from Slater and Narver (1995, 1998) have indicated that customer focus enables organizations to have higher level of satisfying customers' requirements; whereas the studies by and Kaynak (2003) and Samson and Terziovski (1999) also have supported organizations would increase greater levels of financial performance when they are able to improve production and quality performance. Proctor (2000) argued that an adverse impact on business performance will ensue if the firm fails to take note on customers' influence. In Nigeria, Nwokah and Maclayton (2006) explore the relationship between customer focus and performance indices (i.e. sales growth, profitability and market share) among a sample of 60 food and beverages organizations. Using a multiple regression analysis, results supported customer focus has a direct effect on food and beverages organizations' sales growth. Thus, the following proposition is put forward:

H5: Customer focus will contribute to organizational performance.

3.3.6 Information and Analysis

Information, according to Sen (2001) is deemed to be a fundamental aspect in business operations. The main roles of information are to help organizations for the determination and identification of key database as well as improving organization process to be innovative (Lemos & Porto, 1998). On the other hand, information and analysis is imperative for monitoring activities and processes effectively and efficiently so that the plan of an organization can be achieved (Piskar, 2006). It is undeniable that technology plays a key role in organizations for collection, processing and storing data into information (Madnick, Wang, Lee, & Zhu, 2009). Organization need to focus on managing information to compete to survive (Hsu, Lawson, & Liang, 2007).

As affirmed by Phusavat, Kanchana, and Helo (2007), information technology has major contribution to customer for demanding cost reduction, better quality and enhanced market delivery. Quality information and analysis will help an organization to make sure high quality data and information are delivered at all time to all users (Lee, Yang, & Yu, 2001). As such, sharing of information among business partners, suppliers, customers and employees through the application of information and analysis (Lee, Yang, & Yu, 2001) are expected. Additionally, by having the availability of information and analysis, it is being suggested that employees tend to improve their skills and competencies, and thus leading to positive effect on job satisfaction. According to Gunasekaran, Korukonda, Virtanen, and Yli-Olli (1994), conflicts among departments are less likely to occur with reliable information. Therefore, quality information and analysis reduces employees' role conflict when information becomes accessible and enable employees have a clearly defined functions, actions and roles to be executed (Teh, Yong, Arumugam, & Ooi, 2009), thus improving employee satisfaction.

According to Feldman and March (1981), information is essential for top management to make necessary amendments in accordance with planned processes or goals. With the perception that an effective information application is related to performance indicators, product performance can be improved accordingly (Tan, 2013). For an example, delivering the right products at the right time when management has a proper monitoring on the operation process through intranet. Information from benchmarking will lead to evaluation of the difference on operating and financial performance against competitors is to be applied by organizations to gauge the performance in a competitive environment (Murray, 1997). By having a comparison on performance, expectations and assessment with the best competitors' performance, various information on getting better performance will be developed by the organizations (Richman & Zachary, 1993). In another similar study using information and analysis from Balanced Score Card (BSC) Mateos-Ronco, & Hernández Mezquida (2018) found that such analysis is effective in improving performance in education centres. Henceforth, information and analysis could act as driver to enhancing product quality, to improve customer satisfaction and finally to improve business performance. Based on the discussion above, information and analysis is suggested to influence organizational performance. Therefore, the following hypothesis is formulated:

H6: Information and analysis will contribute to organizational performance.

3.3.7 Moderating Effect: Firm Size

In the past studies of TQM, some research have debated that the failure or success of TQM is very much depending on external factors (i.e. firm size, industry type and firm's ownership). Based on the previous studies such as Ahire & Golhar (1996) found that there is moderating effect of external variables such as firm size and industrial type on the

relationship between TQM practices and performance outcome. Jayaram, Ahire, and Dreyfus (2010) also reported that firm size and firm type moderate the effect of TQM on final outcomes. They conclude from their studies that firm size could moderate the associations of TQM practices and organizational performance as smaller companies have better quality management process and more likely to have a teamwork and trusting culture and to be more effective compared to large companies. However, large companies could have used more capital and deemed to be capital inefficient compared to smaller firms in terms of performance in the finding from Hendrick and Singhal (2001) in a study on TQM firms. Sila's (2007) studies revealed TQM could be applied across the board regardless of contextual factor such as firm size and country of origin and scope of operations and that firm size has no impact on TQM practices and outcomes. Furthermore, Ahire and Golhar (1996) in their study concluded that firm size does not affect the performance in TQM implementation. However, Shah and Ward (2003) reported that firm size negatively affected on this relationship in a study on manufacturing plants with lean management after taking into consideration of plant size, plant and unionization status. In another study on the board size and firms performance in Singapore and Malaysia by Mak & Kusnadi (2005); the concluded that the same the size does matter and board size has a inverse relationship with firm's performance. Similarly Ramasamy, Ong & Yeung (2005) conducted a study on oil palm industry in Malaysia concluded that firm size and ownership are important determinants on the financial performance of the oil palm based firms in Malaysia. They further pointed out that larger sized firms have a lower performance due to X-inefficiencies, cost inefficiency as a results of larger firms tend to be more bureaucratic. Based on the above, the following hypothesis is proposed:

H7: Firm size will moderate the effect of TQM practices on organizational performance.

3.3.8 Moderating Effect: Industry Type

Industrial type could be one of the moderating variables on the relationship between TQM practices and organizational performance. Previous research (Jayaram, Ahire, & Dreyfus, 2010; Schmenner, 1986) have debated that the dissimilarities in characteristics between manufacturing and service industry influence the relationship between TQM practices and performance outcomes. For instance, in manufacturing computer hardware, teamwork is of greater significance in the assembly production systems which have a number of stages in production process compares to food and beverage service industry that have a small number of stages (Jayaram, Ahire, & Dreyfus, 2010).

Some academics have found that the impact of TQM principles on outcomes varied across firm types (Flynn, Schroeder, & Sakakibara, 1994). Jayaram, Ahire, and Dreyfus (2010) carried out a study on the differences in total impacts relationships among TQM practices across four contingencies, namely firm size, industrial type, TQM duration and unionization. In the study, data from a sample of 394 factories in the United States revealed that industry type moderated the impact of total effects of TQM implementation and final outcomes. However, Shah and Ward (2003) had found that there is no moderating effect of industry type on the relationships between TQM practices and outcomes. In Malaysia Ng & Jee (2012) in their investigation on influence of TQM, concurrent engineering and knowledge management on manufacturing performance, only concurrent enginerring is found to have significant impact; i.e. TQM and knowledge management are found to be insignificant factors. On the other hand Ramayah, Samat & Lo (2011) carried out research on 101 service firms in Nothern Malaysia concluded that market orientation (customer focus) has a

significant effect on service quality which lead to organizational performance. Due to the many different conclusions we include industry type as one of the moderators for the research proposed. Thus, the following hypothesis is proposed:

H8: Industry type will moderate the effects of TQM practices on organizational performance.

3.3.9 Moderating Effect: Firm's Ownership

On another aspect, firm's ownership effect may moderate the linkage of TQM practices when one were to compare between family owned firms as opposed to non-family owned firms. The performance outcome could have better performance through TQM practices as they may possess more trusting culture, family spirit of coerciveness and to be more committed compared to non-family-business-ownership. Family owned business which has been acknowledged with quite a different set of characteristics as opposed to non-family owned business firms, such the appointment of the CEO or management staff, the culture and leadership, long term oriented goals as opposed to more short term objectives are just a few to mention. It was discussed in the earlier chapter where studies were carried out by Ellington, Jones and Deane (1996) and Callejo (2012), both have found that family owned firms performed better with the adoption of TQM practices. In comparing from the ownership perspective on oil palm firms in Malaysia between privately owned and state owned companies by Ramasamy, Ong & Yeung (2005) they concluded that ownership indeed has an effect on the oil palm firms' performance whereby privately owned firms tend to outperform the owned firms. On a separate study by Tam & Tan in 2007 on Malaysian firms, they have found that firm's ownership does have an influence on the corporate governance and in turn translate into the effect on firm's performance. Based on the summary above, we will verify

whether the total effects of TQM practices on each business performance varies across different contextual factor of firm's ownership and thus following hypothesis is proposed:

H9: Firm's ownership will moderate the effects of TQM practices on organizational performance

3.4 Conclusion

This chapter has presented the hypotheses for the research model in examining the TQM practices and linkages with the organizational performance of family owned enterprise. The discussion included the development of six hypotheses based on the past review of literatures on the six elements of TQM practices: leadership, strategic planning, HRM, process management, customer focus and information and analysis which are perceived to have influence on organizational performance. At the same time, moderating effects were also introduced by firm size, industry type and ownership type of the business which would have on the impact of the TQM practices on organizational performance. The theoretical model is therefore to be tested in the subsequent chapter, whereby the research methodology will be applied to examine the significance of hypotheses in this study.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

This chapter aims to discuss the research methodology in this study which is organized into six sections. The first section focuses a description of the research design. The second section determines how to develop the survey instruments which are broken down into operationalization of survey instruments (i.e. TQM, organizational performance), questionnaire pretesting, pilot study and questionnaire structure. The third section discusses the population. The fourth section describes the data collection procedures. The fifth section focuses on statistical analysis, which comprises of data screening, refinement and validation of instruments and handling missing data in survey. Finally, the last section concludes the summary of this chapter.

4.2 Research Design

Research design reflects priority decisions on different aspects of the research process (Bryman & Bell, 2007). A proper research design will ensure the research is well thought out and planned carefully to meet the research objectives. The importance of research design was opined by Nachmias and Nachmias (2008) that its role is a link in relations on how the research and empirical data are being collected for the purpose of validating the research questions in fulfilling the research objectives. A good research design will provide a suitable framework to collecting and analysing of data in a study (Churchill, 1979). Therefore research design outlines plan to be taken into account so that research answers are being studied to the research questions. As such, the approach of research design is important to

provide the framework for the collection and analysis of data from the samples, methods of study, for examples quantitative or qualitative, method of data analysis such as regression model or structural equation modelling etc. Cooper and Schindler (2003) as cited in p. 146 stated that:

> "*Essentials of research design include that the design is an activity and time-based plan, the design is always based on the research question. The design guides the selection of sources and types of information. The design is a framework for specifying the relationships among the study's variables, and the design outlines procedures for every research activity*".

A fundamental objective to be noted when considering research design is that a research design should incorporate the methods most suited to answering the research questions. According to Bryman (2001), the strength of the research design depends on the survey tools being constructed and the approach of the questions. Aljodea (2012) also commented in his study that "research designs should incorporate methods most appropriate to the questions under investigation" (p. 58).

This study is based on the perspective that the adoption of TQM practices helps to support organizational performance of family owned enterprise and non-gamily owned enterprise in Malaysia. The adoption of quantitative approach in this study is to address the objectives that were set out in the Chapter 1. The objectives are: (i) To determine whether there are any relationship between TQM practices and organizational performance within the Malaysian family owned and non-family owned enterprise. (ii) To determine which TQM practices have the strongest relationships with organizational performance. (iii) To determine whether if there is any difference in the strength of the relationship between TQM practices

and organizational performance by firm size between small & medium sized firms and large firms. (iv) To determine whether if there is any difference in the strength of the relationship between TQM practices and organizational performance by firm type between manufacturing firms and service firms. (v) To determine whether if there is any difference in the strength of the relationship between TQM practices and organizational performance by firm's ownership between the family-owned firms and non-family owned firms. In this study, the research design is using quantitative method, whereby the collection of primary information via self-administered questionnaires is employed. A quality consultant firm was tasked to collect the survey data through their customer database. Each sampling unit consists of one organization. The justification for using the quality consultant to collect the survey data from the self-administered questionnaire from the consulting firm's database is justified in Section 4.5. PLS-SEM was used to analyse the relationships between variables to investigate the degree to which the TQM practices influence organizational performance in Malaysian family owned and non-family owned enterprise. The target samples were carried out to firms with ISO certification or any quality certificates such as HACCP or they have set out to apply for the quality certifications; reason being these firms are either confirmed or seen to have adopted quality management practices.

4.3 Development of Research Instruments

The research instruments were developed through three stages. Firstly, it is vital if the research questions are clear and easily understood (Kumar, 2005). Secondly, the questionnaire should not be too lengthy to avoid respondents become fatigue (Lindell & Whitney, 2001). Thirdly, an appropriate Likert scale with sufficient number of scale point should be identified for measuring every item to void over-chosen the neutral category (middle point) by the respondents (Cox, 1980). In this research Likert scale of five (5) is adopted as it is sufficient

to differentiate the intensity of each of the perception for the respondents to make their choices in answering the questionnaire.

4.3.1 Operationalization of TQM Instruments

The instrument of TQM in this study was adopted from the scale developed by Zhang, Waszink, and Wijngaard (2000) and Teh (2010) (see Table 4.1). Six practices of TQM, i.e. leadership, strategic planning, human resource management, process management, customer focus and information and analysis were selected for the scales based on three rationales. These six practices are adopted based on three reasons. Firstly, these scales are in line with the practices proposed by most of previous TQM scholars and practitioners which are incorporated with the world-wide recognition quality awards (Hoang, Igel, & Laosirihongthong, 2006; Prajogo & Sohal, 2003). Secondly, these scales cover the concept of hard and soft components of TQM (Dale, 1999; Prajogo & Sohal, 2003). Thirdly, these scales are in line with MBNQA's criteria that have been validated considerably in sensitivity and validity in other studies (Samson & Terziovski, 1999; Sohail & Teo, 2003). The six practices are then translated into the 6 constructs in the data collection and data analysis. As tabulated in Table 4.1, each measurement of the constructs consists of five questions to make up 30 questions were weighted with five-point Likert scale in which "strongly disagree" coded 1 and "strongly agree" coded 5.

Table 4.1: Operationalization of TQM

Construct Items		Source	Note
Leadership (LD)			
LD1	"Actively participates in quality management and improvement process".	Zhang, Waszink, and Wijngaard (2000, p.752)	Adopted
LD2	"Learns quality-related concepts and skills".	Zhang, Waszink, and Wijngaard (2000, p.752)	Adopted
LD3	"Strongly encourages employee involvement in quality management and improvement activities".	Zhang, Waszink, and Wijngaard (2000, p.752)	Adopted
LD4	"Empowers employees to solve quality problems".	Zhang, Waszink, and Wijngaard (2000, p.752)	Adopted
LD5	"Arranges adequate resources for employee education and training".	Zhang, Waszink, and Wijngaard (2000, p.752)	Adopted
Strategic Planning (SP)			
SP1	"Has a mission statement which has been communicated throughout the company and is supported by our employees".	Teh (2010, p. 86)	Adopted
SP2	"Has a comprehensive and structured planning process which regularly sets and reviews short and long-term goals".	Teh (2010, p. 86)	Adopted
SP3	Has an annual budget and involved all in the senior management.		
SP4	"Believes that strategic plans are linked to quality values".	Teh (2010, p. 86)	Adopted
SP5	"Practices continuous quality improvement in planning process".	Teh (2010, p. 86)	Adapted
Human Resource Management (HR)			
HR1	"Has a company-wide training and development process for all our employees".	Teh (2010, p. 87)	Adopted
HR2	"Regularly measure employee satisfaction formally".	Teh (2010, p. 87)	Adapted
HR3	"Maintains a work environment that contributes to the health, safety and well-being of all employees".	Teh (2010, p. 87)	Adopted
HR4	"Has compensations system that encourages team and individual contributions".	Teh (2010, p. 87)	Adapted
HR5	"Has reward and recognition system that is based on task accomplishments and on work quality".	Teh (2010, p. 87)	Adapted
Process Management (PM)			
PM1	"Employees work as team and guided by clear goals".	Teh (2010, p. 88)	Adapted
PM2	"Employees are encouraged to develop new and innovative ways for better performance".	Teh (2010, p. 88)	Adopted
PM3	"Has at least one product/service improvement in the past one year".	Teh (2010, p. 88)	Adapted
PM4	"Has the ability to monitor all production/service process to improve quality".	Teh (2010, p. 88)	Adapted
PM5	"Uses statistical process control to monitor production/service processes".	Teh (2010, p. 88)	Adopted

Table 4.1: Operationalization of TQM *(continued)*

Construct Items		Source	Note
Customer Focus (CF)			
CF1	"Collects extensive complaint information from customers".	Teh (2010, p. 87)	Adopted
CF2	"Treats quality-related customer complaints with top priority".	Teh (2010, p. 87)	Adopted
CF3	"Conducts a customer satisfaction survey every year".	Teh (2010, p. 87)	Adopted
CF4	"Always conducts market research in order to collect suggestions for improving our products".	Teh (2010, p. 87)	Adopted
CF5	"Provides warranty on our products sold".	Teh (2010, p. 87)	Adapted
Information and Analysis (IA)			
IA1	"Regularly reviews on organization's quality performance".	Teh (2010, p. 88)	Adopted
IA2	"Analyzes all work processes and systems".	Teh (2010, p. 88)	Adopted
IA3	"Has the key performance figures for analysis and decision making".	Teh (2010, p. 88)	Adapted
IA4	"Conducts benchmarking on relative cost position".	Teh (2010, p. 88)	Adapted
IA5	"Benchmarks against other firms' product quality and procedures".	Teh (2010, p. 88)	Adapted

4.3.2 Operationalization of Organizational Performance

A review of organizational performance literature was examined to measure the scales used in past survey studies. As illustrated in Table 4.2, a 20-item construct was developed based on the instrument of previous studies by Wright and Cropanzano (1998), Zhang (2000a) and Zhang, Waszink, and Wijngaard (2000) to examine organizational performance which comprises of (i) employee satisfaction, (ii) product quality, (iii) customer satisfaction, all of these constructs were measured using five-response rate with "1" being rated as strongly disagree while "5" represents the strongly agree and (iv) strategic business performance.

