RDU140333

EMPIRICAL ANALYSIS ON THE CRITICAL SUCCESS FACTOR FOR BENCHMARKING IMPLEMENTATION IN PALM OIL INDUSTRY

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RESEARCH VOTE NO:
RDU 140333

Fakulti Pengurusan Industri
Universiti Malaysia Pahang

2018

ACKNOWLEDGEMENT

Syukur and Alhamdullillah to Al Mighty ALLAH The Most Gracious and The Most Merciful and without His blessings and guidance this study would not been possible. First and foremost, I would like to express my sincere appreciation, gratitude and thanks to Universiti Malaysia Pahang, and more specifically Research and Innovation Department for giving us the trust through financial allocation for the RDU 140333.

To my dearest colleagues, their attention and support have been the driving force; gave us overall strength and confidence to complete this research. They are;

1. AHMAD NAZIF BIN NOOR KAMAR
2. SHAHRYAR SOROOSHIAN
3. SUZIYANA BINTI MAT DAHAN
4. HAMZAH BIN ZAINUDDIN

Thank you.

ABSTRACT

EMPIRICAL ANALYSIS ON THE CRITICAL SUCCESS FACTOR FOR BENCHMARKING IMPLEMENTATION IN PALM OIL INDUSTRY

(Keywords: Critical success factor, benchmarking, oil palm industry, perception, significance)

Palm oil industry is the backbone of Malaysian commodities market that contributed to the nation economic stability. In order to sustain and stay competitive, this industry needs to continuously improve its productivity and process efficiency. Benchmarking implementation can be used to identify operational, strategic gaps and to search for best practice that would reduce the gap. However, there are few empirical research conducted using benchmarking technique and obviously, there are no studies that clearly demonstrate the benchmarking critical success factors (CSFs) specifically for palm oil industry. Hence, the main objective of this study is to investigate the CSFs for palm oil industry benchmarking implementation. In this research, mixed method design was employed, which comprise of quantitative and qualitative approach. Pilot study and reliability test were conducted on the research instrument to ensure its validity and reliability. The final survey instrument was distributed via postal mail to 350 palm oil mill managers and 350 oil palm plantation managers in Malaysia and giving a response rate of 49%. Empirical data shows respondents have high perception on the benchmarking benefits towards development of this industry and the importance of practicing the CSFs in benchmarking implementation. However, the actual practice of CSFs is still at low. On overall, there is positive correlation between the eight identified benchmarking CSFs. Later, a qualitative study was conducted to explore benchmarking implementation in this industry by investigating the question on 'how does benchmarking give the impact to this industry performance'. Case study conducted in eight palm oil mills revealed that benchmarking implementation is still at an intermediate stage, incomplete benchmarking cycle and there is no comprehensive documentation system. Benchmarking implementation gives the benefit to the companies by enhancing company production and operation performance, improve the employee and customer satisfaction, accelerate the organizational prospects and subsequently improve the company financial management. It is hoped that the findings obtained from this research can be used as a guide for palm oil industry to obtain full benefits from the benchmarking initiative with optimal use of resources and avoid failure during implementation.

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ABSTRAK

ANALISIS EMPIRIKAL TENTANG FAKTOR KEJAYAAN KRITIKAL BAGI PELAKSANAAN PENANDAARASAN DI INDUSTRI KELAPA SAWIT

(Kata kunci: faktor kejayaan kritikal, penanda aras, industri kelapa sawit, persepsi, kepentingan)

Industri kelapa sawit merupakan tulang belakang bagi pasaran komoditi Malaysia yang menyumbang kepada kestabilan ekonomi negara. Untuk terus mapan dan berdaya saing, industri ini perlu terus meningkatkan produktiviti dan menambahbaik kecekapan proses. Pelaksanaan penandaarasan boleh digunakan bagi mengenalpasti jurang operasi, strategik dan mencari amalan terbaik bagi merapatkan jurang tersebut. Namun, tidak banyak kajian empirikal dijalankan menggunakan teknik penandarasan di dalam industri kelapa sawit. Jelasnya, tiada kajian yang menunjukkan secara jelas menunjukkan faktor kejayaan kritikal penandaarasan (CSFs) khusus untuk industri kelapa sawit. Objektif utama kajian ini ialah untuk mengkaji faktor kejayaan kritikal bagi pelaksanaan penandaarasan di industri kelapa sawit. Dalam kajian ini, rekabentuk kajian campuran digunakan, ia melibatkan kajian kuantitatif dan diikuti dengan kajian kualitatif. Ujian rintis dan ujian kebarangkalian telah dijalankan bagi memastikan tahap kesahan dan kebolehpercayaan setiap instrumen kajian yang digunakan. Borang kajiselidik telah diedarkan secara pos kepada 350 orang pengurus ladang dan 350 orang pengurus kilang kelapa sawit dan 49% maklumbalas diterima. Dapatan kajian kuantitatif menunjukkan pandangan responden terhadap faedah penandaarasan kepada perkembangan industri ini serta tahap kepentingan CSFs penandaarasan adalah tinggi. Namun, tahap pengamalan setiap CSFs penandaarasan di dalam organisasi mereka masih lagi rendah. Secara keseluruhan, terdapat korelasi positif di antara kesemua CSFs yang telah dikenalpasti. Seterusnya, kajian kualitatif dijalankan bagi mendalami perlaksanaan penandaarasan di dalam industri ini dengan merungkai persoalan ôbagaimanakah pelaksanaan penandaarasan memberi kesan kepada prestasi industri kelapa sawitô. Kajian kes yang telah dijalankan di lapan buah kilang kelapa sawit mendedahkan bahawa perlaksanaan penandaarasan yang dijalankan masih diperingkat pertengahan, kitaran penandaarasan masih tidak dipenuhi dan tiada sistem dokumentasi yang lengkap didapati. Kajian kes yang dijalankan di lapan kilang minyak sawit mendedahkan bahawa pelaksanaan penanda aras masih berada pada peringkat pertengahan, kitaran penanda aras tidak lengkap dan tidak ada sistem dokumentasi komprehensif. Pelaksanaan penandaarasan memberi manfaat kepada industri ini dengan meningkatkan prestasi pengeluaran dan operasi syarikat, meningkatkan kepuasan pekerja dan pelanggan, mempercepat prospek organisasi dan seterusnya meningkatkan pengurusan kewangan syarikat. Diharapkan penemuan yang diperoleh daripada penyelidikan ini dapat digunakan sebagai panduan kepada industri minyak kelapa sawit untuk mendapatkan manfaat penuh dari inisiatif penandaarasan dengan penggunaan sumber yang optimum dan mengelakkan kegagalan semasa pelaksanaan.