Table 4.2: Operationalization of Organizational Performance

Construct Items		Source	Note
Employee Satisfaction (ES)			
ES1	"All in all, how satisfied are you with the work itself of your job?"	Wright and Cropanzano (1998, p. 488)	Adopted
ES2	"All in all, how satisfied are you with your co-workers?"	Wright and Cropanzano (1998, p. 488)	Adopted
ES3	"All in all, how satisfied are you with the supervision?"	Wright and Cropanzano (1998, p. 488)	Adopted
ES4	"All in all, how satisfied are you with the promotional opportunities?"	Wright and Cropanzano (1998, p. 488)	Adopted
ES5	"All in all, how satisfied are you with the compensation package?"	Wright and Cropanzano (1998, p. 488)	Adapted

Table 4.2: Operationalization of Organizational Performance *(continued)*

Construct Items	Source	Note
Customer Satisfaction (CS)		
CS1 The customers are satisfied with our product quality.	Zhang, Waszink, and Wijngaard (2000, p.755)	Adapted
CS2 The customers are satisfied with our service quality.		
CS3 We have quite a number of loyal and repeat customers.		
CS4 Customer satisfaction is an everyday priority in my company.		
CS5 We strive to satisfy our customers.		
Product Quality (PQ)		
PQ1 "The performance of your company's primary products/services".	Zhang, Waszink, and Wijngaard (2000, p.755)	Adapted
PQ2 "The reliability of your company's primary products/services".	Zhang, Waszink, and Wijngaard (2000, p.755)	Adapted
PQ3 "The durability of your company's primary products/services".	Zhang, Waszink, and Wijngaard, p.755)	Adapted
PQ4 "The defect rates of your company's primary products/services".	Zhang, Waszink, and Wijngaard (2000, p.755)	Adapted
PQ5 "The failure costs as a percentage of annual output value".	Zhang, Waszink, and Wijngaard (2000, p.755)	Adapted
Strategic Business Performance (SBP)		
SBP1 "What was the approximate annual sales achieved by your firm in the last financial year?" 1. Less than RM1.0 million 2. RM1.0 million - RM4.99 million 3. RM5.0 million - RM9.99 million 4. RM10.0 million - RM24.99 million 5. RM25.0 million or more	Zhang (2000a, p. 210)	Adapted
SBP2 "Compared with the previous year, do you think your current annual sales": 1. Decreased a great deal 2. Decreased slightly 3. Stayed almost the same 4. Increased slightly 5. Increased a great deal	Zhang (2000a, p. 210)	Adapted
SBP3 "Do you think your firm is": 1. Losing money badly 2. Losing money slightly 3. Breakeven 4. Making some profits 5. Very profitable	Zhang (2000a, p. 210)	Adapted

Table 4.2: Operationalization of Organizational Performance *(continued)*

Construct Items		Source	Note
SBP4	"Compared with the firm that has the biggest local market share (regarded as 100%) within the same industry in Malaysia, what is the relative local market share of your products/services (please estimate your firm's output divided by the output of the biggest firm in the same sector in Malaysia)?" 1. Less than 20% 2. 20% - 40% 3. 41% - 60% 4. 61% - 80% 5. More than 80%	Zhang (2000a, p. 211)	Adapted
SBP5	"Approximately what percentage of total annual sales by value is exported?" 1. 0% 2. 1% - 8% 3. 9% - 15% 4. 16% - 35% 5. More than 35%	Zhang (2000a, p. 211)	Adapted

Note: Adopted means that this item was adopted from the source.
Adapted means that this item was adapted from the source.

4.3.3 Questionnaire Pretesting

Prior to the distribution of the survey, a trial test known as pretesting on questionnaire was carried out on ten industry practitioners. Pretesting is crucial; one reason is that comments on examination from professional or experts can be used to determine the relevancy of the research question (Bradburn, Sudman, & Wansink, 2004) and to clear up any ambiguities with the questions so that clear and understandable instructions can be reachable to the respondents or interviewers (Bryman, 2001). The pre-test is also useful in determining the approximate time required for respondents to complete the questionnaire (Bryman, 2001). To reach such a goal, the pre-test was carried out with the draft questionnaire in this study was reviewed by industry practitioners to provide feedback and some alterations were made to comprehend, to clarify, to suggest, to revise and to add additional items on questionnaire. The input was valuable in modifying the questionnaires to improve on the communication aspect to make the final edition of questionnaire easier to comprehend so that the respondents will answer well to the questionnaire since it is self-administer.

4.3.4 Pilot Study

A pilot study is carried out from filling the questionnaire by a select group of respondents until the data input and analysis. This rehearsal in the pilot study is necessary before undertaking main survey, the purpose of pilot test is to collect feedback for questionnaire refinement of validity, reliability and operationalization feasibility so that questionnaire is truly being responded (Xie, 2011). After the questionnaire pretesting, a pilot study was carried out in 30 ISO certified firms whereby participations were requested to assess the survey questionnaires to testing more precise hypotheses, to assess for content validity, relevancy and clarity in the study. The pilot study participants were drawn from the same database so that in the event the research instrument and research design were tested valid and at the same time questionnaire need not to be modified, the pilot study sample could be also included into the main sample analysed (Thabane et al. 2010).

4.3.5 Questionnaire Structure

An introductory letter with a brief objective of the study and instructions for respondents to complete the survey questionnaire was attached before begin the data collection for the study (Appendix III). The survey instrument in this study was organized into four sections. Section A consists of six questions relate to demographic profile such as gender, age, highest education completed, length of time with organization, job position and length of time with current job.

In Section B, there are four questions about details of company to be answered by the respondent. The first question relates to number of employees, it has been categorized into three ranges based on the number of employees: (i) less than 50, (ii) between 51 and 200, and (iii) above 200. The second question was asked about its organization's product or services, which is manufacturing (e.g. electrical, electronics, etc.), services (e.g. education, finance,

logistics restaurants, construction, transport, property development, etc.) or other types. The third question is to identify whether the respondent companies have implemented ISO certification, planning to ISO certification, other quality certifications or non-certified by any organizations. Lastly, question four consists of two sub-sections. The first sub-section is to determine whether the respondent company is managed or controlled by Malaysian or foreign owned. The second sub-section requires respondent to identify family owned and non-family owned company. Besides, there was an additional question to be responded if its company was a family owned as either managed by owner(s) himself/herself or managed by owner's children and/or family members.

Section C, consists of 30 sub-questions where the respondents were asked to rate the degree of six TQM practices applied in the company. Each of these TQM elements, i.e. leadership, strategic planning, customer focus, human resource focus, process management and information and analysis with five items respectively were measured by using a five-point Likert scale with five categories where (1) = strongly disagree, (2) = disagree, (3) = neutral, (4) = agree and (5) = strongly agree.. Likert scale of 5 providing odd number scaling giving the choice for the respondents to have a neutral response where in this study 'forced choice' of 'agree' or 'disagree' is not necessary in the case if even number of scale is adopted. Even though Finstad (2010) suggested that Likert scale of 7 would have reduced the problem of respondent tendency to interpolate compare to Likert scale of 5; Joshi, Kale, Chandel & Pal (2015) opined that suitability of whether scale of 5 or 7 depends largely on the objectives of the study where the construct are more ordinal or interval in nature. Constructs that are more ordinal in nature, clustering effect are sufficiently reflected in the Likert scale of 5.

Lastly, four constructs with 16 sub-questions from Section D which the respondents were asked to assess their opinion regarding the overall business performance. There were four dimensions of overall business performance used in this study: employee satisfaction

(five items), product quality (five items), customer satisfaction (five items) and strategic business performance (five items). The rating for questions one to three was using five-point Likert scale where employee satisfaction was given as (1) "extremely unsatisfied" to (5) "extremely satisfied"; product quality was rated as (1) "worst in the industry" to (5) "best in the industry" and customer satisfaction was weighted as (1) "strongly disagree" to (5) "strongly agree". 5 point Likert scale is chosen for measuring every item to void over stretching the range and providing a bigger choice of the neutral category (middle point) by the respondents (Cox, 1980) when 7 or 10 point Likert scales are used. Lastly, respondents were asked in the last question to state the degree of strategic business performance. The survey questionnaire is shown in Appendix III.

4.4 Population Study

The Companies Commission of Malaysia statistics was used to estimate the number of businesses and companies in Malaysia. In Malaysia, the total number of companies or businesses that were registered in 2010 was 927,045. Of the total, 4,370 are foreign owned (Companies Commission of Malaysia, 2014). Admittedly, of the almost one million companies or businesses registered in Malaysia, the bulk of it are not active or rather small in scale as businesses include sole proprietor and partnership. Even registered limited liability company in Malaysia could be an empty shelf or with minimum paid up of RM2.00 only. On the contrary, the most represented trade group from Malaysia, Federation of Manufacturers Malaysia (FMM) boasts only more than 2,000 members. The list of FMM members includes both manufacturing and services sectors (FMM, 2014). FMM is an active group of trade association and the members hold regular dialogue with the government to discuss industrial issues. For the third gauge of business numbers in Malaysia, the number of companies listed at the Bursa of Malaysia was observed, in which 1,003 companies were included in the main

board and another 157 companies were listed in the ACE sector (for smaller and emerging companies) which made the total of 1,160 companies listed at the Bursa Malaysia (Bursa Malaysia, 2014). On the other hand the number of ISO firms in Malaysia, according to a quality consultancy firm, Centrex Training and Consultancy, there were 11,487 firms with such certification in Malaysia in 2014 (Centrex, 2018). This compares to close to a million of firms registered in Malaysia (both dormant and active) and 1003 firms listed in the Bursa Malaysia as discussed above showing the vast spectrum of number of firms in Malaysia. As illustrated above, it could be seen that there is a huge range of the business entity population being reported or counted. The true population of company practicing TQM is not possible to be obtained therefore pure sense of random sampling from the population is not attainable. The study discussed in length of the number business entity in Malaysia from various sectors concluded that there is widespread of entity which could be drawn from and then filtered with companies practicing TQM. Therefore a quality assurance consulting firm was engaged to gather the questionnaire survey from their available database as the database from the firm is representative of the direct and efficient route to this filtering process. As the data were collected from firms with quality certification program or aiming to have one soon, the firms are expected to be of certain age and in the mature or approaching mature stage. The sampled firms will be fairly consistent in terms of maturity. It was also reported that the database represents the broad spectrum of the Malaysian businesses as about 70% of database comes from the Greater Kuala Lumpur (Klang Valley) region and the rest are from other areas of Malaysia.

4.5 Data Collection Procedure

A consultant specialised in providing services to ensure quality management certifications for its clients in Malaysia was engaged to gather the data for the following reasons:

(i) The consultant has a ready data base from the clients that it has built up over 10 years in the profession,

(ii) The client base consists of those who have already obtained quality management certification such as ISO, HACCP etc. Firms with quality certifications or intending quality certifications are viewed to have emphasis of quality concept and implementation in their management (Mo & Chan, 1997; Taylor, 1995).

(iii) The database also includes clients whose companies wish to improve their quality management as well as making an effort to obtain quality certification.

(iv) The client base consists of both family owned and non-family owned firms (which is reflected in the demographic data in the subsequent chapter).

(v) The client database are from all areas of Peninsular Malaysia but about 70% of them are based in the Klang Valley; which reflects the main economic activities of Malaysia that are centered in Greater Kuala Lumpur.

To begin with the data collection process, a briefing was carried out to the staff of the consultant on the questionnaires design and purpose. Doubts were clarified on answering and filling in the questionnaire with the staff in charge of the data collection. A total of three hundred questionnaires were distributed to the clients in the database from the random selection out of the total of approximately 450 clients in the total database. The 300 self-administered questionnaires were posted out to the selected clients and telephone calls were made to follow-up by the staff two weeks later. The clients were encouraged to complete the questionnaires and some assistance was rendered to the respondents to answer the

questionnaires but not providing lead to the questions. Only explain to any query if the respondents have missed out or unable to answer the questionnaire fully. Eventually a total of 186 were found to be usable and complete with the success rate of 62%.

This method of data collection was adopted through a consultant as it is believed that it is not practical to establish the true population of enterprise and businesses due to the complication of establishing the true and meaningful population list as explained in Section 4.4 above. Secondly, the purpose of this study is to investigate TQM practices and its influence on family owned firms and non-family owned firms. The database does provide sufficient samples to analyse the comparison between firm size, different sectors and different ownerships. It is suffice to say that based on Hair, Anderson, Tatham, and Black (2006) a minimum ratio of 15:1 will be sufficient to provide representation of the subject study for every variable involved. In this regards, the spread of sample from various location and demographic profile is sufficiently providing sound data for the study (Please see Table 5.1 & Table 5.2 in the subsequent chapter).

4.5.1 Sampling Procedure

Sampling is a procedure to select the representation of a larger group, which serves as a foundation to predict or estimate the popularity of unknown information, situation or result of the entire group (Kumar, 2005). Based on the sampling, an assumption on the finding of research objective can be drawn about the entire body of population (Saunders, Lewis, & Thornhill, 2007). In accordance to Pallant (2005), sample size is vital as an inappropriate number of samples are not likely to draw an inference to the existing population. In this regard, assumptions on sample size can be made to three categories: (i) less than 100 sample size is deemed small, (ii) sample size ranges from 100 to 200 is considered medium, and (iii) sample size greater than 200 is deemed to be large (Kline, 2005). According to the Roscoe's

(1975) rules of thumb, sample size between 30 and 500 is viewed satisfactory for most researches. Additionally, Hair, Anderson, Tatham, and Black (1998) suggested that the desired ratio for each independent variable is 15:1 or 20:1. In this research study, the Smart-PLS software is used to analyse the data. Smart-PLS is a software that able to analyse data even if with a small sample size.

4.6 Statistical Analysis

PLS-SEM method was used to test the proposed research framework illustrated in Figure 3.1. A two-stage PLS-SEM process in which a measurement model and structure model was used in this study (Hair, Black, Babin, Anderson, & Tatham, 2005; Lee, Ooi, Tan, & Chong, 2010; Lin & Lee, 2004; 2005), where the bootstrapping approach was applied with 5000 sub-samples to obtain t-values (Okazaki, Castañeda, Sanz-Blas, & Henseler, 2012). According to Chin, Marcolin, and Newsted (2003), large sample sizes, intervals scales and it is worth mentioning that multivariate normal distribution are not required in a PLS-SEM analysis, therefore strengthening the superiority of PLS method as compared to other analysis techniques. Notably known for its ability to test smaller sample size, PLS-SEM can be carried out to be a better analysis selection as compared to covariance-based Structural Equation Modeling method (Chin, Marcolin, & Newsted, 2003).

4.6.1 Data Screening

Data screening is crucial for the detection of outliners (Teh, 2010). The commonly used methods used are univariate, bivariate and multivariate were employed in the data screening to identify outliners (Hair, Anderson, Tatham, & Black, 1998). As posited by Kline (2005), a univariate outliner is performed to score a single individual, while a multivariate is performed

to analyse two or above variables. It is recommended that squared Mahalanobis distance (D2) is used to compute to detect of univariate and multivariate outliers, outliners with D2 / independent variables below 3 for each case were removed from the preliminary univariate and multivariate statistical analyses (Hair, Black, Babin, Anderson, & Tatham, 2005).

4.6.2 Refinement and Validation of Instruments

There needs to be a comprehensive measurement analysis on survey instrument to assess the reliability and validity of the scales used in this study. The testing of reliability and validity are discussed in the following sub-sections.

4.6.2.1 Reliability

Zhang, Waszink, and Wijngaard (2000) defined reliability as the degree to which the similar results can be achieved in repeated measurements in which an experiment or test is tested is more than once. Reliability concerns the ability to which a measurement is free of random and unstable error (Cooper & Schindler, 1998). As stated by Cooper and Schindler (2003), reliability relates consistent in measurement, experiment or observation among others, whereby they stated in p. 231 that "There must be an evidence of consistency to show the accuracy and precision of a measurement procedure or measurement instrument". In this study, unidimensionality analysis was first examined prior to testing the reliability of a scale so that the artificial correlations among the constructs can be eliminated. Besides, reliability analysis was also adopted in this study to check for reliability.

4.6.2.1.1 Reliability Analysis

Reliability analysis relates to the ability whether the multiple indicators can be shared by using Cronbach's alpha to measure the construct (Hair, Anderson, Tatham, & Black, 1992). In this study, Cronbach's alpha was used to test reliability for determining internal consistency based on two reasons. Firstly, Cronbach's alpha was carried out to assess internal consistency and reliability measurements across time and various instrument items (Sekaran, 2003). Secondly, Cronbach's alpha has received wide recognition as being the accepted and common method to test the reliability of multi-items scale (Cooper & Schindler, 2003). According to Pallant (2007), the value of Cronbach's alpha lies from 0 to 1 where the higher value is considered to have better reliability. As proposed by Hair, Anderson, Tatham, & Black (1998), the commonly accepted value of Cronbach's alpha is at least 0.60.

4.6.2.2 Validity

Validity is the level to which the research measurement arrives the real meaning of the study's concept that is intended to measure (Cooper & Schindler, 1998; Zhang, Waszink, & Wijngaard, 2000). It refers to the investigation to what extent the differences in the measurement tool from the actual differences between respondents. In view of an instrument is considered as not valid without an examination on what it is intended to measure. Therefore, validity is important in this study as to which a test captures what is the intended information via three common used methods as follows: content validity, convergent validity and discriminant validity.

4.6.2.2.1 Content Validity

According to Rungtusanatham (1998, p. 12), content validity is defined as "the degree to which the measurement instrument spans the domain of the construct's theoretical definition; it is the extent to which a measurement instrument captures the different facets of a construct".

It is essential to conduct content validity assessment after the items are generated (Hinkin, 1998). He asserted that there is no best technique for content validity assessment and "content adequacy" can only be obtained from the available approaches. As stated by Polit and Beck (2006), content validity is judgmental evaluation by a researcher to which the content relevance of a measurement instrument. Nevertheless, content validity can be ensured if the constructs items are incorporated based on evaluations from practitioners and a thorough review of related literature by scholars (Saraph, Benson, & Schroeder, 1989; Hair, Black, Babin, & Anderson, 2010; Zhang, 2000a). It is assumed that content validity is accomplished if all important aspects have been included in the construct items that are being measured.

4.6.2.2.2 Convergent Validity

Convergent validity is pertaining to "the degree to which multiple attempts to measure the same concept is in agreement" (Lin & Lee, 2005, p. 179), factor loading within each construct was proposed by Anderson and Gerbing (1988) for the testing of convergent validity. Convergent validity in this study employed confirmation factor analysis, whereby factor loadings were being examined on the latent construct.

4.6.2.2.3 Discriminant Validity

Discriminant validity refers to "the degree to which measures of different latent variables are unique. That is, in order for a measure to be valid, the variance in the measure should reflect only the variance attributable to its intended latent variable and not to other latent variables" (O'Leary-Kelly & Vokurka, 1998, p. 399). According to Hair, Black, Babin, and Anderson (2010), discriminant validity of each construct was tested via correlation analysis.

4.6.2.2.4 Multicollinearity

Multicollinearity can pose a problem when a correlation matrix between each pair of variables exceeds 0.90 (Tabachnick & Fidell, 2001). To reduce multicollinearity, data were mean-centered before creating inter-item correlation (Kutner, Nachtsheim, Neter, & Li, 2005). Hence, variance inflation factor (VIF) was suggested to examine multicollinearity in this study. To check for multicollinearity, the value for the VIF is to be below the acceptable threshold of 10 (Hair, Anderson, Tatham, & Black, 1998).

4.6.3 Handling Missing Data in Survey

It is anticipated that missing data can pose an issue when the research data has omitted certain observations in a sample collected (Hair, Black, Babin, & Anderson, 2010). According to Tsikriktsis (2005), missing data of greater than 10% in conducting analysis can lead to a serious issue on the possibility of changing the parameter estimation. Scholars like Babbie (2010) and Hair, Black, Babin, and Anderson (2010) have suggested within acceptable numbers to missing data effect can be mitigated by excluding cases of missing data on any variables from the particular analysis. In this study, the sample size used for analysis is 186 after excluded the cases of missing data that is less than 10% of the plant are missing.

4.7 Conclusion

This chapter has presented comprehensively the adoption of research methodology for collection and analyzing of the necessary data. Upon the completion of validity and reliability analysis, the findings of the survey will then be tested and discussed in the next chapter. Figure 4.1 is the research methodology flow chart that summarizes all sections covered in this chapter.

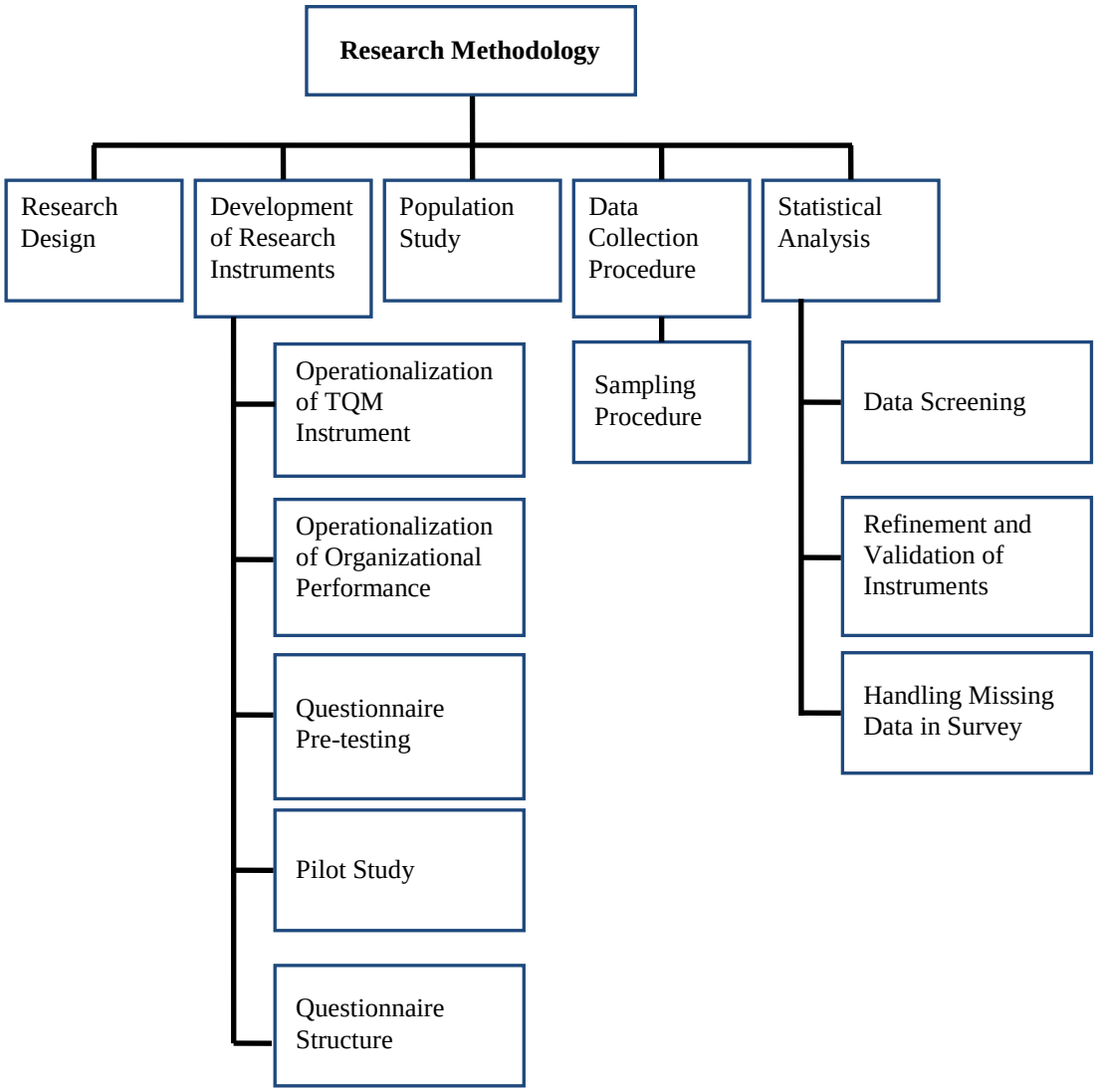

Figure 4.1: Research Methodology Flow Chart

CHAPTER 5

RESULTS AND DISCUSSION

5.1 Introduction

This chapter presents the findings of the analysis for assessing the theoretical model hypothesized in this research. This chapter is divided into 9 sections. Section 5.2 describes the demographic profile and demographic characteristics of the sample respondents. Section 5.3 presents the characteristics of company's profile. Section 5.4 provides the descriptive analysis of TQM constructs. The testing of common method bias was presented in Section 5.5. Section 5.6 presents PLS-SEM analysis. Section 5.7 describes the measurement model including the test for reliability, convergent and discriminant validity. Section 5.8 presents the analysis of structural model including the test for construct collinearity, and path analysis results. Finally, summary of the chapter is provided in section 5.9.

5.2 Characteristics of Demographic Profile

The profile of the 186 valid respondents is presented in Table 5.1. These 186 valid samples included the 30 samples from the pilot study as they are found to be valid and drawn from the same database and there was no change in the research design of questionnaire survey form (Thabane et al. 2010). Fifty three percent of the respondents are male and female respondents made up the other 47%. As for the age of respondents, 4% are below 26 years old, 13% are between the age of 26-30, 21% are between the age of 31-35; 39% are between the age of 36-40 and the remaining of 23% are above 40 years of age. In terms of the respondent education background, 27% of the respondents have high school qualification, 30% have achieved diploma level; 37% are with degree or professional qualifications and another 7% are postgraduate degree holders. In addition, 7% of the respondents worked less than 2 years

in their existing companies, 32% have been working between 2-5 years and the balance of 61% have been working in their respective companies for more than 5 years. For the positions held by the respondents in their respective companies, 15% are non-executives, 38% are executives; and 25% are managers or head of department and the remaining of 23% are either in the position of general managers, chief executive officers or director. From the demographic profile, the samples are comprehensive and encompassed a broad spectrum of representatives to reflect on the perception of TQM and organization performance.

Table 5.1: Profile of Target Respondents

Demographic Variables	Frequency	Percentage
Gender		
Male	99	53
Female	87	47
Age		
Below 26	8	4
26-30	24	13
31 -35	39	21
36-40	72	39
Above 40	43	23
Highest Education Completed		
High School and below	50	27
Diploma	55	30
Bachelor degree/Professional qualification	69	37
Postgraduate degree	12	6
Length of Time		
Less than 2 year	13	7
2-5 years	59	32
6 – 10 years	69	37
11 – 20 years	37	20
Above 20	8	4
Job position		
Non-executive	27	15
Executive	70	38
Manager/HOD	46	25
GM/Director/CEO	43	23

5.3 Characteristics of Company's Profile

Table 5.2 presents the profile of the companies being sampled. Out of 186 respondents, 48% are from the manufacturing sector; 52% are from the service sector. As for the number of employees, a total of 41% of the respondents have less than 50 employees in their companies; 42% having between 51-200 employees and the remaining of 17% have more than 200 employees. In terms of the status of the organization, 84% are ISO certified firms; 15% of the companies are planning to have ISO certification and 1% of the companies have obtained other quality certifications. From the perspective of ownership, 46% or 86 frequency are family owned company and the balance of 54% or 100 frequency are companies of non-family owned. The frequency of 86 to 100 sample size for each of the sector provides sufficient size for the analysis of sub-sectors and comparison as explained earlier in Section 2.8.

Table 5.2: Profile of Organizations

Demographic Variables	Frequency	Percentage
Category of Organizations		
Manufacturing	90	48
Service	96	52
Number of employees		
Less than 50	77	41
51-200	78	42
Above 200	31	17
Status of organization		
ISO certified (i.e. ISO 9000)	157	84
Planning to ISO Certification	28	15
Other quality certification	1	1
Ownership		
Family owned – managed by owners	86	46
Non-family owned	100	54

5.4 Descriptive Analysis of the Constructs

The minimum, maximum, average and standard deviation score of each TQM construct are listed in Table 5.3. The minimum score is reported on HRM where 2.0 was recorded. The maximum score of 5 was recorded for all the six constructs. The mean results indicate all the six TQM practices adopted are suitable to be the constructs for TQM as reported by the respondents from the organizations understudied. According to the mean score value, the level of adoption of each TQM practices is considered medium to high level in TQM practices as all the mean scores are above the midpoint of 2.50 with the minimum score of 3.6895 from *process management*. The highest mean score recorded was 3.8136 from *customer focus*. In terms of standard deviation, all the six practices reported in the range of 0.45 to 0.54. This indicates that all the means are not scattered widely in a big range; thus most respondents do agree with the similar perceptions.

Table 5.3: Descriptive Statistics of TQM Constructs (n=186)

Constructs	Minimum	Maximum	Mean	Standard Deviation
TQM				
Customer Focus	2.33	5.00	3.8136	0.53460
Human Resource Management	2.00	5.00	3.7323	0.52806
Information Analysis	2.33	5.00	3.7939	0.51982
Leadership	2.60	5.00	3.7484	0.45265
Process management	2.25	5.00	3.6895	0.56416
Strategic Planning	2.50	5.00	3.7527	0.54462

5.5 Common Method Variance

Harman's single factor analysis was performed to test whether common method variance poses issues in study due to the reason responses were collected through self-administered questionnaire based on the single survey approach. According to Delerue and Lejeune (2010), the total variance explained for one common factor should be less than 50% so that the common method variance problem does not exist. Based on the Harman's single

factor test using the principal exist factoring accounted 31.8% which confirmed that the common method variance is not a major issue in this study.

5.6 Partial Least Squares Structural Equation Modeling Analysis

In this study, the data analysis employed a two-stage analysis as recommended by Anderson and Gerbing (1988). The first stage involves the test of the measurement model. The measurement model establishes if the measures applied were reliable and if the discriminant validity and convergent validity were satisfactory (Scott & Walczak, 2009). The second stage involves the analysis of structural relationships among the latent variables. The main objective of the two-step procedures is to establish the reliability and validity of the measures before examining the structural model (Lin, Hsu, Cheng, & Chiu, 2012). SmartPLS 2.0.M3 was applied in this research because it allows latent variables to be modelled as reflective or formative indicators.

PLS-SEM method is suitable because of its capability for exploratory studies in the initial stages of research when "focus lies on saturated, prediction-oriented models" (Okazaki, Castañeda, Sanz-Blas, & Henseler, 2012, p. 6) unlike covariance-based SEM using AMOS, LISREL and other similar software, in which PLS-SEM does not require assumptions of a normal distribution of the data (Scott & Walczak, 2009). It is also widely applied because of its capability to model latent constructs with small sized samples (Puschel & Mazzon, 2010). For the above mentioned reasons, we opted for the use of PLS-SEM rather than covariance-based SEM.

5.7 The Measurement Model

The dependent variable, organizational performance was modeled as a second-order construct by using repeated-indicators method as suggested by Chin, Marcolin, and Newsted

(2003) and Ringle, Wende, and Will (2005). The rationale for operationalizing organizational performance as a formative second-order constructs is based on three main reasons (Lin, Hsu, Cheng, & Chiu, 2012):

(1) "Its underlying dimensions are indicator variables that form or cause the creation or change in it (latent variables)",
(2) "Its underlying dimensions are not highly correlated" and
(3) "Its underlying dimensions are not interchangeable"

In this method, a second-order construct is directly measured by observing variables for first-order constructs. This study examines the level of significance of indicators and path coefficients using the bootstrapping with 5000 sub-samples to obtain inference statistics (Okazaki, Castañeda, Sanz-Blas, & Henseler, 2012). Before we analyze the structural model (path analysis), the robustness of the measurement model was assessed on the criteria of convergent validity, reliability and discriminant validity. Validity and reliability tests were carried out for the six constructs employed in this study following the method used in the studies of Samson and Terziovski (1999) and Prajogo (2007). The six factors of TQM and the four dimensions of organizational performance were subjected to convergent validity, reliability and discriminant validity analyses which we described in the following sections.

5.7.1 Convergent Validity

According to Tan, Ooi, Chong, and Hew (2014), convergent validity refers "to the capability of a construct to yield the same results even though different approaches are engaged". Furthermore, Fornell and Larcker (1981) as cited in Leong, Hew, Tan, and Ooi (2013) stated convergent validity is established if (a) "all factor loadings are greater than 0.50;

all Composite Reliability (CR) should exceed 0.70; and (c) the Average Variance Extracted (AVE) should exceed 0.50".

During the validation process, several items with low factor loadings of less than 0.5 on both the TQM practices and Organizational Performance were deleted. They were the fifth item (SP5) of strategic planning, the fourth (CF4) and fifth (CF5) item of customer focus, the fourth (IA4) and fifth (IA5) item of information analysis and the second (SBP2) and third (SBP3) items of strategic business performance.

The AVEs of TQM practices are shown in Table 5.4, in which leadership = 0.6067; strategic planning = 0.7394; customer focus = 0.8106; process management = 0.6718; information and analysis = 0.8382 and human resource management = 0.6280. As a rule of thumb, the minimum suggested value stated by Kline (2005) should be 0.50. The above-mentioned AVEs reported met the minimum proposed requirement suggested and thus the convergent validity is established.

All of the items for loadings as presented in Table 5.4 also reported values were above 0.60 (Hatcher, 1994) on their respective constructs and this imply that 60% of the variance of the indicators have been explained for. Therefore, it can be assumed that the convergent validity has been achieved.

5.7.2 Reliability Analysis

Reliability was tested using the Composite Reliability (CR) values. The CR was computed based on the "formula of (Square of the summation of the factor loadings)/{(Square of the summation of the factor loadings + (summation of error variances)''}(Chau & Hu, 2001, p. 709). Table 5.4 displays that all of the CR values were above 0.70 (i.e. leadership = 0.8841; strategic planning = 0.9189; customer focus = 0.9277; human resource management = 0.8931; information analysis = 0.9395; process management = 0.8908; customer satisfaction

= 0.9080; employee satisfaction = 0.9131; product quality = 0.9276 and strategic business performance = 0.8626) fulfilling the commonly adequate level (Molina, Montes, & Ruiz-Moreno, 2007).