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LIST OF ABBREVIATIONS

CPO	*Crude Palm Oil*
CPKO	*Crude Palm Kernel Oil*
OER	*Oil Extraction Rate*
CEO	*Cheif Executive Officer*
CSFs	*Critical Success Factor*
MPOB	*Malaysian Palm Oil Board*
GLC	*Government Linked Company*

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The development of the country's palm oil industry can be regarded as a beneficial phenomenon to the stability of the country's economy. The industry started in the year 1960s with a total area of 55,000 hectares and only produces of 92,700 tonnes a year. This amount continues to increase up to the amount of exports palm oil products in 2011 were worth 24.3 million tonnes. Oil palm has been recognized by famous local and international scientist and food experts as the only regular consumed edible oils. This is because of its properties in helping prevent heart disease, no cholesterol and contains of rich vitamin E and beta carotene that become anti-cancer agent (Wahid et al., 2004). However, in order to stay exist, develop and grow, the local palm oil industry needs to have the ability to compete in terms of price and product quality (Drew 1997; Cassell et al. 2001; Chin et al. 2001; Deros et al. 2006).

Lee et al. (2006) beliefs that despite various sophisticated instruments engaged by multinational companies, benchmarking as one of the simplest tool has been proven for its effectiveness to improve performance in many areas. Nevertheless, like any other useful tools, the benchmarking needs to be deployed widely and institutionalized deeply to reach its full potential. In this study, Benchmarking is seen as the instrument that used by the organization to improve their operational and functional performance to be the surpass company by identifying and following the standard which is been determine from the evaluation of strength and weakness of the organization itself or based on the superior competitor performance.

In the early stages, the development of benchmarking emphasizing more on the activity and / or process orientation. However, now the scope of the benchmarking has changed into more broadly by taking into account the strategy and system (Yasin 2002; Garengo et al. 2005). In short, the benchmarking process involves measurement process, comparison, identification of performance gap between companies which conduct benchmarking and benchmarking companies and the execution improvement efforts to achieve a level of performance is comparable or better than benchmarked companies.

There are many studies proved the success of benchmarking implementation in improving product or service quality, reduce operating costs, strengthen the culture of continuous improvement, bridging the performance gap, triggering competitiveness and catalyst thinking increase creativity and innovation (Zairi 1994; Brah et al. 2000; Fuller 2000; Fernandez et al. 2001; Northcott & Llewellyn 2005; Wait & Nolte 2005; Southard & Parent 2007). However, many companies failed to obtain full benefit from benchmarking implementation, as this initiative is implemented in ad-hoc manner, without understanding the benchmarking concept properly, simply imitating the practice without trying to integrate it with the company's policies and environment and not get full support from top leaders (Simpson & Kondouli 2000; Salhieh & Singh 2003; Li-Hua 2007; Jain et al. 2008).

1.2 PROBLEM STATEMENT

Although Malaysia has a good position as a producer and palm oil exporters are ranked at a global level, but maintaining quality according to the standards set and the increase in production quantities need to be improved along with demand. As stated by Weng (2005) in his study, the biggest challenge for the agricultural industry is to continue increase yield per unit area to meet food demand world population. In addition, fierce competition with producer countries others are mainly Indonesia in terms of labor cost, the area planting, overall production costs and the production gap (Abdullah & Wahid 2010), being the main cause of this industry needs to continue improve, enhance and improve performance continuously. In efforts to achieve this desire, the enhancement and application of such quality culture good plantation management and manufacturing and quality system management ISO 9001 and ISO 14001 were conducted (Vermuelen & Goad 2006; Mccarthy & Zen 2010). However, the process of viewing, comparing and sharing the practice of the best company that is through the implementation of the benchmarking is more relevant and steady to ensure that these improvements are ongoing and beyond improving the performance of the Malaysian palm oil industry.

Benchmarking in the agricultural industry has been introduced by experts agricultural economics and highlighted by academics, consultants management of farms and farmers themselves (Jack 2009). Most benchmarking which has been conducted is based on comparative analysis of records financial accounting of farms with supplies and records farming (Wilson et al., 2005; Henning et al., 2011). From execution benchmarking, it is found that benchmarking provides opportunities to farmers see their position against competitors and

make the decision to improve their performance, especially financially. Furthermore, according to Ronan & Cleary (2000) by fixing the weaknesses existing, the Australian agricultural industry is able to stop the waste of resources and began practicing the best farming and narrowing the gaps competition. Obviously, benchmarking is not something new in the agricultural industry, but its implementation in the palm oil industry is an approach new. Lack of research literature and empirical data proving the effectiveness of benchmarking in the industry is a factor The main reason why the implementation of this technique has not been widely implemented in the industry oil palm Malaysia.

Furthermore, there are many studies carried out involving the use of benchmarking techniques at in various fields and industries such as manufacture (Ulusoy & Ikiz 2001; Meybodi 2006), medicine (Bullivant 1996; Guven-Uslu 2005; Vagnoni & Maran 2008), education (Weller 1996; Appleby et al., 2003; Mok 2005), banking (Vermeulen 2003; Hess & Francis 2004), construction (Mohamed 1996; Lam et al. 2004; Enshassi et al. 2007), tourism (Kyriakidou & Gore 2005; Hwang & Lockwood 2006; Lai & Yik 2008), communication and information technology (Alshawi et al. 2003; Boisvert & Caron 2006; Debnath & Shankar 2008) and so on. However, most of these studies conducted only look and take into account the 'hard' critical success factors by giving less attention to 'soft' critical success factors like getting support and commitment from top management, measuring and managing employee and customer satisfaction as well as integrating benchmarking in their strategic planning and corporate policies. In addition, there is lack of empirical research involving the benchmarking implementation in agriculture industry specifically palm oil industry. The benchmarking exercise is seen as relevant and possible tool to be used in identifying operational gaps, strategic and search for best practices to bridge the gap.

1.3 RESEARCH QUESTION

The research questions identified in this study are as follows: -

1. What are the critical success factors that affect the implementation of benchmarking in the palm oil industry?
2. How far the identified CSFôs being practiced in palm oil industry?
3. How benchmarking contribute to the palm oil industry in Malaysia?

1.4 RESEARCH OBJECTIVE

This research study has three main objectives: -

1. To determine the factors that influenced the successful of benchmarking implementation in palm oil industry
2. To investigate the extent of CSFs practices in palm oil industry benchmarking implementation
3. To analyse the impact of effectiveness of benchmarking CSFs practices towards the performance of palm oil companies

1.5 RESEARCH SCOPE

In order to achieve the stated objectives, the research scope for this study was developed and focused on three key areas. The scope of this study is limited to the palm oil industry in Malaysia only. Second, this study focuses only to a farm that produces Fresh Bunches (BTS) and a factory producing only Crude Palm Oil (MSM) extraction. Next, the third are the respondents and panel of experts involved in this study consisting of them experienced and directly involved in the palm oil industry as well as have knowledge about benchmarking techniques.

1.6 SIGNIFICANCE OF RESEARCH

The three main benefits contributed by this study are:

- Empirical data on the level of importance and practice of success factors critical benchmarking as well as obstacles encountered throughout the implementation benchmarking in the palm oil industry.
- Qualitative data on the stage of implementation of benchmarking, objectives implementation and measurement of the effectiveness of the benchmarking in in the palm oil industry.

1.7 STRUCTURE OF RESEARCH

This thesis contains five chapters. Chapter 1 provides background information research, problem statement, question of study, scope of study and contribution of research.

Chapter 2 provides information on background and industry the interests of the palm oil industry, and exposes benchmarking evolution, definition and types. In addition, this chapter also describes the critical success factors in the implementation of benchmarking

The methodology and procedure of the study are described in Chapter 3. This chapter describes in detail the approach, design, instrumentation, testing validity, data collection and data analysis for a mixed study that is quantitative and qualitative studies conducted.

Chapter 4 presents the results of the survey. It discusses on the statistical analysis conducted to achieved research objectives. Perceptions of respondents to benchmarking in general, importance and actual of benchmarking critical success factors.

Chapter 5 concludes the findings of all studies conducted and achievement of the objectives of this study. Next, this chapter also presents research contributions, some advanced research proposals, and the conclusions of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter begins with a review of the current status of the palm oil industry at Malaysia and the importance of this industry to the economy and countryôs industrial growth. Next, review and discussion on the activities involved in the palm oil industry is covered from cultivation up to processing of crude palm oil (CPO). Finally, this chapter discussed on the concept and definition of benchmarking. Based on the studies conducted by previous researchers, this chapter also reveal critical success factors that seen to greatly affect the success of benchmarking.

2.2 OVERVIEW OF PALM OIL INDUSTRY

Palm oil plays an important role in the global oil and fats business. At the beginning of the 20th century, palm oil was introduced at Malaysia. Palm oil was identified as an important plant since 1903 by the United Kingdom Department of Agriculture and commercially produced since 1917. If taking in 1903 as the starting point (Yee & Chandran 2004), the palm oil industry at Malaysia strongly contributes to the economic interests of more than 100 years. Palm oil is one of the most versatile vegetable oils, affordable and high quality vegetable oils in terms of taste and stability and this causes it to be widely used in the food industry (Dieffenbacher 1998). The use of global palm oil has increased by dramatically in the last decade and is expected to increase from now to 22.5 million tonnes per year to 40 million tonnes by 2020 (Croklaan 2004).

Now, it can be seen that palm oil has been used in more half of the supermarket products are in the package. Meanwhile, oil palm is the plant that produces only high output with less plantation area. Globally, only 5.3% of 241 million hectares of land for edible oil cultivation or 12.18 million acres of land used for planting oil palm, but planting oil palm is capable of producing 37% of world vegetable oil output (Darus et al. 2009; MPOC 2010d). Figure 2.1

show that palm oil produces 10 times more oil per unit than oil other oil-based plants. Much of the success of the crop market This is driven by good price prospects for a long time and this making palm oil more attractive than most other crops (Wahid et al. 2007b).

Malaysia is among the largest producers of palm oil with Malaysia exporting to several countries such as Russia, Ukraine, Yemen, China, India, United States and Pakistan (MPOC 2010b; MPOC 2010e; MPOC 2010d; MPOC 2010c; MPOC 2010a). Exports of palm oil consists of Palm Oil Raw and processed comprising refined Palm Oil, bleached and eliminated odor (RBD PO), RBD sterin and Olein raw (Build 2006). Basiron (2007) found that the growth of oil palm cultivation as well has led to a significant social phenomenon in rural communities which depends on farming as a source of employment and income. Dompok (2009) agrees with this statement, saying that the industry this provides employment opportunities to more than 500,000 people in farmland and the lives of one million people. Apart from government-linked companies and private estates, there are nearly 300,000 smallholders Their daily income depends on the increase in palm oil prices international.

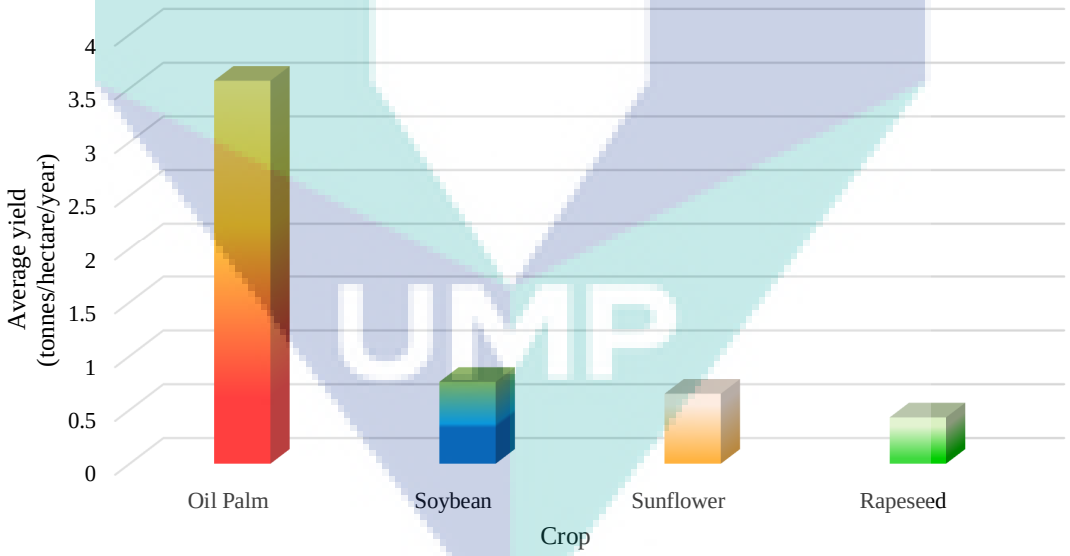

Figure 2.1: Comparison of Crop Productivity

There are two types of oils can be produced from the same fruit of Crude Palm Oil (CPM) extracted from meat or mesocarpa and oil part palm kernel from seed or in hard shell mesocarpa known as Crude Palm Kernel Oil (CPKO) (Basiron 2007). MSM and CPKO have

the difference in terms of composition of fatty acids and the period in which oil is collected during the development of oil palm fruit (Wahid et al., 2004). In effort to produce high yield and high quality fresh fruit bunches (BTS) and extraction of CPM, palm oil cultivation process must also be considered. This is is because the production of oil extraction rate (OER) is highly dependent on quality of BTS harvested (Wahid et al. 2007a). Figure 2.2 shows the process flow involved in the production of CPO.