To ensure internal consistency, recommended value for Cronbach's alpha should be larger than 0.60 (Nunnally, 1978). In Table 5.4, the Cronbach's alpha values presented for all factors are greater than 0.60, namely leadership = 0.8447; strategic planning = 0.8818; customer focus = 0.8829; human resource management = 0.8556; information analysis = 0.9035; process management = 0.8398; customer satisfaction = 0.8733; employee satisfaction = 0.8807; product quality = 0.9015 and strategic business performance = 0.8818. Since the results reported for all latent constructs are greater than 0.70 and therefore we can confirm that the appropriate measurement is established.

Table 5.4: Measurement Model Testing Results

Constructs/Items	Scale Type	Loadings	Average Variance Extracted	Composite Reliability	Cronbach's Alpha	T-Statistics
First Order Factors						
Leadership (LD)	Reflective		0.6067	0.8841	0.8447	
LD1		0.8537				30.5089
LD2		0.8717				35.7678
LD3		0.7896				17.2163
LD4		0.6711				9.6331
LD5		0.6862				10.3165
Strategic Planning (SP)	Reflective		0.7394	0.9189	0.8818	
SP1		0.8812				40.3804
SP2		0.8735				34.0516
SP3		0.8817				40.1971
SP4		0.8804				21.9788
Customer Focus (CF)	Reflective		0.8106	0.9277	0.8829	
CF1		0.8887				41.0899
CF2		0.9331				63.2085
CF3		0.8782				30.2951
Process Management (PM)	Reflective		0.6718	0.8908	0.8388	
PM2		0.7831				11.6446
PM3		0.8125				11.8632
PM4		0.8977				38.8066
PM5		0.7796				12.1341

Table 5.4: Measurement Model Testing Results *(continued)*

Constructs/Items	Scale Type	Weights	Average Variance Extracted	Composite Reliability	Cronbach's Alpha	T-Statistics
Human Resource Management (HR)	Reflective		0.6280	0.8931	0.8556	
HR1		0.8419				21.190
HR2		0.8482				19.098
HR3		0.8640				19.439
HR4		0.7307				7.6998
HR5		0.6566				6.6139
Information and Analysis (IA)	Reflective		0.8382	0.9395	0.9035	
IA1		0.9078				41.3202
IA2		0.9441				69.3862
IA3		0.8940				41.5575
Second Order Factors						
Customer Satisfaction (CS)	Formative		0.6642	0.9080	0.8733	
CS1		0.2623				11.6117
CS2		0.2704				14.5745
CS3		0.2108				11.6757
CS4		0.2466				12.0884
CS5		0.2359				11.6813
Employee Satisfaction (ES)	Formative		0.6789	0.9131	0.8807	
ES1		0.2668				10.7449
ES2		0.2765				9.9619
ES3		0.2383				12.0159
ES4		0.2085				7.4249
ES5		0.2218				7.4471
Product Quality (PQ)	Formative		0.7212	0.9276	0.9015	
PQ1		0.2635				17.4666
PQ2		0.2587				19.6716
PQ3		0.2504				23.4690
PQ4		0.2140				19.0154
PQ5		0.1826				10.2374
Strategic Business Performance (SBP)	Formative		0.6775	0.8626	0.7600	
SBP1		0.4419				3.3229
SBP4		0.3979				4.0922
SBP5		0.3752				3.2211

Note: Items SP5, CF4, CF5, IA4, IA5, PM1, SBP2, SBP3 were deleted due to poor loadings

5.7.3 Discriminant Validity

Discriminant validity refers to "the degree to which items differentiate between variables" (Thong, 2001, p. 152). It can be examined by the "square root of the AVEs which is greater than the correlations among all constructs" (Lallmahomed, Ab Rahim, Ibrahim, &

Rahman, 2013, p. 2781). As shown in Table 5.5, the square root of AVEs for each constructs is greater than all the correlation values (Fornell & Larcker, 1981). All loadings and cross-loadings demonstrate that each item loads highly with their respective latent constructs. Thus we can conclude that discriminant validity has been achieved.

Table 5.5: Discriminant Validity Test Results

	CF	CS	ES	HR	IA	LD	PM	PQ	SBP	SP
CF	**0.9003**									
CS	0.3641	**0.8150**								
ES	0.3400	0.2561	**0.8240**							
HR	0.2605	0.2535	0.4502	**0.7927**						
IA	0.3724	0.2883	0.4129	0.4799	**0.9101**					
LD	0.5128	0.4057	0.3918	0.4082	0.4893	**0.7789**				
PM	0.2826	0.2407	0.4402	0.3630	0.3236	0.5182	**0.8198**			
PQ	0.4243	0.4023	0.3490	0.2020	0.2823	0.4741	0.2353	**0.8492**		
SBP	-0.1784	-0.2849	0.1181	0.1717	0.0798	-0.0987	-0.0040	-0.2428	**0.8232**	
SP	0.3305	0.3319	0.4578	0.3639	0.4578	0.6746	0.4062	0.3447	-0.0233	**0.8599**

Note (1): CF = Customer Focus; CS = Customer Satisfaction; ES = Employee Satisfaction; HR = Human Resources Management; IA = Information Analysis; LD = Leadership; PM = Process Management; PQ = Product Quality; SBP = Strategic Business Performance; SP = Strategic Planning.
Note (2): Diagonal elements (bold) are the square root of the AVE for each construct. Off-diagonal factors demonstrate the inter-correlations.

The loadings and cross-loadings establish that each item loads highly with their respective latent constructs. As shown in Table 5.6, the pattern of loadings and cross-loadings confirm the discriminant validity criteria (Venkatesh, Thong, & Xu, 2012). The findings reveal that the model has a strong measurement discriminant validity.

Table 5.6: PLS-SEM Loadings and Cross-Loadings

	CF	CS	ES	HR	IA	LD	PM	PQ	SBP	SP
CF1	**0.8887**	0.3181	0.3653	0.3141	0.3884	0.5247	0.3367	0.4150	-0.0920	0.3663
CF2	**0.9331**	0.3071	0.3015	0.2599	0.3303	0.4528	0.2764	0.3860	-0.1462	0.2843
CF3	**0.8782**	0.3593	0.2449	0.1200	0.2808	0.4003	0.1404	0.3408	-0.2513	0.2344
CS1	0.3062	**0.8004**	0.2878	0.2638	0.1902	0.2575	0.1563	0.3774	-0.1411	0.1802
CS2	0.2886	**0.8725**	0.2459	0.1965	0.2324	0.2908	0.1948	0.3873	-0.1401	0.2457
CS3	0.2316	**0.8117**	0.1509	0.1807	0.1526	0.3016	0.1394	0.2006	-0.2142	0.3026
CS4	0.2935	**0.8269**	0.1828	0.2428	0.2943	0.3831	0.2387	0.3229	-0.2957	0.3293
CS5	0.3585	**0.7593**	0.1578	0.1408	0.3003	0.4305	0.2493	0.3249	-0.3900	0.3105
ES1	0.2904	0.2532	**0.8476**	0.3646	0.3245	0.3130	0.3852	0.3257	0.0827	0.3154
ES2	0.3223	0.2695	**0.8536**	0.3237	0.3675	0.3653	0.4286	0.3391	0.0356	0.3521
ES3	0.2984	0.1577	**0.8955**	0.3699	0.2971	0.2811	0.3346	0.2558	0.1124	0.3229
ES4	0.2473	0.1578	**0.8008**	0.4233	0.3587	0.3250	0.3546	0.2114	0.1773	0.4621
ES5	0.2288	0.1962	**0.7100**	0.3925	0.3568	0.3269	0.2942	0.2855	0.1010	0.4644
HR1	0.2770	0.2723	0.3854	**0.8419**	0.4696	0.4289	0.2852	0.2623	0.0588	0.3183
HR2	0.1960	0.1926	0.3506	**0.8482**	0.2980	0.2677	0.2310	0.1741	0.1501	0.1863
HR3	0.2348	0.2154	0.3722	**0.8640**	0.3642	0.2885	0.3189	0.2036	0.1240	0.2577
HR4	0.1354	0.0970	0.3490	**0.7307**	0.3857	0.2766	0.3004	0.0308	0.2216	0.3304
HR5	0.1269	0.1622	0.3362	**0.6566**	0.3916	0.3319	0.3298	0.0832	0.2262	0.4128
IA1	0.3520	0.3118	0.3592	0.3944	**0.9078**	0.4097	0.2532	0.1858	0.0603	0.4239
IA2	0.3477	0.2281	0.3980	0.4415	**0.9441**	0.4428	0.3192	0.2488	0.0845	0.4414
IA3	0.3242	0.2535	0.3755	0.4751	**0.8940**	0.4845	0.3124	0.3293	0.0737	0.3938
LD1	0.5530	0.4156	0.3277	0.2576	0.4040	**0.8537**	0.3265	0.5120	-0.2243	0.5620
LD2	0.4572	0.4121	0.3085	0.2585	0.3658	**0.8717**	0.3966	0.4763	-0.1905	0.5659
LD3	0.2979	0.2441	0.2868	0.3361	0.3378	**0.7896**	0.5312	0.2408	0.0486	0.5127
LD4	0.3034	0.1744	0.2463	0.3570	0.3953	**0.6711**	0.3955	0.2251	0.0488	0.4452
LD5	0.2736	0.2174	0.3693	0.5145	0.4513	**0.6862**	0.4882	0.2427	0.1278	0.5482
PM2	0.2094	0.1498	0.3866	0.2831	0.2867	0.4054	**0.7831**	0.1426	0.0815	0.3734
PM3	0.1617	0.1171	0.3958	0.2872	0.2562	0.3597	**0.8125**	0.1193	0.0976	0.3280
PM4	0.2728	0.2888	0.3813	0.3368	0.2763	0.4729	**0.8977**	0.2876	-0.0709	0.3636
PM5	0.2629	0.1856	0.2902	0.2649	0.2473	0.4468	**0.7796**	0.1729	-0.0725	0.2671
PQ1	0.4166	0.4458	0.3272	0.1481	0.2325	0.4371	0.2132	**0.8809**	-0.3033	0.2976
PQ2	0.3803	0.3974	0.3045	0.1380	0.1897	0.4461	0.1898	**0.9064**	-0.3175	0.2981
PQ3	0.3805	0.3562	0.3019	0.1928	0.2342	0.4606	0.2565	**0.9083**	-0.2442	0.3262
PQ4	0.3495	0.2521	0.2632	0.2519	0.3133	0.3858	0.1767	**0.8368**	-0.1072	0.3114
PQ5	0.2524	0.2129	0.2853	0.2184	0.2536	0.2500	0.1531	**0.6951**	0.0184	0.2236
SBP1	-0.1598	-0.3011	0.1337	0.1498	0.0744	-0.0998	0.0658	-0.2118	**0.8312**	-0.0041
SBP4	-0.2415	-0.2291	0.1311	0.2243	0.0574	-0.1382	-0.0538	-0.2059	**0.8806**	-0.0560
SBP5	-0.0312	-0.1618	0.0182	0.0434	0.0641	0.0010	-0.0311	-0.1793	**0.7524**	0.0020
SP1	0.2912	0.2955	0.4312	0.2732	0.4123	0.6318	0.3940	0.2896	-0.0816	**0.8812**
SP2	0.2845	0.2656	0.4371	0.2523	0.3990	0.5693	0.3419	0.2711	0.0083	**0.8735**
SP3	0.2476	0.2808	0.3829	0.3456	0.3650	0.5485	0.3047	0.3117	0.0354	**0.8817**
SP4	0.3133	0.2989	0.3202	0.3797	0.3970	0.5667	0.3537	0.3133	-0.0386	**0.8004**

Note (1): CF = Customer Focus; CS = Customer Satisfaction; ES = Employee Satisfaction; HR = Human Resources Management; IA = Information Analysis; LD = Leadership; PM = Process Management; PQ = Product Quality; SBP = Strategic Business Performance; SP = Strategic Planning.
Note (2): Items SP5, CF4, CF5, IA4, IA5, PM1, SBP2, SBP3 were deleted due to poor loadings

In addition, the results (Table 5.6) also supported the validity of these factors as indicated by the loadings factors of all items with each scale were well above 0.60 (Hair, Anderson, Tatham, & Black, 1998). Thus, the findings suggest that there is a convergence in

TQM practices and organizational performance in the Malaysian family owned and non-family owned enterprise.

Next, we proceed to examine the construct validity among the reflective indicators of organizational performance by testing the significance of the items of loading. Table 5.4 reported the items of loading for customer satisfaction, employee satisfaction, strategic business performance and product quality were significant at 1% and 5% level. Based on the test, the reflective construct is thus considered to be valid.

In order to assess the measurement quality of the second order construct (i.e. organizational performance), two stage procedure was engaged whereby the significance of the first order constructs was first examined (Table 5.4) and then at the second order construct level, the significance of the first order constructs which act as the indicators of the second order construct was tested (Table 5.7)

Table 5.7: Weights of First Order Constructs on the Second Order Constructs

Second order Constructs	First Order Constructs	Weights	T Statistics
OP	CS	0.4203	10.2686**
	ES	0.3652	6.6141**
	PQ	0.5074	13.6018**
	SBP	-0.1049	2.5343*

Note (1): CS = Customer Satisfaction; ES = Employee Satisfaction; HR = PQ = Product Quality; SBP = Strategic Business Performance; OP = Organizational Performance
Note (2): $p< 0.01$**; $p< 0.05$*

In Table 5.7, we have found that the item weights for customer satisfaction, employee satisfaction, strategic business performance and product quality were significant. Based on above observations, the formative construct is therefore deemed to be valid.

5.8 Structural Model Analysis

The structural model presented in Figure 5.1 was produced after analyzing the sample data using Smart PLS-SEM (Ringle, Wende, & Will, 2005). Both independent and dependent factors are modeled as reflective, and most of the constructs are evaluated by multiple indicators (Wang & Scheepers, 2012). Organizational performance was modeled as a second-

order of four first-order constructs: customer satisfaction, employee satisfaction, product quality and strategic business performance, as recommended by Chin (1998), in accordance with Lallmahomed, Ab Rahim, Ibrahim, and Rahman (2013) and is measured by using the repeated indicators approach (Wetzels, Odekerken-Schroder, & van Oppen, 2009; Wang & Scheepers, 2012).

5.8.1 Testing for Construct Collinearity

Both VIF (variance inflation factor) and tolerance were conducted to examine the collinearity issue. The collinearity issue exists if the correlation coefficient between predictor variables are too high (i.e. > 0.90) which from Table 5.8, all the correlation coefficients are below 0.90. In addition, Table 5.8 also shows the values for VIFs were less than 10 and the tolerance values were larger than 0.10 as recommended by Kline (2005) and thus we can conclude that there is no collinearity found in the dataset presented.

Table 5.8: Testing for Constructs Collinearity

	Standardized Coefficients (Model 1: PQ)	Standardized Coefficients (Model 2: SBP)	Standardized Coefficients (Model 3: CS)	Standardized Coefficients (Model 4: ES)	Collinearity Statistics	
	β	β	β	B	Tolerance	VIF
CF	0.272	-0.225	0.223	0.150	0.748	1.337
HR	-0.021	0.250	0.030	0.241	0.699	1.431
IA	0.045	0.096	0.064	0.117	0.634	1.578
LD	0.230	-0.062	0.137	-0.164	0.392	2.554
PM	-0.029	0.000	0.009	0.241	0.680	1.470
SP	0.100	-0.045	0.130	0.287	0.524	1.908

a. Dependent Variable: Model 1 = PQ; Model 2 = SBP; Model 3 = CS; Model 4 = ES
Note: CF = Customer Focus; HR = Human Resource Management; IA = Information & Analysis; LD = Leadership; PM = Process Management; SP = Strategic Planning

5.8.2 Path Analysis Results

Table 5.9 displays the results of this study including the path coefficients, variance explained and the level of significance, while the structural model employed in this study is

demonstrated in Figure 5.1. The PLS-SEM was carried out to investigate the following research questions:

RQ1: Do the identified TQM practices namely leadership, strategic planning, customer focus, information & analysis, process management and human resource management, have any positive relationship with organizational performance in the Malaysian family owned and non-family owned enterprise?

RQ2: Which TQM practices have the strongest relationship with (family owned and non-family owned) organizational performance?

RQ3: "Does the strength of the relationship between TQM practices and organizational performance change when the relationship is moderated by firm size (i.e. small firms and large firms)?"

RQ4: "Does the strength of the relationship between TQM practices and organizational performance change when the relationship is moderated by industry type? (i.e. manufacturing firms and service firms)?"

RQ5: "Does the strength of relationship between TQM practices and organizational performance change when the relationship is moderated by firm's ownership (i.e. the family owned firms and non-family owned firms)?"

The results displayed in Figure 5.1 revealed that the constructs of leadership, strategic planning, customer focus, human resource management, information and analysis and process

management explained 42.60% of the organizational performance and hence supporting the suitability of the MBNQA model in organizational performance context. The empirical findings also strongly support the MBNQA model to predict organizational performance in Prajogo and Sohal's (2003) findings.