Meanwhile, a summary of the activities involved in each stage of CPO production is shown in Table 2.1. Oil palm planting is preceded by preparation of the land, for that reason the identification of potential environmental and social impacts on the land must be assessed especially for primary or secondary forest and the land involves changes in the types of agricultural used (Hai, 2002). Besides that, land clearing must be carried out carefully and in stages to minimize erosion and to preserve top soil for optimum crop production yield (Sampoernaagro, 2006).

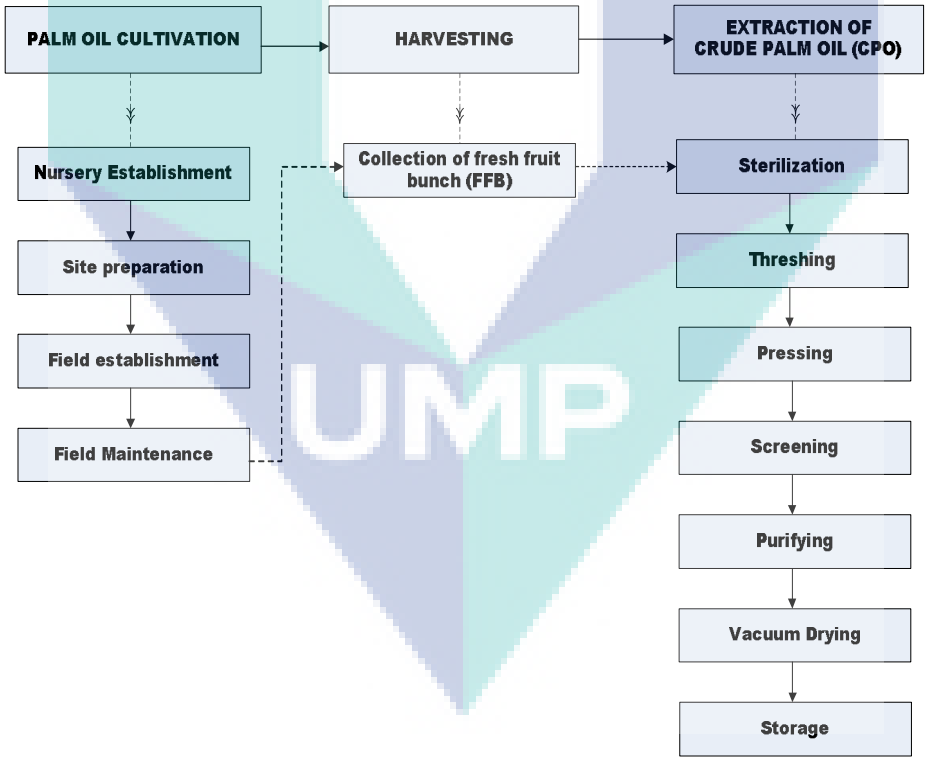

Figure 2.2: Production Process of CPO

Harvesting involves removing the ripe bunches, collecting and sending them to the mill for oil extraction. The harvesting rounds are organised throughout the year so that the same

palm is visited every 2 weeks ï during which the workers will harvest any ripe bunch using a chisel on a short pole, or a sickle on a longer pole for taller palms (Basiron, 2007). (Wahid et al. 2007a; Abas et al. 2011).

Table 2.1: Summary of Activities Involved in The Production of CPO

Stage	Activity	Description
CULTIVATION	Nursery establishment	Young palm oil plants are nurtured and raised in a polybag nursery for about 12 months.
	Site preparation	Land survey, clearing of existing vegetation, establishment of a road and field drainage system, soil conservation measures such as terracing, conservation bunds and silt pits and sowing of leguminous cover crops.
	Field establishment	Lining, holing and planting of polybag oil palm seedlings at density of 136 to 148 palms per hectare, depending on the soil type.
	Field maintenance	Weeding, water management, pruning, pest and disease management and manuring
HARVESTING	Collection of FFB	Collecting and grading the FFB
CPO EXTRACTION	Sterilization	Release Nut from Bunches
	Threshing	Separating Fruit lets from Bunches
	Pressing	Fruits are heated and continuously stirred to loosen the oil-bearing mesocarp from the nuts as well as to break open the oil cells present in the mesocarp. The digested mesocarp mash is then pressed, extracting the oil by means of screw presses.
	Screening	Separate crude oil from dirt
	Purifying	Remove dirt and moisture from CPO
	Vacuum drying	Drying the CPO
	Storage	Stored the dry oil before selling.

Source: Hi 2002; Poku 2002; Man et al. 2009

2.3 BACKGROUND OF BENCHMARKING

2.3.1 Evolution of Benchmarking

Interest in benchmarking has virtually exploded since 1950s when the benchmark or the standard used to measure business performance in terms of cost per capita sales and investment (Cook 1995). However, in the 1970s, Xerox Corporation is generally credited with

the first major benchmarking project (Mathaisel et al., 2004). At that time, Xerox had lost control market and receive pressure from its competitors in an attempt to gain back its market share, Xerox has decided to compare its operation and quality standards with his partner in Japan, Fuji-Xerox and learnt on how to improve design, production efficiency and reduce manufacturing costs for their machine (Elmuti & Kathawala 1997).

Figure 2.3 shows various stages in evolution to benchmarking. According to Maire et al. (2005) benchmarking passed four important stages of evolution. The first stage refers to the 'comparison' item. At first, most benchmarking practitioners only carry out performance measurement and conceptual activities This benchmarking is changing to getting best practices. As a result, performance comparison made with the benchmark company should be triggered the company to identify, understand and implement the practice best suited with the company's situation.

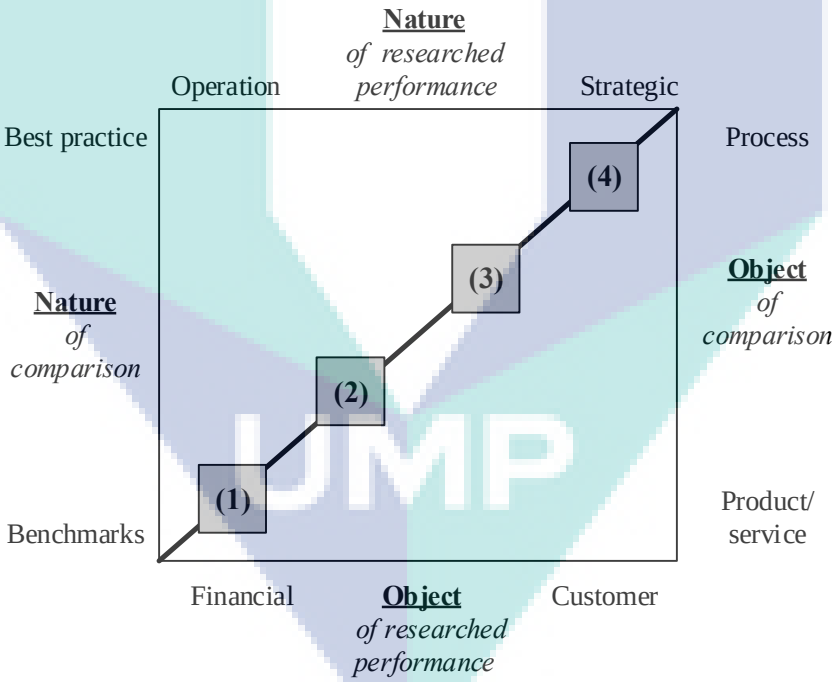

Figure 2.3: Benchmarking Evolution

Source: Maire et al. 2005

The second stage focuses on the 'comparison object' item. This stage shows a shift of evaluation of product / service performance to evaluation of process. At this stage, two or more companies do not just compare their performance, but they also analyze the process behind the

performance gap which exists between them and identify what improvements are necessary made and how to make these improvements (Garengo et al. 2005). Transformation of evaluation based on financial indicators towards an evaluation integrating measurement in connection with the satisfaction of the internal or external customers is shown in third stage. Fourth stage, present the passage of a comparative evaluation of process (operational benchmarking) to a comparative evaluation of strategies (strategic benchmarking). Yasin (2002) revealed that the benchmarking skills used become wider including strategies and systems.

2.3.2 Benchmarking Definition

Benchmarking definitions vary. According to benchmarking experts, Camp (1998), benchmarking is an industrial research process that allows managers to perform comparisons within companies from process and practice aspects to identify "best of the best" and achieve stage of excellence or competitive advantage. The main thing about benchmarking emphasized by Anand & Kodali (2008) is that the benchmarking a continuous analysis of strategies, functions, processes, products or services, performances, etc. compared within or between best-in-class organisations by obtaining information through appropriate data collection method, with the intention of assessing an organisationôs current standards and thereby carry out self-improvement by implementing changes to scale or exceed those standards. Kyro (2003) describes the definition benchmarking by looking at things that can be improved with benchmarking.

Benchmarking refers to assessing and improving an organization, unit or network performance, technology, process, efficiency and strategy by selecting the geographic scope through learning from its own unit, other organizations or networks identified have the best practices in each field as a competitor, operating in an industry group the same, or sectors in larger contexts with geographic scope selected. Benchmarking introduces to understanding where we are now, decide where companies need to be and develop plan and adapt to the organization (Guimaraes & Langley 1994; Hutton & Zairi 1994; Goncharuk & Monat 2009). Although there is various definition given by previous researches on benchmarking, but the essence of benchmarking is that they are used by the organization to continuously improve operational performance and function to be the best company by identifying and following the

standards determined from the assessment of the strengths and weaknesses of the organization itself and / or based on the superior competitor's performance.

2.3.3 Benchmarking Implementation Drivers

According to Axson (2003), a change is likely to be due to an event that triggered it, either from a process failure indicating the need for a change or an idea of an improvement arising from an informal discussion between the two CEOs on the golf course. In order to remain in a competitive market, many organizations seek to find alternative ways or tools to improve and excel in their business. Benchmarking is an essential basis for companies to maintain excellence at the forefront of the market (Wong & Wong, 2008).

Often, benchmarking begins as an extension of the existing quality management program. It is inevitable that the search for continuous improvement will lead to comparisons with competitors and benchmarking (Brah et al., 2000). Subsequently, the evidence of success from benchmarking practitioners, encouraged other companies to initiate a benchmarking process within their company. Benefits obtained from benchmarking can be categorized into four main groups; benchmarking is capable of creating improvements in organizational learning, acting as a performance gauge, developing a continuous improvement process and providing strategic tools for competitive and sustainability priorities.

Enhance Organizational learning

Benchmarking facilitates cross-organizational learning. It is an efficient vehicle for transferring ñlearningò across organizational boundaries (Watson, 1994). The experience and knowledge (i.e. system, practices and management) acquired from other organizations of which is benchmarked would assist the company to learn, grasp and translate them into the culture and mission orientation of their company. Otherwise, the team members in the company must struggle to gain the knowledge by themselves and define the appropriate methods to achieve their organization goals.

The benchmarking process fosters a new in-depth understanding by managers and employees of how organizations truly function. This makes the everyone in the organization more interested and motivated to contribute and shared their ideas within the team (Voss et al., 1997). Hereby, it will improve employee satisfaction through involvement and empowerment.

Besides that, benchmarking activities is helpful, encouraging a more strategic thinking helping to prioritize what needs to be done and avoiding the company from doing the senseless decision making (Jaques and Povey, 2007). In short, benchmarking performs an important role in facilitating the exchange and sharing of information across the organization. At the same time, benchmarking also develop the capability of employees to learn faster and react proactively towards any unforeseen circumstances (e.g. market needs).

Performance Measurement Tool

Benchmarking persistently make many organizations to look on their competitor process and worldôs best practice in all aspects of the business. Without that, they never realize their level of performance compared to their competitor, either they are at par, lacking or ahead.

Figure 2.4 shows the flow on how benchmarking acts as a tool in measuring the performance of organization. Benchmarking provides an assessment of how well of an organization performance against either their internal competitors, who are involved within the department or within their branch or external competitor that practice same process with them or best in class organization. By determines how the competitor achieved those performance levels, an organization maturity in change management can be assessed and quantitative performance goals is established (Watson, 1994). Voss et al., 1997 opined that benchmarking can also be used as a goal-setting process, an aid in setting performance objectives to achieve performance improvements. The information gained could be used as a basis for adaptive creativity and breakthrough change.