As reported in Figure 5.1, the PLS-SEM results show two out of six hypotheses have significant relationship with organizational performance. Customer focus ($\beta = 0.2865$, $p < 0.01$); and leadership ($\beta = 0.2025$, $p < 0.01$) were found to have positive and significant relationship with organizational performance, with customer focus being the stronger relationship with organizational performance. Based on this finding, we can conclude that H1 and H5 were supported. On the contrary, the constructs of strategic planning ($\beta = 0.0161$, $p > 0.05$), information and analysis ($\beta = 0.0582$, $p > 0.05$), process management ($\beta = 0.0788$, $p > 0.05$) and human resource management ($\beta = 0.0909$, $p > 0.05$) were found to be insignificant predictors in influencing organizational performance. Thus, H2, H3, H4 and H6 were not supported. In response to RQ1: "*Do the identified TQM practices namely leadership, strategic planning, customer focus, information & analysis, process management and human resource management, have any positive relationship with organizational performance in the Malaysian family owned and non-family owned enterprise?"*, the findings of this study revealed that two out of six TQM practices, namely H1 (leadership); and H5 (customer focus) were found to have a positive impact on organizational performance. In response to RQ2: *"Which TQM practices have the strongest relationship with (family owned and non-family owned) organizational performance?", c*ustomer focus was found to have strongest effect on organizational performance.

Table 5.9: PLS Results for Hypotheses Testing (Without moderating variables)

Hypothesis	Path	β	Remarks
H1	LD → OP	0.2025**	Supported
H2	SP → OP	0.0161	Not Supported
H3	HRM → OP	0.0909	Not Supported
H4	PM → OP	0.0788	Not Supported
H5	CF → OP	0.2865**	Supported
H6	IA → OP	0.0582	Not Supported

Note (1): CF = Customer Focus; HR = Human Resources Management; IA = Information Analysis; LD = Leadership; PM = Process Management; SP = Strategic Planning; OP = Organizational Performance; INDOWN = Firm's ownership; INDTYPE = Firm's Type; INDSIZE = Firm's Size.
Note (2): Industry's Ownership (0 = family owned firm; 1= Non-Family owned firms); Industry's Type = (0 manufacturing firms; 1 = service firms); Industry's Size = (0 = small firms; 1 = large firms)
Note (3): $p < 0.01$**; $p < 0.05$*

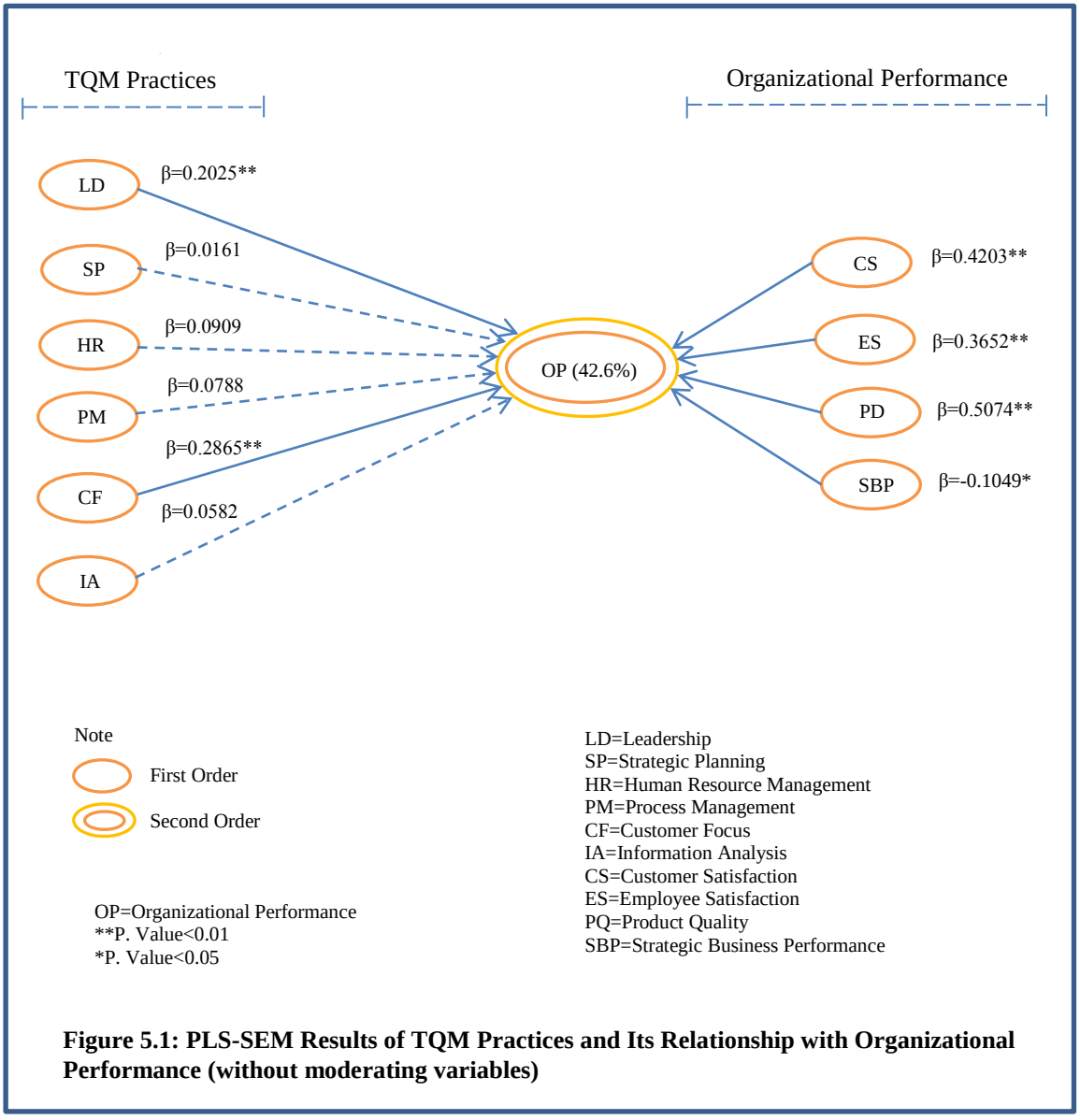

Figure 5.1: PLS-SEM Results of TQM Practices and Its Relationship with Organizational Performance (without moderating variables)

5.8.3 Partial Least Square Results with Moderating Effect of Firm Size

PLS-SEM analysis was carried out to examine the moderating effects of firm size (i.e. small firms (< 200) and large firms (≥ 200)) on six TQM practices towards organizational performance (Figure 5.2). For analysis purpose, small firm was coded as 0 and large firm was coded as 1. The PLS-SEM results with moderator were tabulated in Table 5.10. The results reported that even though firm size (β = -0.2515, $p < 0.01$) has significant effects on organizational performance (OP), however since none of the six TQM constructs with regard to firm size showed any significant effect individually on the organizational performance, therefore it is concluded that firm size has no moderating effect on the TQM dimensions. Thus, H7 was not supported. The result is consistent with the research finding of Ahire and Golhar (1996) and Sila (2007) in which they found that firm size has no impact on TQM practices and outcomes. However, our finding opposed to study conducted by Jayaram, Ahire, and Dreyfus (2010) and Hendrick and Singhal (2001) in which they found that firm size moderates the effect of TQM on the final outcomes.

In order to our response to the RQ3: "*Does the strength of the relationship between TQM practices and organizational performance change when the relationship is moderated by firm size (i.e. small firms and large firms)"*, the finding shows that there is no significant difference between the small and large firms in terms of the association between the key practices of TQM and organizational performance. Thus, all the significant paths are applicable to both firm sizes. And we conclude that H7 was not supported.

Table 5.10: PLS Results for Hypotheses Testing with Moderating Variable (Firm Size)

Path	Dependent Variable (β)	Remarks
LD	0.1336	Not supported
SP	0.1864	Not supported
HR	0.1162	Not supported
PM	0.1426*	Supported
CF	0.2648**	Supported
IA	0.0419	Not supported
FMSZ	-0.2515**	Supported
FMSZ*LD	0.0111	Not supported
FMSZ*SP	-0.0093	Not supported
FMSZ*HRM	0.1226	Not supported
FMSZ*PM	-0.1035	Not supported
FMSZ*CF	0.0766	Not supported
FMSZ*IA	-0.1504	Not supported
R^2	0.5120	

Note (1): LD = Leadership; SP = Strategic Planning; HR = Human Resources Management; PM = Process Management; CF = Customer Focus; IA = Information Analysis; FMSZ = Firm Size.
Note (2): $p < 0.01$**; $p < 0.05$*

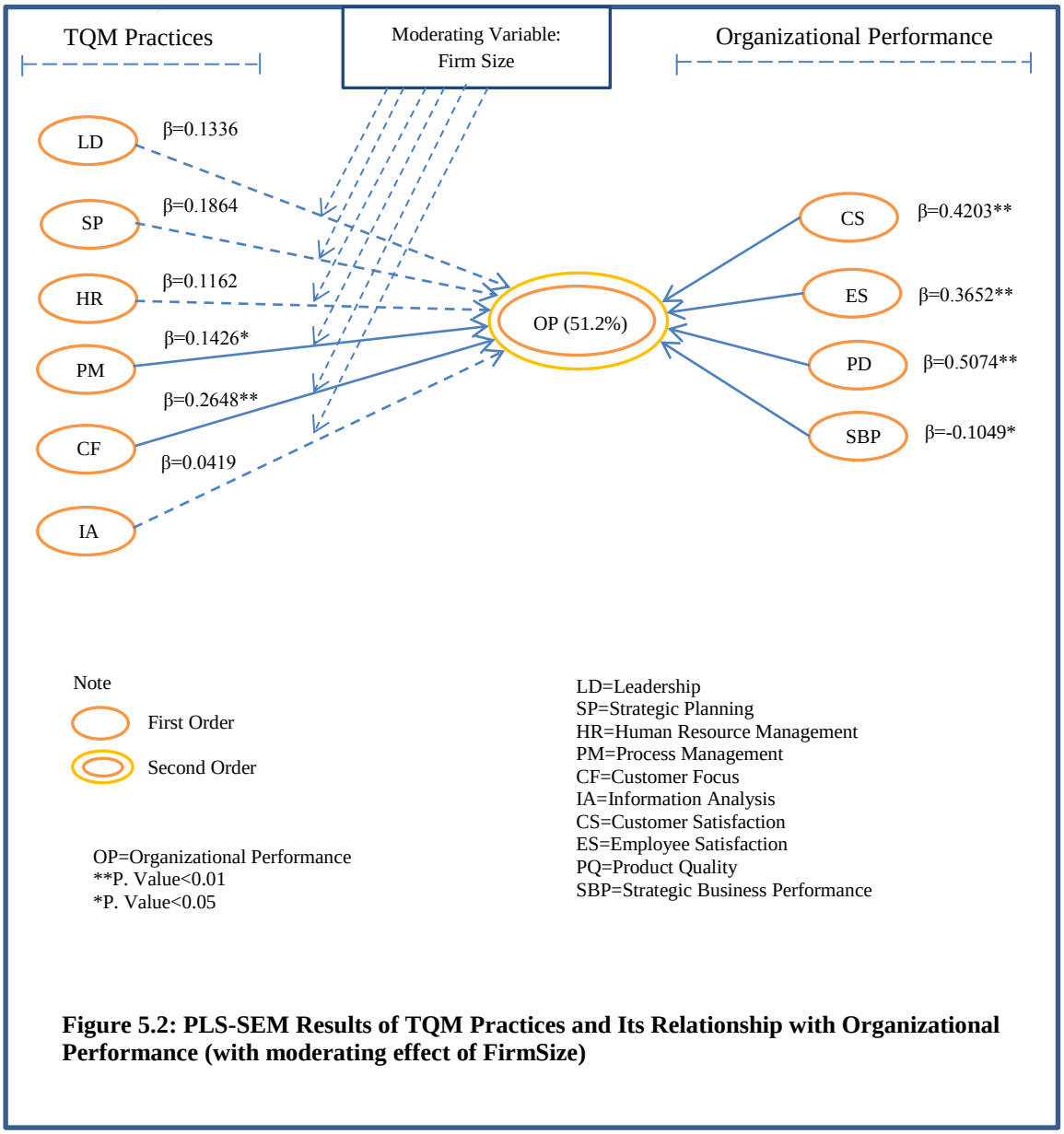

Figure 5.2: PLS-SEM Results of TQM Practices and Its Relationship with Organizational Performance (with moderating effect of FirmSize)

5.8.4 Partial Least Square Results with Moderating Effect of Industry Type

With regard to the second moderating variable which is by industry type, where we divide the sample collected into manufacturing firms (i.e. coded as 0) and service firms (coded as 1); to test if there is any categorical effect on organizational performance by industry type (Figure 5.3). When the moderating effect of industry type was included, the effect of TQM on organizational performance was found to be insignificant ($\beta = 0.0168$, $p > 0.05$). The above finding is inconsistent with the research finding of Flynn, Schroeder, and Sakakibara (1994), Jayaram, Ahire, and Dreyfus (2010), and Sakakibara et al., 1997 in which they found that the impact of TQM principles on outcomes varied across firm types. However, our result is consistent with the study of Shah and Ward (2003) in which they found that there is no moderating effect of industry type on the relationships between TQM practices and outcomes.

In response to the RQ4: "*Does the strength of the relationship between TQM practices and organizational performance change when the relationship is moderated by industry type? (i.e. manufacturing firms and service firms)?",* the finding concluded that it is likely that TQM practices, and not industry type, explains organizational performance. Thus, it can be concluded that the relationship of TQM practices to organisation performance was found not to differ by industrial sector. And we conclude that H8 was not supported

Table 5.11: PLS Results for Hypotheses Testing with Moderating Variable (Industry Type)

Path	Dependent Variable (β)	Remarks
LD	0.2016*	Supported
SP	0.1541	Not supported
HR	0.0894	Not supported
PM	0.0857	Not supported
CF	0.2880**	Supported
IA	0.0612	Not supported
INDTYP	0.0168	Not supported
INDTYP*LD	0.0108	Not supported
INDTYP*SP	0.0520	Not supported
INDTYP*HRM	0.0183	Not supported
INDTYP*PM	-0.0305	Not supported
INDTYP*CF	0.0789	Not supported
INDTYP*IA	0.0612	Not supported
R^2	0.4350	

Note (1): LD = Leadership; SP = Strategic Planning; HR = Human Resources Management; PM = Process Management; CF = Customer Focus; IA = Information Analysis; INDTYP = Industry's Type.
Note (2): $p< 0.01$**; $p< 0.05$*

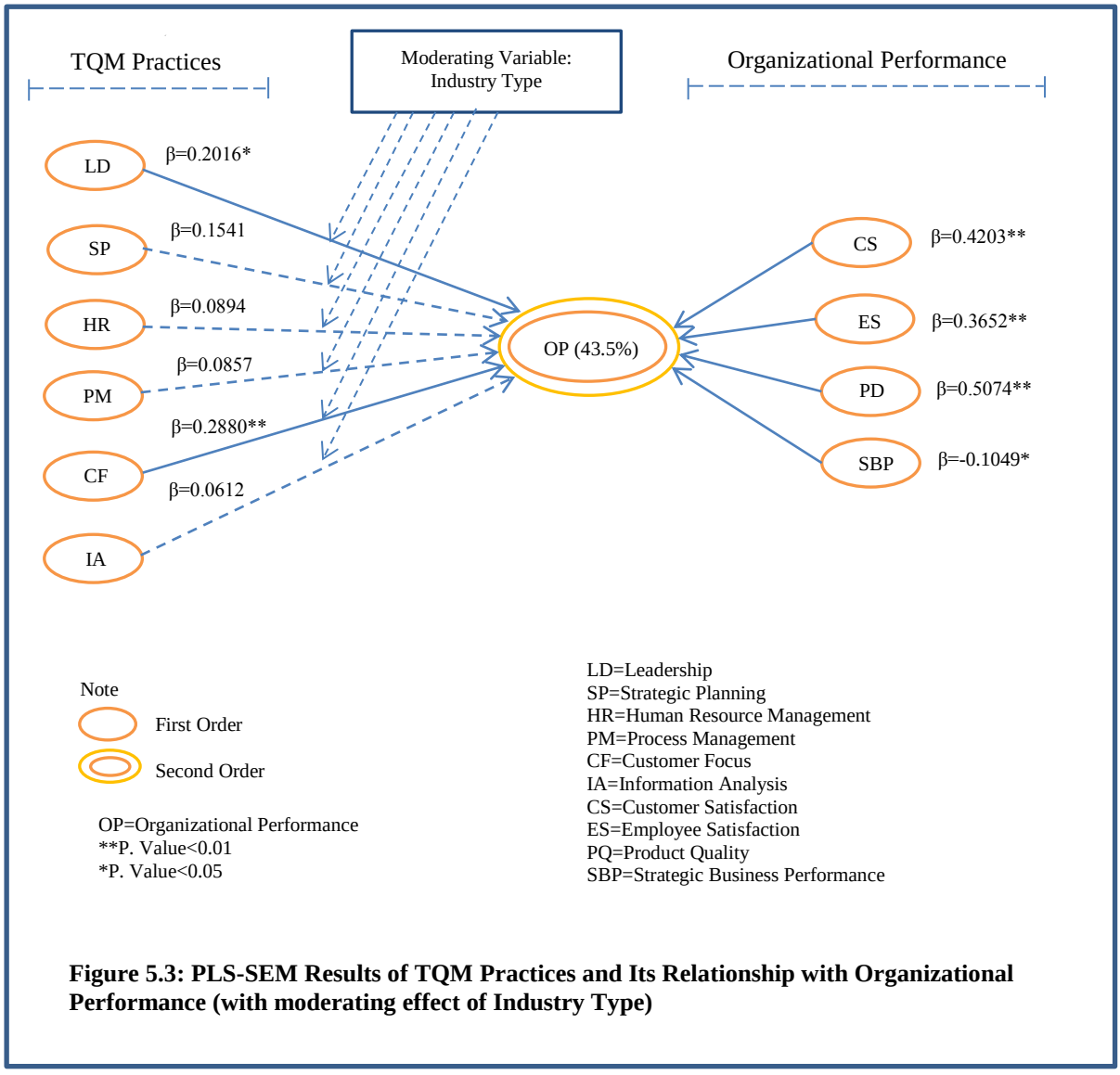

Figure 5.3: PLS-SEM Results of TQM Practices and Its Relationship with Organizational Performance (with moderating effect of Industry Type)

5.8.5 Partial Least Square Results with Moderating Effect of Firm's ownership

On the other hand, for the moderating variable of firm's ownership (i.e. family owned and non-family owned enterprises) on six constructs of TQM towards organizational performance (Figure 5.4), Table 5.12 implies that firm's ownership (β = -0.0658, $p > 0.05$) has no moderating effect on the relationships among the constructs. This finding is consistent with the studies by Callejo (2012), and Ellington, Jones, and Deane (1996), both have found that family owned firms are able to perform better with the adoption of TQM practices. In this study we conclude that there is no different in terms of performance with TQM adoption with different firm's ownership, therefore H8 was not supported.