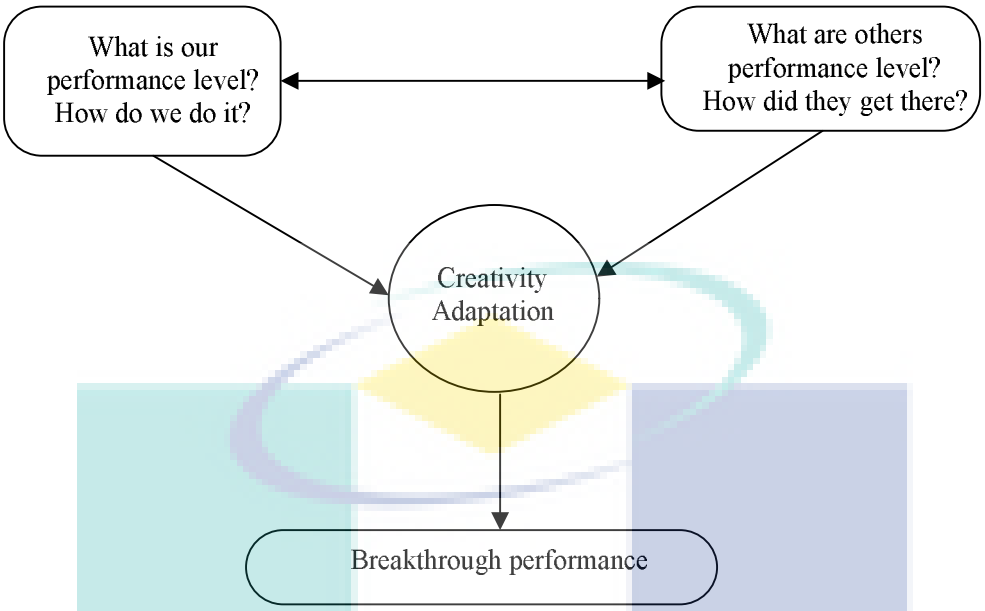

Figure 2.4: Performance Measurement

Source: Besterfield et al., 2003

Benchmarking was said to give organizations motivational targets, which the company can actively measure to gauge their improvement (Jaques and Povey, 2007). Benchmarking can provide senior management with a progress report and tracking the effectiveness of change initiatives over the long term. By engaging in multiple benchmarks and rebenchmarking, companies benefit from a synergistic effect. This is in part due to the cross-functional nature of the major general and administrative cost functions: finance, human resources, information technology and procurement.

Continuous Improvement and Development

In order to stay competitive, the employers and practitioners of benchmarking must be able to identify key indicators also called as critical success factors (CSFs). The CSFs defines as a collation of practices, activities and methods that must be considered and practiced to ensure competitive performance for the organization (Clarke and Manton, 1997). The link between organization mission and performance by means of CSFs, each department and group of individuals can then identify the measurements that can contribute to improve the deficiencies in the organization. For example, (Deros, 2004) identified top management leadership, systems and processes, creativity and innovation management, human resource management, policy and strategic planning, resources management and business results, customer satisfaction

management, employee satisfaction management, organizational culture and work environment as a key success factors in context of enhancing the effectiveness of benchmarking implementation in automotive manufacturing SMEs.

Formulating strategy in an attempt to continuously improve processes has lead to development of product innovation (Mathaisel et al., 2004, Poolton and Ismail, 2000). Furthermore, continuous Improvement helps the organization to focus on what they need to do today to promote success tomorrow (Fryer et al., 2007). As a result, implementation of benchmarking is very pertinent. According to (Jain et al., 2008), benchmarking is on-going process and used as continuous improvement tools to enhance the strength and eliminating the weakness of the organization. Analysis of gaps from baseline on an organization current performance level to the benchmark current performance level of the best in class companies helps in prioritizing resource allocation. Simply analyzing baseline and benchmark levels often helps an organization to review and improve its current process timely (Balm, 1996).

Strategic tools to gain competitive advantage and sustainability

Benchmarking is emerging in leading companies as an information tool to support continuous improvement and to gain competitive advantage. With the best practices identification, one can learn from otherso attempts to maintain systems and avoid non-value-added processes (Bhutta and Huq, 1999).

On the other hand, benchmarking also defined as a market research tool for strategic planning work processes and functions to build a competitive advantage that is more sustainable in today's fluctuating external environment (Ralston et al., 2001). A competitive advantage is an advantage over competitors gained by offering consumers greater value, either by means of higher quality and lower prices or by providing greater benefits and service that justifies higher prices.

2.3.4 Critical Success Factors (CSFs)

Critical success factors, CSFs are defined as the collection of practices, activities and methods to be considered and practiced properly to ensure the performance of an organization can flourish well (Clarke & Manton 1997; Dobbins & Donelly 1998; Somers & Nelson 2001). According to Fryer et al. (2007), it is important to define CSFs for benchmarking in the business

to increase success rates, reduce costs and avoid disappointment over the ongoing improvement program being undertaken. However, if the objective of a program or technique is not aligned together with the necessary CSFs, then the probability for the program to survive as desired and failed is high (Thiagarajan & Zairi 1998; Rungasamy et al. 2002). Therefore, these CSFs must always be monitored, maintained and maintained improved to ensure the success of an organization (Guimaraes & Langley 1994). Gadenne & Sharma (2009) classifies CSFs into two group. The first group involves aspects of behavior and is also known as a 'soft' factor. The second group emphasizes on the aspects of the system also known as 'hard' factor. According to Gadenne & Sharma (2009) both of these CSFs are complement to each other.

There is no specific literature study for CSFs in the benchmarking implementation at palm oil industry. However, through a comprehensive literature review, exploration against benchmarking CSFs is done by looking at previous studies which involves various fields and types of industries. Due to benchmarking is one of the techniques used in TQM, then CSFs for TQM because of its high equality with CSFs for benchmarking. Table 2.2 shows some categories of CSFs needed for implementation of benchmarking and Table 2.3 show definitions for each category.

The top management commitment and leadership is a crucial success factor in benchmarking implementation. According to Ubani (2011), the top management commitment must be offset and supported by knowledge and a deep understanding of this improvement effort. Integration between capability of planning and learning thinking leaders form a more systematic and empowering process of improvement the development of individual skills within the organization (Foster et al 1994; Pulat 1994). In fact, the behavior and patience of top management towards this endeavor will giving a clear message to the entire employee that benchmarking is one a valuable continuous process (Wang et al., 2011).

Additionally, Magd and Curry (2003) argue that communication over to bottom, bottom up and horizontal communication between top management and employees able to develop trust, confidence and achieve agreement on among all workers in an organization to achieve results required benchmarking. Provision of resources such as time, finance, the expertise and ease of accessing data also demonstrates seriousness of top management in the success of this benchmarking effort (Hinton et al. 2000; Salhieh & Singh 2003; France & Francis 2005).

Table 2.2: Description of Critical Success Factors

	CSFs	Description
F1	Top Management Commitment & Leadership	How the behavior and actions of the executive team and all other leaders inspire, support and promote a culture of business excellence as the best way to achieve the organisationôs objectives
F2	Human Resources Management	How the organisation manages its resources (financial resources, information resources, technological resources, material resources and fixed assets within the organization) effectively and efficiently
F3	Employee Satisfaction Management	What the organisation is achieving in relation to the satisfaction of its employees
F4	Policy & Strategic Planning	How the organisation formulates, deploys, reviews, turns policy and strategy into plans and actions
F5	Employee Participation	How the organisation releases the full potential of its people
F6	Customer Satisfaction Management	What the organisation is achieving in relation to the satisfaction of its external customers
F7	Process & Innovation Management	How the organisation identifies, manages, reviews and improves its processes
F8	Business Performance	What the organisation is achieving in relation to its planned objectives and in satisfying the needs and expectations of everyone with an interest or other stake in the organisation

(Source: Mann, 1988)

Obviously from Table 3.4 shows customer satisfaction management also considered to be a major factor in the success of benchmarking and also can serve as a performance indicator for an organization. Manning et al. (2008) states that customer satisfaction is determined by the difference between expectations and percepted performance. Requirements and feedback from customer is very important to know important information especially in determining the priority of improvements that need to be done (Medori & Steeple 2000; Grigoroudis et al. 2002). However, a systematic customer feedback system needs to be created which is not just become as a customerôs platform to convey their views and comments, but it also needs to be analysed and actions on the complaints submitted should be taken quickly (Maheshwari & Zhao 1994; Sinclair & Zairi 1995; Wickramasinghe 2012). A strong strategy in addressing customer satisfaction able to give a positive impact on improvement of customerôs loyalty (Al-Fawaeer et al., 2012).