In response to the RQ5: "*Does the strength of relationship between TQM practices and organizational performance change when the relationship is moderated by firm's ownership (i.e. the family owned firms and non-family owned firms)?"*, this finding concludes that regardless of the firm's ownership, both family owned and non-family owned enterprises are able to adopt TQM practices which can contribute to a successful organizational performance. From the findings, we can conclude that TQM principles are suitable to be applied with equal effectiveness on family owned as well as non-family owned firms. From our literature review, there isn't any research paper that has been published with the similar finding and similar research objective. This is one significant contribution from the study to the TQM literature.

Table 5.12: PLS Results for Hypotheses Testing with Moderating Variable (Firm's Ownership)

Path	Dependent Variable (β)	Remarks
LD	0.1763	Supported
SP	0.1019	Not supported
HR	0.0907	Not supported
PM	0.1280	Not supported
CF	0.2752**	Supported
IA	0.0671	Not supported
FMOWN	-0.0658	Not supported
FMOWN*LD	0.0783	Not supported
FMOWN*SP	0.0429	Not supported
FMOWN*HRM	-0.1067	Not supported
FMOWN*PM	-0.1720*	Supported
FMOWN*CF	0.0203	Not supported
FMOWN*IA	0.0413	Not supported
R^2	0.4570	

Note (1): LD = Leadership; SP = Strategic Planning; HR = Human Resources Management; PM = Process Management; CF = Customer Focus; IA = Information Analysis; INDOWN = Firm's Ownership.
Note (2): $p < 0.01$**; $p < 0.05$*

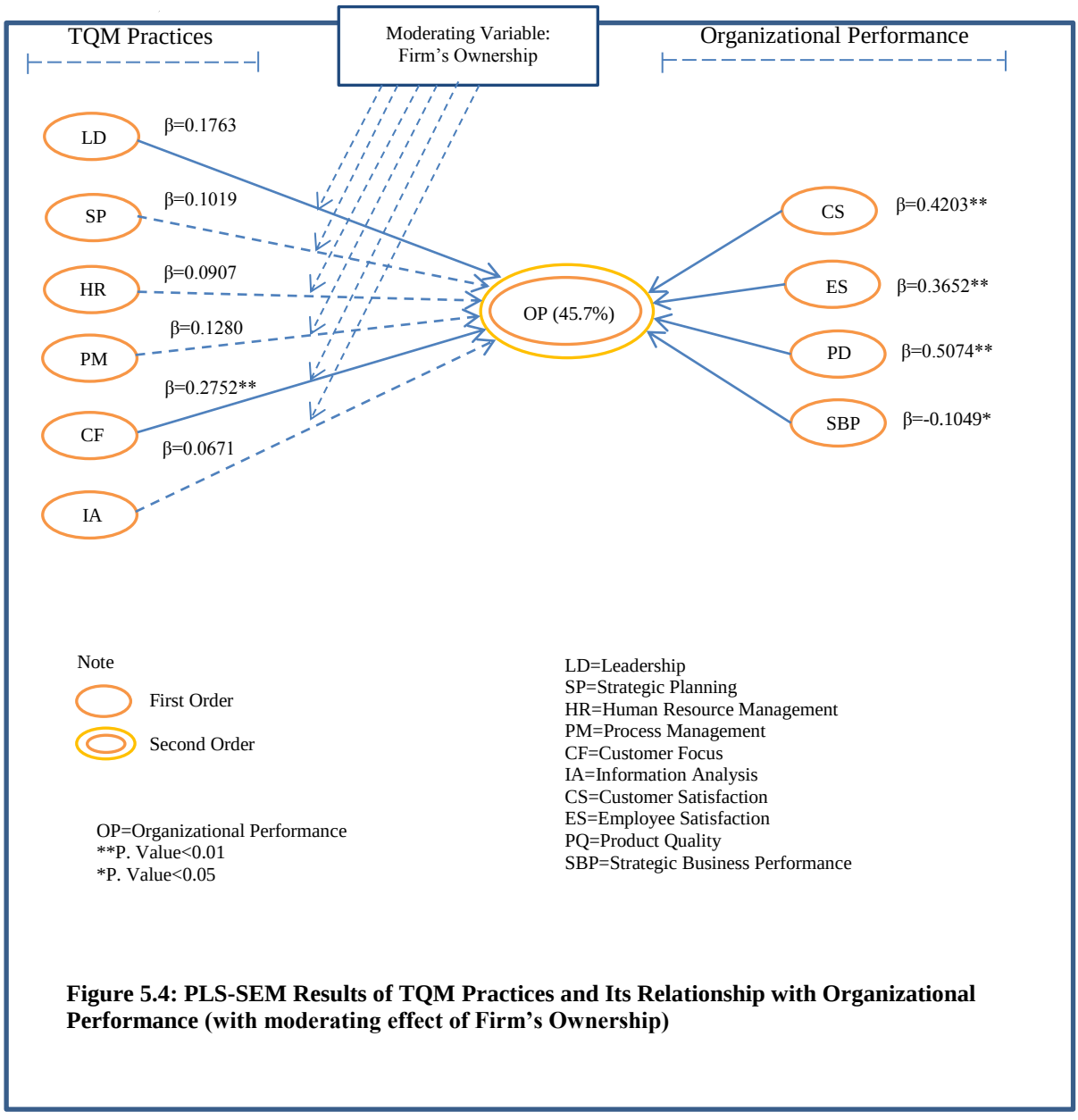

Figure 5.4: PLS-SEM Results of TQM Practices and Its Relationship with Organizational Performance (with moderating effect of Firm's Ownership)

5.8.6 Predictive Relevance and Effect Size

Table 5.13 shows the predictive relevance of the endogenous latent variables and the R^2 values at 0.426 which means the TQM practices only contributed to approximately less than half of the contributing factors. In the social science research this findings is indeed very common and expected to be. As to the other contributors to the performance, could include other good business practices such as good financial management, being innovative, effective marketing practices, relationship with stakeholders and also exogenous factors such as external market opportunities, social political environment changes, societal change in cultural aspect, change of consumers preference, banking and financial environment etc. that may affect performance of a firm. Since the Stone-Geisser's Q^2 value for customer satisfaction, employee satisfaction and product quality are larger than 0.35 except for strategic business performance, and thus these three endogenous variables have a large predictive relevance based on its Q^2 which is greater than 0.15 (Cohen, Manion & Morisson, 2013; Hair, Sarstedt, Ringle, & Mena, 2012). In general, we may conclude that the model has a substantial predictive power in explaining the organizational performance.

Table 5.13: Predictive Relevance of the Endogenous Latent Construct

Endogenous variable	R^2	Q^2
OP	0.4260	0.4812

Note: OP = Organizational Performance

Table 5.14: Effect Size

	DV = OP (path Coefficient)	f-square	q-square
LD	0.1207	0.0097	0.1133
SP	0.2015*	0.0389	0.1222
PM	0.1229*	0.0915	0.1264
IA	0.0509	0.0039	0.0944
CF	0.2707**	0.0992	0.2034
HR	0.1272	0.0214	0.1349

Note: LD = Leadership; SP = Strategic Planning; PM = Process Management; IA = Information Analysis; CF = Customer Focus; HR = Human Resources Management; OP = Organizational Performance

The reporting of effect sizes f-square (f^2) is important for the interpretation of analysis results as it provides a detailed of non-significant findings and a comprehensive understanding on presenting the practical of statistically significant effects (Fairchild & McQuillin, 2010). Moreover, the effect size q-square (q^2) evaluates the impact of exogenous latent variables on the endogeneous latent variables' Q^2. In according to the guidelines by Cohen (1988), the effect size f-square is assessed as 0.02 for small, 0.15 for medium and 0.35 for large. Table 5.14 showed the effect sizes q^2 and $f^2$of the endogenous constructs by using blindfolding approach where the effect size f^2 is considered small.

5.9 Conclusion

This chapter presented the results of the data analysis and research findings of the relationship between the key practices of TQM and organizational performance. PLS-SEM was performed in order to answer the six proposed research questions and six hypotheses. The findings reported that customer focus has the greatest influence on organizational performance followed by leadership. Thus, H1 (leadership) and H5 (customer focus) were all statistically supported. However, the hypotheses of H2 (strategic planning), H3 (human resource management), H4 (process management) and H6 (information and analysis) were not supported. As for the moderating effect study by firm size, industry type and firm's ownership, for H7, H8 and H9, all are found to have no moderating effect on the organizational performance when TQM is practised.

The detailed discussion of the findings in this chapter and their influence on the research questions and contributions, research limitations and future research will be further elaborated in the next chapter of this thesis.

CHAPTER 6

CONCLUSION

6.1 Introduction

This last chapter presents the conclusion and implications of the study, it consists of four parts. The first part begins with the discussion of the findings based on the statistical results reported on the five research questions and 9 hypotheses proposed. Follow by research contributions in the second part. Thereafter the research limitations and future research directions are discussed and presented in the third part. Lastly, a concluding remark is presented in the last part of the chapter.

6.2 Discussion of the Findings

Before the results from the data analysed are accepted, the reliability and validity of the data ought to be confirmed fit for the investigation purpose within the research model proposed.

6.2.1 Data Reliability and Validity

Validity and reliability tests were conducted in order to ensure validity and reliability for measuring and predicting organizational performance in the model proposed. Firstly, factor analysis was undertaken to ascertain the validity of TQM scales that consist of six dimensions, following the scales that are widely adopted by many researchers such as Arumugam, Ooi, and Fong (2008), Chong, Chan, Ooi, and Darmawan (2011), Ooi (2014), Prajogo, Laosirihongthong, and Sohal (2007) and Teh, Yong, Arumugam, and Ooi (2009). On the other hand, Hair, Anderson, Tatham, and Black (1998) recommended that the factor loading

value is to be above the threshold of 0.50 to be meaningful and valid for the elements selected. The factor loading values of all items for each of the selected TQM dimension (i.e. leadership, strategic planning, human resource management, process management, customer focus and information and analysis) were calculated to be above 0.50, with value ranging from 0.6566 to 0.9441. Of the total TQM scale element item, 6 items were dropped as their loadings did not meet the minimum required cut-off level of 0.50. They were: one item (SP5) in the strategic planning factor; two items (CF4, CF5) in the customer focus factor; one item (PM1) in the process management factor and two items (IA4, IA5) in the information and analysis factor. All the values of CR for all measured variables are within an acceptable range of 0.70 and above, whereas AVE of each construct has fulfilled the minimum cut-off level of 0.50, and lastly, discriminant validity has been met whereby all the correlations values is lower than the square root of AVEs, in accordance to recommendation of Fornell and Larcker (1981).

Secondly, the reliability test was assessed through Cronbach's alpha measurement on the TQM scales whereby the criteria suggested that minimum acceptable level of 0.70 is deemed to be reliable as proposed by Nunnally and Bernstein (1994). As observed from the reliability test, the Cronbach's alpha values for each of the six TQM dimensions, namely: leadership (0.8447), strategic planning (0.8818), human resource management (0.8556), process management (0.8388), customer focus (0.8829) and information and analysis (0.9035) were well able to fulfil the requirement of exceeding 0.70. Therefore, the finding provides evidence that the six TQM dimensions can be used to measure the contribution to the organizational performance.

6.2.2 Findings – Research Question One

In relation to the first research question – RQ1, "*Do the identified TQM practices namely leadership, strategic planning, customer focus, information & analysis, process*

management and human resource management, have any positive relationship with organizational performance in the Malaysian family owned and non-family owned enterprise?", the findings reported that leadership and customer focus contribute to the significant relationship of TQM and organizational performance of firms in Malaysia. On the other hand, we found strategic planning, process management, human resource management and information and analysis do not have a significant relationship between TQM constructs and organizational performance among the Malaysian family owned and non-family owned enterprises. This indicates that increase organizational performance can be achieved along with TQM practices such as being customer focus and emphasis on top management leadership toward continuous improvement among the family owned and non-family owned enterprise. Given that the effectiveness and successful implementation of TQM would lead to increase organizational performance, the finding provides evidence to support previous research conducted by Jitpaiboon and Rao (2007), Joiner (2007) and Fotopoulos and Psomas (2010). Such finding is also in line with Valmohammadi (2011), which goes to prove that the importance of TQM do have an effect on organizational performance in manufacturing SMEs in Iran. Similarly, in a research carried out by Demirbag, Tatoglu, Tekinkus, and Zaim (2006) surveyed on 163 SMEs of textile industry in Turkey, the role of TQM has also been proven to be a critical determinant to produce broad advantages, for instance knowing better of the customer needs to improve customer satisfaction and better solving of problems on reducing errors to improve internal communication that can directly and indirectly influence the organizational performance.

6.2.3 Findings – Research Question Two

In addressing the research question two – RQ2, "*Which TQM practices have the strongest relationship with (family owned and non-family owned) organizational*

performance?", it was found that among the two significant predictors, customer focus has the strongest relationship with organizational performance among the Malaysian family and non-family owned firms, followed by leadership. This indicates that the role of customer focus is the most important factor among the six dimensions for TQM tested in influencing organizational performance. The reason for this can be explained as customer orientation is commonly suggested to improve in quality performance service delivery which in turn results in increasing customer satisfaction. The aim of customer focus refers to delivering greater level of customer satisfaction by continuously fulfilling customer's needs efficiently and effectively. With a positive perception that customer focus is "a central tenet of market orientation" (Nwokah & Maclayton, 2006, p. 65), customer satisfaction results is derived from market orientation, which impact on employees' job satisfaction that has an effect on encouraging quality improvement. Thus, the expectation of identifying customers' needs and delivering customer satisfaction are to be expected to produce quality improvement. The improved quality performance will deliver superior value in maximizing customer satisfaction which will undoubtedly contribute to higher organizational performance. As today's business market is highly competitive, customer retention is deemed to be the key driver of an organization to compete successfully. Henceforth, a sufficient understanding and practising of customer focus is deemed the essential component for an effective TQM implementation towards successful organizational performance. The following subsections will discuss the findings of each hypothesis.

6.2.3.1 Hypothesis 1 – Leadership will contribute to organizational performance

Leadership is reported to have a significant relationship with organizational performance, thus supporting H1. The outcome in this study is inconsistent with the results of Wong, Sim, Lam, Loke, and Darmawan (2010), leadership was found to be insignificantly

related to quality performance among the Malaysian ISO 9001:2000 certification manufacturing organizations. Arising from the finding, the role of leadership is found to be perceived as a key component of TQM for continuous improvement in creating goals, setting of principles and providing guidelines to enhance performance of the organization. This research outcome is consistent with Rowe, Cannella, Rankin, and Gorman (2005) study in which leadership is believed to impact on organizational performance. The present finding is also in line with Valmohammadi (2011) that the implementations of leadership practice in manufacturing SMEs has led to enhancement of organizational performance. Furthermore, in contrast with Huarng and Chen's (2002) study, top executive support has proved to improve business performance, the finding in this study implies that leadership is perceived to play an important role in enhancing organizational performance of the Malaysian family and non-family owned firms. On the other hand, the result from this study conflicts with Daily and Near (2000) in their study on whether job and life satisfaction of CEO would lead to firm's performance among 221 owner/managers of family owned automobile dealerships, they concluded that there is no relationship in the form of moderating or mediating effect that could affect firm's performance. In order to achieve higher level of organizational performance by family and non-family owned firms, support from top management with participation of proactive leadership need to be taken as an essential dimension of TQM concept.