Table 2.3: Critical Success Factors of Benchmarking

Researcher	Type of industry	Critical Success Factor							
		F1	F2	F3	F4	F5	F6	F7	F8
Guven-Uslu (2005)	Health	X			X	X			
Hwang and Lockwood (2006)	Tourism		X	X			X		
Kyriakidou and Gore (2005)	Tourism			X		X	X		
Sohal and Terziovski (2000)	Manufacturing	X		X	X	X	X		
Mohamed (1996)	Construction	X	X			X		X	
Brah *et al.* (2000)	Manufacturing & service	X	X			X			
Fuller (2000)	Health & safety							X	X
Meybodi (2009)	Manufacturing		X	X	X	X	X		X
Kowalski and Swanson (2006)	Communication	X		X		X		X	

Many studies have shown that involvement, participation and employee cooperation is needed to ensure the success of the benchmarking (Brah et al. 2000; Magd 2008). Employees are given space to contribute their view, assess those views and work in team to achieve organizational objectives. However, the involvement and support of employees on benchmarking implementation has a direct relationship with employee satisfaction (Lee et al., 2006). Therefore, the usage of employee satisfaction surveys able to provide feedback on the level of employeeôs satisfaction, enthusiasm and as a guidance to determine the success or problems with the company's overall corporate strategy (Mann 1998). In addition, Brah et al. (2000) emphasizes that employees need to be given adequate exposure and training before benchmarking is implemented.

This training aims to increase the employeeôs understanding on benchmarking, building confidence and skills required and develop the ability to interpret benchmarking results for the improvement of their organization performance (Kouzmin et al., 1999; Ubani 2011). When the employee has acquiring skills to do their job properly, failure can be reduced and they will be more seriously involved in the organization improvement initiative. However, training alone is not enough, more employees eager to make changes as required by the organization, when they are rewarded as recognition (Goncharuk & Monat 2009).

Without clear policy and strategic planning for benchmarking implementation among top management and staff became one of the failure factors in benchmarking implementation

(Guven-Uslu 2005). From the study conducted, Psomas & Fotopoulos (2010) found that having a clear vision and mission statement is very important for an organization to achieve performance improvement. Additionally, benchmarking efforts need to be supported by a system that is conducive to information sharing, formation of relationships, improve coordination and develop expertise in benchmarking team and its networking (Hong et al., 2012). Organization policy for benchmarking also needs more elastic, integral and easy to adapt in the current practice of the organization.

Good process management is the management that able to build creativity and employee innovation capabilities. The first thing seen is important for achieving this objective is the development of culture towards continuous quality improvement and the existence of a conducive working environment (Dec. 2004; 2006). Quality culture can be developed by making the transformation of communicate skills, leadership and only meet specifications to identification and problem solving and achievement of high quality standards (Khoo & Tan 2002; Al-Nofal et al. 2010). In addition, Hong et al (2012) found success benchmarking requires the integration of new technologies into existing processes for an organization. The new technology must be easy to customized, collaborative and easy to communicate with other systems. To monitor the success of benchmarking efforts made is by measuring business performance needs to be done. These performance measurements can be carried out either in terms of financial or non-monetary measurement. Most organizations are more tends to use financial performance as a measure of organizational performance they (Sousa et al., 2006). However, according to Medori & Steeple (2000), Non-monetary measurements have many advantages compared to financial measurement because of its more flexible features, more precise and consistent with goals and organizational strategies. Non-financial measurements give more focus on the needs of all stakeholders, including holderôs stocks, staff, customers, suppliers and communities (Mann 1998; Ittner et al. 2003).

2.4 SUMMARY

Based on the literature review discussed above, it clearly shows the importance of the oil palm industry to the national economic development. However, for the industry to remain viable and growing, systematic management systems whether at the plant and at the plant should be established and strengthened. Various systems, techniques and quality tools have been introduced for ensuring the above objectives are achieved. Among the quality

improvement techniques are seen relevant and can help the industry get a management system systematic is a benchmarking technique. However, to avoid internal failure implementation of benchmarking and achieving maximum benefit from it, a organizations need to first identify the critical factors that become the basis for the benchmarking of other successful of best organizations. Chapter 4 will expose and describe the methodology used for the study make this study successful.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter explains the method of research used in conduct this study. Each process involved and level of study is described in detail. This chapter begins with discussing approaches and designs the whole form of study on the mix study method. Subsequently, details of quantitative and qualitative approaches are discussed including sampling method, development of instrument of study, validity test, process data collection and data analysis.

3.2 APPROACH AND RESEARCH DESIGN

A systematic approach is crucial when designing a study as it will ensure the evidence obtained allows the researchers to answer questions as thoroughly as possible (Vaus 2004). According to Amaratunga et al. (2002), there are two categories of approach that are quantitative and qualitative, each have different characteristics.

The quantitative research approach is a research that emphasizes on objective phenomenon and controlled through data collection and analysis (Lee 1992). The main strength of this research approach is able to provide coverage widespread in various situations and the results can be obtained in short time and more economical (Mangan et al., 2004), especially when it involves statistically analysis from large samples. However, the approach this is not flexible, somewhat ineffective in understanding the process and less helps in generating theory (Amaratunga et al., 2002).

While qualitative studies are more emphasizing on the process and purpose to the topic to be studied. The method used in this approach are in-depth interview, focus group and observation. The use of small samples is recommended to get more meaningful information. In addition, qualitative approaches are able to provide more detailed information than quantitative approaches. It is also providing natural data collection. However, this approach

may involve long time, more resource needed to collect data as well as involve tough and complicated data analysis process (Amaratunga et al., 2002).

In summary, qualitative approach will usually solve the problem 'How' and 'why', while quantitative approach will identify 'how many' and 'how often'. Therefore, Malina et al. (2011) suggests utilization of mixed study approaches involving quantitative approaches and qualitative to get more comprehensive and meaningful research results. Additionally, this mixed approach is also associated with triangulation which proved to compensate for weaknesses and strengthened the strength of various combined approaches (Mangan et al., 2004). Based on the benefits offered, the research that will be conducted will adapt this mixed study approach. Flow chart for the entire process of this study shown in Figure 3.1.

There are three main phases in this study, the first phase involves collection of preliminary information of the study which is based on the other two phases. In this phase, library studies are deeply conducted to understand benchmarking concept and get an overview of the palm oil industry. In addition, several site visits to plantations and palm oil mill were conducted to get general information about this industry.