6.2.3.2 Hypothesis 2 – Strategic planning will contribute to organizational performance

H2 was not supported by positive path coefficient, indicating that strategic planning has significant association with organizational performance. The finding implies that a positive effect of the strategic planning do not have the potential to help family and non-family owned

firms in setting new and innovative plans and in adapting their actions plans to suit the changing market and hence encourage to improve organizational performance. This finding is inconsistent with the result of Feng, Prajogo, Tan, and Sohal (2006) as their study highlighted the importance of strategic planning would have the ability to influence firm's performance. Furthermore, the arguments from the literature by Brah and Lim (2006) have not been supported in this finding by yielding higher organizational performance in which a suitable strategic plan assists organizations to alter their plans effectively. Interestingly, the influence of strategic decision making has not been proven to be an important determinant to enrich organizational performance. The finding also does not support the view of Porth (2003) that the efforts of strategic planning have added organizational effectiveness by creating a unified working environment to improve cooperation for teamwork. Therefore, it is suggested in this study that strategic and tactical plans do not support better performance on achieving organization's goals by applying strategic planning. The result has contradicted the study by Temtime's (2000) where it was concluded organizations tend to outperform when a formal planning is clearly listed and developed with objectives. In the meta-analytic study carried by Miller and Cardinal in 1994, they acknowledged that there was inconsistency that being reported in the role of planning in the effect of organizational performance, even though in their conclusion, they suggested that the inconsistency was mainly due to method of study and concluded that planning does have a positive in organizational performance. However, as reported in the current finding, the positive effect of strategic planning does not make an important suggestion that confirming the relationship of strategic planning and organizational performance among the Malaysian family and non-family owned firms. This finding is found to be consistent with Song, Im, Bij & Song (2011) whereby they collected data from 227 firms on strategic planning and new product development performance, which they concluded that strategic planning impede, and not enhances new product development. In another study

by Voss & Voss (2000) on strategic orientation on artistic organizations; they found that the association between strategic orientation and performance largely depending on the performance measured, i.e. they could not conclude clearly of the relaiotnship between strategic planning and performance in artistic organizations. Therefore this finding concludes that strategic planning is not significant to every organization in both family and non-family owned enterprises.

6.2.3.3 Hypothesis 3 – Human resource management will contribute to organizational performance

Contradictory to expectation on H3, it was revealed that human resource management does not demonstrate a significant relationship on organizational performance. This could imply that the role of human resource management is not perceived to be a contributing element to help family and non-family owned firms to gain performance. The finding is not in line with Cascio (2003), Che Ros and Kumar (2006), Lee and Lee (2007), Tzafrir (2006) and Wang and Zhang (2005), as human resource management in their studies have been concluded to have a significant correlation with organizational performance. The finding from this research is also in disagreement with the past literatures that human resource management have been contended to improve productivity for enhancement of organizational performance (Ramsey, Scholarios, & Harley, 2000) through training and development to enable knowledge sharing between employer-employee (Ballot, Fakhfakh, & Taymaz, 2006; Dearden, Reed, & van Reenen, 2006). If human resource management is not a vital mechanism of managing people, it will not have the ability to improve the quality of work, productivity and increase revenue without an effective managing system among its employees throughout the organization, and hence the result of this research has not supported the argument by Cascio (2003). However Guest, Michie, Conway & Sheehan (2003) in their study on 366 British

firms found that greater use of HRM practices is associated with higher profitability per employee but not related higher productivity. More so the association becomes insignificant if the result is control with prior year's performance. They further concluded that there is no causal relationship between HRM practices and performance. Our finding concurs with the study and can be seen that the role of human resource management is not being suggested as a fundamental element to help family and non-family owned firms to gain organization's effectiveness.

6.2.3.4 Hypothesis 4 – Process management will contribute to organizational performance

H4 was not supported in this research as the finding revealed that process management is found to be positively and insignificantly associated with organizational performance. This can be said that scheduled plans and well-organized task practices of process management does not reduce process variation, minimizing errors and producing higher output, thus improving organizational performance. This finding has provided evidence to disagree with the suggestions from Kumar, Smart, Maddern, and Maull (2008) and Maddern, Maull, Smart, and Baker (2007) that process management has the potential to influence on technical service quality. They have verified through the application of business process management whereby higher levels of customer satisfaction can be supported which is related to technical service quality to improve quality performance efficiency. In conflict with the studies of Ju, Lin, Lin, and Kuo (2006) and Ooi (2009), a well-managed process can reduce cost, lower cycle time and improved quality performance. Likewise, the result is also inconsistent with Arumugam, Chang, Ooi, and Teh (2009) where process management has been proven to be significantly effective on business performance of a large USA hard disk manufacturing company based in Malaysia. On the other hand in their award winning paper Benner and Tushma (2003)

proposed that process management is only beneficial for organization in stable contexts. And at the same time process management is found to be only useful for incremental innovation and is contradictory to exploratory achievement. Through the above results, the finding indicated that an organization should identify, improve and monitor key processes in order for the improvement of performance organizational to be successful.

6.2.3.5 Hypothesis 5 – Customer focus will contribute to organizational performance

Among other findings, the result of customer focus was reported to have the strongest impact on organizational performance among the Malaysian family owned and non-owned family enterprises. The research result confirmed the role of customer focus is critical in influencing organizational performance. Coincides with the findings of research carried out by Nwokah and Maclayton (2006), this finding indicates that the main criterion for enhancing performance of an organization is based on customer focus aspects. The finding stresses on the need for an organization to emphasize customer orientation to enhance competitive advantage, thus supporting evidence for the views of Kaynak (2003), Oakland (2005) and Sousa (2003) on quality performance improvement. Further, the result has correspondingly confirmed that emphasizing higher extent of customer focus has the ability to support greater customer satisfaction by continuously satisfying customer's needs (Nwokah & Maclayton, 2006). The strategy of customer focus to improve on employee satisfaction has also been proven in the study by Ooi, Bakar, Arumugam, Vellapan, and Loke (2007) when employees are satisfied in a favourable working environment that closely monitor and evaluate customer's feedback do increase customer satisfaction. Based on the result that customer focus was found to be significantly related with organizational performance, opinions can be formed that the importance of customer focus among family and non-family owned enterprises in concerning about customer needs will lead to quality improvement and

increased in higher level of customer satisfaction which subsequently has a positive impact on organizational performance.

6.2.3.6 Hypothesis 6 – Information and analysis will contribute to organizational performance

The finding of H6 has not provided evidence to support on what was hypothesized in this study, in which information and analysis has no significant relationship with organizational performance among family and non-family owned enterprises in Malaysia. Information has not been proven to play as a fundamental component in business operations, which is opposing to Hsu, Lawson, and Liang (2007) that information is imperative for an organization to compete for survival. The finding does not support the statement of Gil-Padilla and Espino-Rodríguez (2008) that information system and technological resources are suggested to support business processes for improvement in organizational performance. The insignificant result was not supported to signify the importance of information for an organization to make necessary amendments in adapting to planned performance. In addition, the past research result from the Teh, Yong, Arumugam, and Ooi (2009) was also not in supporting the result of this study whereby employees' role conflict can be reduced by adopting information as a tool to provide a clearly defined employee roles and functions, resulting in improving employee satisfaction. Similar finding reported by Phusavat, Kanchana, and Helo (2007) also confirmed that information technology can contribute to reduce demanding cost, improved quality and facilitate market delivery, but their result does not agree with the finding of this study. Based on the finding, information and analysis could not act as a determinant to improve quality for greater customer satisfaction, employee satisfaction and finally has no impact on organizational performance. However, Tippins & Sohi (2003) opined that IT investment does not always bring the similar benefits to all firms.

They carried out a research on 271 manufacturing firms conclude that the results from IT investment largely depending on the mediating effect of organizational learning. This suggest that the non-relationship findings between information and analysis from the current study have been mediated by the same or other actor. Similarly Melville, Kraemer & Gurbaxani (2004) in their literature review they concluded that the association between information technology and organizational performance depends on how key constructs are conceptualized. They further suggested other factors include complementary organizational resources, types of trading partners and competitive macro environment. This means there are probably many moderators that could affect the findings on the relationship between information and analysis with organizational performance. Consequently, the finding warrant us to investigate further whether a good and well implemented information and analysis system and management should be designed to monitor the quality of key business processes towards improvement in organizational performance.

6.2.4 Findings – Research Question Three

For the third research question – RQ3, *"Does the strength of the relationship between TQM practices and organizational performance change when the relationship is moderated by firm size (i.e. small firms and large firms)?"*, the result reveals that firm size does not moderate all the paths. The finding shows that there is significant difference between the small and large firms in terms of the relationships between TQM practices and organizational performance as a whole. However, when analysed individually on each of the six constructs with regard to firm size as moderator, it is unable to single out any single construct that has contribute differently of the organizational performance. Thus, all the significant paths are applicable to both firm sizes. At the same time, this result does not support H7.

Comparatively, this result does not concur with the study from Jayaram, Ahire, and Dreyfus (2010) and Hendrick and Singhal (2001), where they ind that there is a significant

difference in the relationship between TQM and organizational performance across different firm size.

6.2.5 Findings – Research Question Four

The research question RQ4 asked: "*Does the strength of the relationship between TQM practices and organizational performance change when the relationship is moderated by industry type? (i.e. manufacturing firms and service firms)*?". Referring to Table 5.11, when firm type was included, the moderating effect of TQM practices on organizational performance was found to be insignificant. The result has confirmed the applicability of TQM practices is valid in both manufacturing and service sectors of family owned and non-family owned firms in association with organizational performance. The finding coincides with an empirical work done by Prajogo (2005) on the association between TQM practices and quality performance among a sample of 194 managers of Australian manufacturing and services firms, whereby his finding has reported no significant difference between manufacturing and service firms in the relationship of TQM practices and quality performance. In response to the question, this finding reported that the strength of TQM and its relationship with organizational performance is not controlled by industry type. Such an insignificant effect of TQM on organizational performance in the presence of industry type implies that moderator has little or no explanatory power of dependent variable. Therefore, it is likely that TQM practices and not industry type explains organizational performance among the family owned and non-family owned firms in Malaysia. With this conclusion, H8 is not supported.

6.2.6 Findings – Research Question Five

Table 5.12 in Chapter 5 presents the PLS analysis between family owned and non-family owned firms, in relation to investigating the last research question: RQ5, "*Does the strength of relationship between TQM practices and organizational performance change when the relationship is moderated by firm's ownership (i.e. the family owned firms and non-family owned firms)?*". Firm's ownership as moderating variable was categorized into family owned and non-family owned firms. From the observation in Table 5.12, when firm's ownership was included, the moderating effect of TQM practices on organizational performance was found to be insignificant. The finding suggests that both family owned and non-family owned firms with the implementation of TQM practices equally enhance organizational performance, this further confirm TQM can be adopted by practitioners irrespective their ownership (i.e. family owned and non-family owned firms) which will yield similar results. Therefore, in response to the RQ5, the finding suggests that there is no significant difference between family owned and non-family owned firms in implementation of TQM practices. This conclusion also confirms H9 is not supported. This finding is especially significant as from the literature review, there is no such study concluded the same currently from all TQM research papers.

6.3 Research Contributions

The following subsections discussed on two implications from theoretical and managerial perspectives for family owned and non-family owned enterprises to improve organizational performance in association with implementation of TQM practices.

6.3.1 Theoretical Contributions

This study confirms that TQM practices do contributing to organizational performance. This has added one more literature to the management knowledge field of study. The

uniqueness of this study is four of the TQM practices supposedly contributing to the organizational performance did not turn out turn out to be as expected to be from the sample data collected. These unexpected findings are not totally new and confined to the current study as there are other prior research carried out by other renowned researchers found similar conclusion which were discussed in the prior paragraphs above. While most of the prior studies cited supported the four hypotheses before being tested with the collected data, this study has confirmed otherwise. This conclusion added to the unique theoretical contribution along with other studies that have proposed strategic planning, process management, human resource management and information and analysis have to be applied in the correct context and the research carried on them would need to be applied in the relevant sitation. Out of the six TQM practices two were found to be contributing to organizational performance, namely customer focus and leadership. These findings attested to the many studies that these two practices are essential to firm's performance regardless of firm size, industry and ownership as the results are not moderated by these three variables. In short, conclusion could be made that TQM practices are universal in nature and are suitable for all firms regardless of its size, industry type and ownership. The finding of both family owned and non-family owned firms are equally suitable for applying TQM practices for organizational performance is suggested to be new in the management knowledge literature that is confirmed in one single study like this should be the most noteworthy conclusion and theoretical contribution.

6.3.2 Practical Contributions

Looking from managerial perspective, the model has explored the TQM practices and its influence on organizational performance among the Malaysian family owned and non-family owned enterprises. The findings of this study offer useful insights on TQM effects on organizational performance of family and non-family owned enterprises to business

practitioners. From the statistical results, two components of TQM were reported to have positive relationships and significantly impacts on organizational performance whereby customer focus is found to have the strongest impact on organizational performance, followed by leadership.

Several implications from the managerial perspective will be very useful to family and non-family owned enterprises for practical purpose as evaluation tools on how effective of their current implementation of TQM practices in influencing the organizational performance. Firstly, in view of customer focus was reported to have the strongest relationship on organizational performance, efforts to improve organizational performance should focus on customer aspects. With customer orientation that is significantly related to organizational performance, managers of family and non-family owned enterprises should proactively seeking ways to satisfy customer's requirements and to promote customer loyalty in order to increase higher level of organizational performance.

Secondly, given that leadership was reported to be one of the TQM practices that has a significant relationship with organizational performance, top management leadership should proactively taking part to lead followers in motivating them towards achieving higher organization objectives.

Thirdly, TQM practices could be applied in all the firm's situations investigated in this research, nameless regardless of firm size, type of industry and firm's ownership. Managers could well apply TQM under such most circumstances if not all, especially regardless of ownership whether they owned by family or otherwise. This finding is especially important especially in the earlier chapters the contribution and importance of family owned business and its unique characteristics were discussed and acknowledged.

On the other hand, considering the impacts of strategic planning, process management, human resource management and information and analysis were found to be insignificantly

linked with organizational performance in this study, while human resource management has reported to have no significant impact on organizational performance, the result implied from this research that the development of people management was playing secondary role to improve performance. Since process management was reported to have no significant effects of TQM constructs on organizational performance, the role of process management emphasizes on process improvement that are linked with quality improvement in the maximization of quality performance could be re-looked into in and warrant a further study. The key strategies of process management as a preventative approach to reduce variation should always to be closely monitored by the practitioner managers. In other words, process control on preventing defects and reduction of cycle time should continually to be monitored for managing the entire process smoothly in order to improve an organization's performance. Furthermore, managers of operational processes should pay more attention to ensure efficient processes so as to facilitate performance improvement.

Given that strategic planning was reported to be insignificantly linked with organizational performance, planning efforts from upper-level management is suggested to develop strategic map on market focus, product differentiation with more customer focus in line with its positive relationship with organizational performance.

As information and analysis was also found to have non-significant relationship with organizational performance, sufficient data and sharing of information should be re-emphasized it is deemed to be a key element to support an organization's decision making in analysing performance on every improvement levels.

Based on the above research implications, practitioners and senior management who attempt to improve organizational performance through the implementation of TQM can gain some useful guides in this study. Similarly, the outcomes of this study also stressed the importance of two TQM practices which are customer focus and leadership to increase the

level of organizational performance regardless of firm type, whether it is from the manufacturing or service industry for practitioners of family and non-family owned firms, and firms from small or large sizes, TQM practices will be able to improve their organizational performance.

6.4 Limitations and Recommendations for Future Studies

In pursuing the answers for the research questions laid out, the process of identifying the research gap, research element, research instrument, research methodology and subject analysis were carried out. As an elementary researcher, the candidate is aware that there are limitations in the current study and listed down below the limitations even though they are non-exhaustive and also propose possible future studies to close the gaps.

6.4.1 Limitations of the Study

This study has achieved the proposed research objectives with successful completion of investigation, however there are several limitations which we shall address and discuss so that we are aware of the shortcoming and hence future study recommendations are being suggested. Firstly, this study is done only focusing on family owned and non-family owned enterprises in Malaysia which may be limited by its own unique culture and business environment, therefore the results findings should not be extrapolated and generalised into all communities.

Secondly, this study is based on quantitative method which is using a close-ended survey questionnaire for data collection whereby additional feedback that it not listed in the questionnaire design could not be captured.

Thirdly, as this study was carried out based on cross-sectional method of data collection without the times series data analysis this study could not pin point on the

root of causality. This research results may vary if it is repeated in the future as many exogenous factors could have change.

Fourth, although this study have examined the moderating effects of industry type, firm size and firm's ownership on six TQM practices towards organizational performance, other factors such as culture, gender of leadership, environmental characteristics, age of the firms and market competitiveness of sample firms may suggest for consideration in affecting organizational performance.

The last weakness in this study is the proposed research model limited to only six TQM practices adopted from MBNQA model, namely: leadership, strategic planning, human resource management, process management, customer focus and information and analysis to assess their influence on organizational performance of the Malaysian family and non-family owned enterprises.

6.4.2 Recommendation for Future Studies

To complement the current study, a more extensive research should be extended to a larger sample size in future study to include neighbouring countries such as Thailand, Singapore and Indonesia or from developed economies such as Japan and United States for comparison purpose to get a better understanding the extent of application of TQM in these regions with different culture and practices.

Future in-depth survey is also expected to include qualitative data by interviewing the respondents of family and non-family owned enterprises. Qualitative survey could solicit the respondents' views to explore more input and a more comprehensive understanding in salient issues which might not be covered in the close ended questionnaire survey in order to uncover issues that was not expected and build more robust analysis on the subject of the study.

In addition longitudinal approach to collect data over a period of time could be carried out so that a more in-depth study by having a better idea of its consistency and measurement of changes over time in order to improve the reliability and versatility of the study. With this the causal relationship could be more firmly established. .

Last but not least, research may be carried out by adopting other quality award models such as EQA and Deming Prize, or integrating Six Sigma with TQM to examine their different concepts, principles and practices in influencing organizational performance to obtain a more comprehensive knowledge of total quality management and performance improvement.

6.5 Conclusion

As a conclusion, the primary objective of this study is to explore the impact of TQM practices on organizational performance by emphasizing on family owned and non-family owned enterprises in Malaysia. The observations from the analysis of data in this study have identified two of the proposed TQM practices, namely: leadership, and customer focus are positively and significantly associated with improvement in organizational performance in the context of family and non-family owned enterprises in Malaysia. However, four out of the six practices of TQM, namely strategic planning, human resource management, process management and information and analysis were reported to have no significant effects on organizational performance and therefore requires further investigation. In addition, this study also provides evidence that firm size has no moderating effect on organizational performance Similarly, there were no moderating effect of firm ownership on organizational performance found in this study, it can be concluded there is no perceived difference in the firm ownership in relation to TQM measurement against organizational performance whereby both family

and non-family owned enterprises are showing the similar effect of TQM practices have upon organizational performance.

Drawing from past literatures we have acknowledged that an effective implementation of TQM is the key to improving organizational performance, this study provides some insights for business practitioners of family and non-family owned enterprises to adopt TQM in their business plans to improve their organizational performance in order to compete more effectively against other market players within their sectors. This study attempts to illustrate organizational performance dimensions from four perspectives, namely employee satisfaction, customer satisfaction, product quality and strategic business performance for the evaluation of TQM practices effect on organizational performance. The contribution of this study on developing a research model is to gather the views of family owned and non-family owned enterprises in Malaysia for the application of TQM practices towards an improvement of organizational performance.

In summary, it is undeniably that implementation of TQM among family owned and non-family owned enterprises is vital to boost their organizational performance as the study has achieved all the research objectives. Besides that, significant contributions from practical and managerial perspectives, research limitations and future research directions have also been drawn comprehensively in this last chapter of the thesis.

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APPENDIX I

Top 50 Richest Malaysian 2016 by Forbes Asia

Top	Top 50 Richest Malaysian 2016 by Forbes Asia			
	Names	USD b	Age	Industry
#1	Robert Kuok	10.00	92	palm oil/shipping/real estate
#2	Ananda Krishnan	74.00	78	telecom
#3	Quek Leng Chan	5.30	74	banking, real estate
#4	Teh Hong Piow	4.65	86	banking
#5	Lee Shin Cheng	4.60	77	palm oil, real estate
#6	Lim Kok Thay	4.55	64	casinos
#7	Yeoh Tiong Lay	2.25	86	construction, real estate
#8	Lau Cho Kun	1.55	81	palm oil/real estate
#9	Syed Mokhtar AlBukhary	1.45	64	diversified
#10	Surin Upatkoon	1.15	67	telecoms/lotteries/insurance
#11	Kuan Kam Hon	1.10	68	synthetic gloves
#12	Tiong Hiew King	1.00	81	timber/media
#13	Danny Tan Chee Sing	0.98	61	real estate
#14	G. Gnanalingam	0.95	71	ports
#15	Lee Oi Hian & Lee Hau Hian	0.92	-	palm oil/chemicals/real estate
#16	Desmond Lim Siew Choon	0.91	55	real estate
#17	Vincent Tan	0.90	64	diversified
#18	Jeffrey Cheah	0.87	71	real estate
#19	Yaw Teck Seng & Yaw Chee Ming	0.75	-	forestry
#20	Goh Peng Ooi	0.73	61	software
#21	Tan Heng Chew, Eng Soon & Eng Hwa	0.69	-	motor vehicles
#22	Lim Wee Chai	0.68	58	rubber gloves
#23	Chen Lip Keong	0.62	69	casinos
#24	Ahmayuddin bin Ahmad	0.58	59	ports
#25	Lim Kuang Sia	0.57	64	rubber gloves
#26	Lim Kang Hoo	0.55	62	real estate
#27	Shahril & Shahriman Shamsuddin	0.49	-	oil & gas
#28	Mokhzani Mahathir	0.48	55	oil & gas services
#29	Ngau Boon Keat	0.75	68	oil & gas
#30	Ninian Mogan Lourdenadin	0.47	62	real estate/retail
#31	Azman Hashim	0.47	77	banking
#32	Lim Teck Meng	0.35	79	Manufacturing
#33	Chong Chook Yew	0.34	93	real estate
#34	Kong Hon Kong	0.33	61	funeral services
#35	Leong Hoy Kum	0.30	59	real estate
#36	Ong Leong Huat	0.28	72	finance/real estate
#37	Loh Kian Chong	0.28	40	motor vehicles/palm oil

#38	Lim Han Weng	0.27	64	oil & gas
#39	Patrick Grove	0.26	41	e-commerce/media
#40	Wong Teek Son	0.26	55	health care
#41	Kua Sian Kooi	0.25	63	insurance
#42	Ibrahim Syed Azman	0.25	56	transport/motor vehicles
#43	Ling Chiong Ho	0.24	65	palm oil/ships
#44	Teong Teck Lean	0.24	56	courier services
#45	Tony Fernandes	0.23	52	airlines
#46	Kamarudin Meranun	0.23	55	airlines
#47	Tan Chin Nam	0.22	90	real estate
#48	Goh Siang	0.21	65	condoms
#49	Kong Chong Soon	0.20	74	real estate
#50	Lim Nyuk Sang	0.20	64	palm oil
Total wealth		129.81		
% of of Malaysia's GDP		38%		
Malaysia GDP, USD b as of Dec 2015		338		

APPENDIX II

Tobin's q is the ratio of the firm's market value to book value and is calculated as follows: ((common shares outstanding calendar year closing price)+(current liabilities − current assets)+(long term debt)+(the liquidating value of preferred stock)) divided by (total assets). (Source: Miller, Le Breton-Miller, & Scholnick, 2007)

APPENDIX III

UNIVERSITI TUNKU ABDUL RAHMAN
Wholly Owned by UTAR Education Foundation (Company No. 578227-M)

Faculty of Business and Finance
Jalan Universiti, Bandar Barat,
31900 Kampar, Perak Darul Ridzuan
Phone: 05-468 8888 Fax: 05-466 7407

To Whom It May Concern

20th June 2013

Dear Sir/Madam,

RE: Data Collection through Research Survey – Mr. Tan Boon In

Greetings from Faculty of Business and Finance, Universiti Tunku Abdul Rahman (UTAR), Kampar, Perak!

This is to confirm that Mr. Tan Boon In (Student ID: 10ABD07324) is currently pursuing his PhD in management study at UTAR.

His field of research is family owned business performance in Malaysia and total quality management (TQM). To complete his research, he needs to collect data for analysis and we would appreciate you fill up a short questionnaire which will not take longer than 20 minutes of your valuable time.

Please be assured that the data collected will be treated with academic ethics standard and it will be for the use of research purpose only. All response and answers will be kept confidential and will be analyzed in aggregated form. Your kind assistance in this survey is utmost important in helping us to improve the academic standard of the university where more research output is very much encouraged.

After filling in the questionnaire, please return to the sender or mail it back to us with the envelope provided. If you have any query, please call us at 05- 468 8888 or 012-2639 076.

Thank you very much for your kind assistance.

Yours faithfully,

Dr. Wong Kee Luen, EdD (Leicester)
Assistant Professor
Faculty of Business and Finance
Universiti Tunku Abdul Rahman
wongkl@utar.edu.my, 012-2639 076

TOTAL QUALITY MANAGEMENT ADOPTION AND PERFORMANCE: A SURVEY FROM MALAYSIA'S FAMILY OWNED ENTERPRISE

Survey Questionnaire

Objective:

The purpose of this survey is pertaining to your organization's Total Quality Management (TQM*) and its relationship with overall business performance. Please answer all questions to the best of your knowledge.

There are no right or wrong answers, only your opinion are sought. The information collected is used strictly for academic purpose only.

Instructions:

1) There are **FOUR** (**4**) sections in this questionnaire. Please answer ALL questions in ALL sections.
2) Completion of this form will take you approximately 20 minutes.
3) Please return the completed questionnaire to the sender with the envelope provider.

Thank you for your kind assistance.

Tan Boon In
PhD candidate, Faculty of Business and Finance
Universiti Tunku Abdul Rahman,
Kampar, Perak.
Mobile: 017-293 6773

**TQM – is defined as a set of systematic activities carried out by the entire organization to effectively and efficiently achieve the organization's objectives so as to provide products and services with a level of quality that satisfies customers, at the appropriate time and price.*

Section A: Demographic Profile

In this section, we are interested in your background in brief. Please tick (√) your answer and your answers will be kept strictly confidential.

QA1: Gender:

- ☐ Male
- ☐ Female

QA2: Age:

- ☐ Below 26 years old
- ☐ 26 - 30 years old
- ☐ 31 - 35 years old
- ☐ 36 - 40 years old
- ☐ Above 40 years old

QA3: Highest education completed:

- ☐ High school and below
- ☐ Diploma
- ☐ Bachelor Degree/Professional Qualification
- ☐ Postgraduate Degree

QA4: Length of time with your organization:

- ☐ Less than 2 years
- ☐ 2 - 5 years
- ☐ 6 - 10 years
- ☐ 11 - 20 years
- ☐ Above 20 years

QA5: Your job position:

- ☐ Non-executive
- ☐ Executive (e.g. Assistant Manager/System Analyst/Engineer etc)
- ☐ Manager/Head of Department
- ☐ General Manager/Director

QA6: Length of time with your current job position:

- ☐ Less than 2 years
- ☐ 2 - 5 years
- ☐ 6 - 10 years
- ☐ 11 - 20 years
- ☐ Above 20 years

Section B: Details of Company

In this section, we are interested in your company background in brief. Please tick (√) your answer and your answers will be kept strictly confidential.

QB1: Number of employees in your organization:

- ☐ Less than 50
- ☐ 51 - 200
- ☐ Above 200

QB2: Category of your organization's product or services:

- ☐ Manufacturing
  Please specify industry (e.g. electrical, electronics, food etc): _____
- ☐ Services
  Please specify industry (e.g. education, finance, logistics restaurants, construction, transport, property development etc):
  _____
- ☐ Other (please specify): _____

QB3: Status of your organization:

- ☐ ISO Certified
  If yes, how long has your organization been committed to the certification?
  Please specify: _____
  - ☐ Planning to ISO Certification
- ☐ Other quality certifications (please specify): _____
- ☐ Non-Certified by any organizations

QB4: My company is managed / controlled by:

a)

- ☐ Malaysian
- ☐ Foreign owned

b) My company is a:

- ☐ Family owned (privately owned or family owned and controlled even it is public listed)
  - ☐ Managed by owner(s) himself / herself
  - ☐ Managed by owner's children and / or family members
- ☐ Non-family owned (institutions or public owned or owned by a few equal shareholders without family influenced)

Note: A family managed / controlled company could be big or small. A public listed company can also be a family owned company so long as it is still managed or, controlled by the owner or owner's children or their family members.

Section C: Total Quality Management Practices

This section is seeking your opinion regarding the Total Quality Management (TQM) practices in your organization. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using 5-Likert scale. Please circle one answer to the each following statements.

1. Leadership

	Our top management:	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
LD1	Actively participates in quality management and improvement process.	1	2	3	4	5
LD2	Learns quality-related concepts and skills.	1	2	3	4	5
LD3	Strongly encourages employee involvement in quality management and improvement activities.	1	2	3	4	5
LD4	Empowers employees to solve quality problems.	1	2	3	4	5
LD5	Arranges adequate resources for employee education and training.	1	2	3	4	5

2. Strategic Planning

	Our organization:	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SP1	Has a mission statement which has been communicated throughout the company and is supported by our employees.	1	2	3	4	5
SP2	Has a comprehensive and structured planning process which regularly sets and reviews short and long-term goals.	1	2	3	4	5
SP3	Has an annual budget and involved all in the senior management.	1	2	3	4	5
SP4	Believes that strategic plans are linked to quality values.	1	2	3	4	5
SP5	Practices continuous quality improvement in planning process.	1	2	3	4	5

3. Customer Focus

	Our organizatoin:	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
CF1	Collects extensive complaint information from customers.	1	2	3	4	5
CF2	Treats quality-related customer complaints with top priority.	1	2	3	4	5
CF3	Conducts a customer satisfaction survey every year.	1	2	3	4	5
CF4	Always conducts market research in order to collect suggestions for improving our products.	1	2	3	4	5
CF5	Provides warranty on our products sold.	1	2	3	4	5

4. Human Resource Focus

	Our organization:	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
HR1	Has a company-wide training and development process for all our employees.	1	2	3	4	5
HR2	Regularly measure employee satisfaction formally.	1	2	3	4	5
HR3	Maintains a work environment that contributes to the health, safety and well-being of all employees.	1	2	3	4	5
HR4	Has compensations system that encourages team and individual contributions.	1	2	3	4	5
HR5	Has reward and recognition system that is based on task accomplishments and on work quality.	1	2	3	4	5

5. Process Management

	Our organization:	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
PM1	Employees work as team and guided by clear goals.	1	2	3	4	5
PM2	Employees are encouraged to develop new and innovative ways for better performance.	1	2	3	4	5
PM3	Has at least one product/service improvement in the past one year.	1	2	3	4	5
PM4	Has the ability to monitor all production/service process to improve quality.	1	2	3	4	5
PM5	Uses statistical process control to monitor production/service processes.	1	2	3	4	5

6. Information and Analysis

	Our organization:	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
IA1	Regularly reviews on organization's quality performance.	1	2	3	4	5
IA2	Analyzes all work processes and systems.	1	2	3	4	5
IA3	Has the key performance figures for analysis and decision making.	1	2	3	4	5
IA4	Conducts benchmarking on relative cost position.	1	2	3	4	5
IA5	Benchmarks against other firms' product quality and procedures.	1	2	3	4	5

Section D: Overall Business Performance

This section is seeking your opinion regarding the overall business performance firm. Please circle one answer to the each following statements.

1. Employee Satisfaction

	Our organization:	Extremely unsatisfied	unsatisfied	Neutral	Satisfied	Extremely satisfied
ES1	All in all, how satisfied are you with the work itself of your job?	1	2	3	4	5
ES2	All in all, how satisfied are you with your co-workers?	1	2	3	4	5
ES3	All in all, how satisfied are you with the supervision?	1	2	3	4	5
ES4	All in all, how satisfied are you with the promotional opportunities?	1	2	3	4	5
ES5	All in all, how satisfied are you with the compensation package?	1	2	3	4	5

2. Product Quality

	Compared with the other organizations within the same industry in Malaysia, please state the situation of your primary products/services:	Worst in the industry	Below average	Average	Above average	Best in the industry
PQ1	The performance of your company's primary products/services.	1	2	3	4	5
PQ2	The reliability of your company's primary products/services.	1	2	3	4	5
PQ3	The durability of your company's primary products/services.	1	2	3	4	5
PQ4	The defect rates of your company's primary products/services.	1	2	3	4	5
PQ5	The failure costs as a percentage of annual output value.	1	2	3	4	5

3. Customer Satisfaction

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
CS1	The customers are satisfied with our product quality.	1	2	3	4	5
CS2	The customer are satisfied with our service quality.	1	2	3	4	5
CS3	We have quite a number of loyal and repeat customers.	1	2	3	4	5
CS4	Customer satisfaction is an everyday priority in my company.	1	2	3	4	5
CS5	We strive to satisfy our customers.	1	2	3	4	5

4. Strategic Business Performance

Please circle one on the questions below:

SBP1	What was the approximate annual sales achieved by your firm in the last financial year? 1. Less than RM1.0 million 2. RM1.0 million - RM4.99 million 3. RM5.0 million - RM9.99 million 4. RM10.0 million - RM24.99 million 5. RM25.0 million or more

SBP2	Compared with the previous year, do you think your current annual sales: 1. Decreased a great deal 2. Decreased slightly 3. Stayed almost the same 4. Increased slightly 5. Increased a great deal
SBP3	Do you think your firm is: 1. Losing money badly 2. Losing money slightly 3. Breakingeven 4. Making some profits 5. Very profitable
SBP4	Compared with the firm that has the biggest local market share (regarded as 100%) within the same industry in Malaysia, what is the relative local market share of your products/services (please estimate your firm's output divided by the output of the biggest firm in the same sector in Malaysia)? 1. Less than 20% 2. 20% - 40% 3. 41% - 60% 4. 61% - 80% 5. More than 80%
SBP5	Approximately what percentage of total annual sales by value is exported? 1. 0% 2. 1% - 8% 3. 9% - 15% 4. 16% - 35% 5. More than 35%

Thank you for your time, opinions and comments.

~ The End ~

End of Thesis