Subsequently, quantitative approaches are carried out in the second phase. The survey was chosen as a method and questionnaire was used as an instrument for this approach. The main objective of this approach is to identify the level of awareness and practice of benchmarking techniques inside palm oil industry. After the research survey instrument was developed, the pilot test of this instrument is carried out by obtaining views from benchmarking experts and pilot studies. Verification tests are carried out to ensure the survey instrument to be distributed covers and achieves the objective of the study, understandable and easy to answer by respondents. Reliability testing is carried out results obtained from pilot studies. After that, the survey instrument was distributed to 700 respondents from various levels of middle management in the field oil palm and palm oil mill.

The data obtained from this study were analyzed using SPSS software version 22 and analysis results are tabled and discussed in detail in Chapter 4. Furthermore, qualitative approaches are taken by selecting case studies as research method. A number of palm oil mill have been selected and as a respondent in this case study. Information obtained through observational investigations and semi-structured interviews conducted helps the author deepen

what is on the benchmark, why and how itôs implemented in case study companies. Field notes and transcripts interview data was collected, compared to conduct cross-case analysis and combined to clarify empirical findings and find new findings. Details of findings and discussion are presented at in Chapter 4.

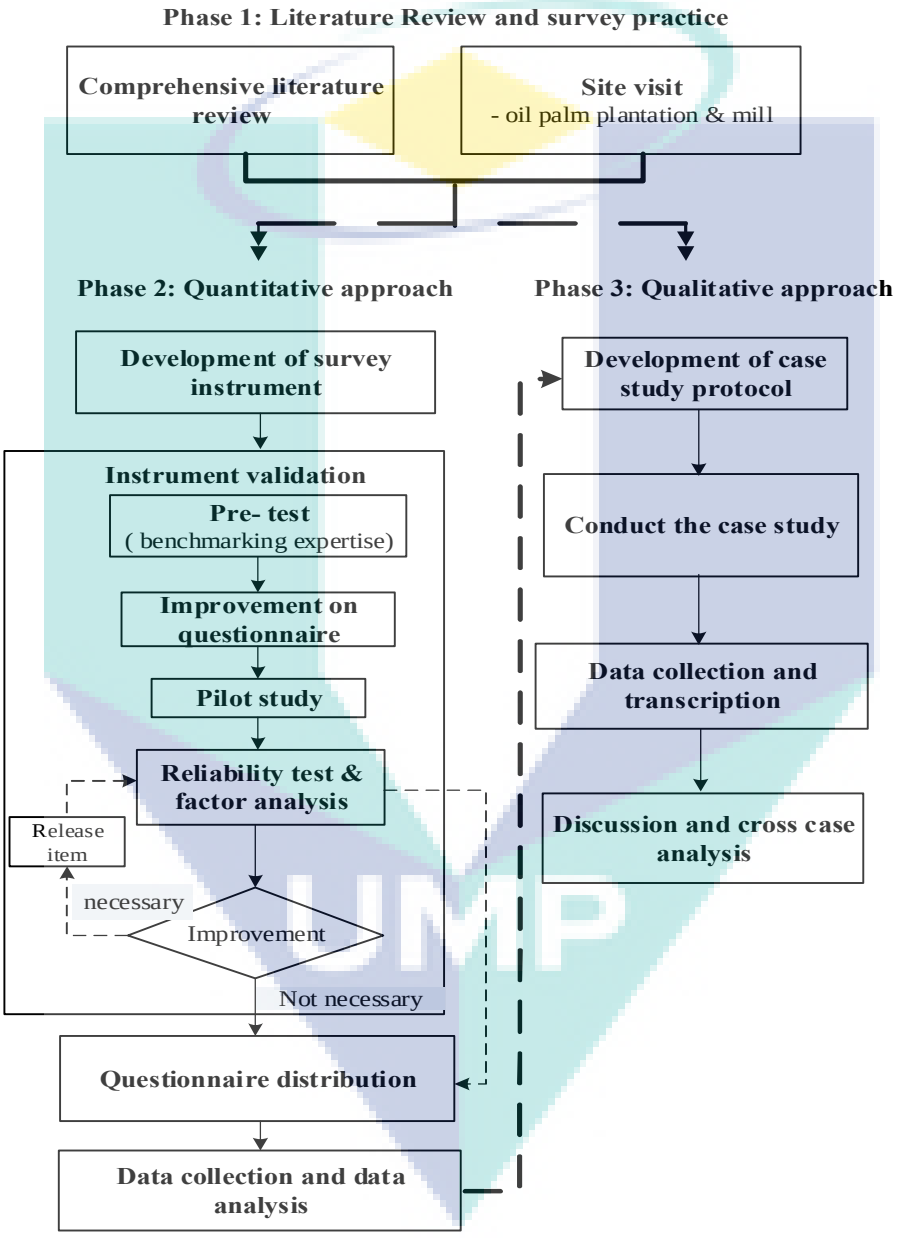

Figure 3.1: Research Flowchart

3.3 QUANTITATIVE APPROACH: SURVEY

Empirical data for the study was collected through a survey. Development of survey instrument should be carefully prepared to ensure no mistakes, desired data can be collected and achieve the research objectives. According to Janes (1999), most survey instruments are built with the use of weak words and confusing will result in unsatisfactory feedback.

3.3.1 Population and Sampling

Sampling method is a partial intake of a population as representing the population. Therefore, the amount of sample used must be sufficient in order to ensure their opinions can represent the research population. In this study, 350 oil palm plantations and 350 palm oil mills were selected as a sample for this survey. Information for the study population is obtained from the MPOB directory (MPOB 2009), direct information and web site of several oil palm companies in Malaysia. Those involved in the survey process consist of general managers, manager and executive plantation and palm oil mill. They are selected based on their direct involvement in the companyôs activities, making planning and decision and improving the company.

3.3.2 Survey Instrument Development

A survey instrument was developed with reference to the information obtained from intensive literature studies and site visits. The questionnaire was developed as a research instrument aimed to explore the level of awareness and level of benchmarking implementation in the palm oil industry. It is also used to investigate critical success factors for implementation benchmarking in the palm oil industry.

The survey questionnaire provided are self-administered surveys. Therefore, the designed survey questionnaire should have an interesting feature being a catalyst for respondents responding and not boring (Janes 1999). This survey questionnaire contains three sections that cover general information about respondents and organizations, respondents' opinions on benchmarking and factors affecting the implementation of benchmarking.

The first part consists of a combination of various types of survey questions such as dichotomy (Bhate 2007), multiple choice questions and question questions open. This section

provides information on respondents' and company profile The main goal is to find out their awareness of benchmarking and the stage of implementation of benchmarking in their organizations. Meanwhile, part 2 aims to examine the level of knowledge and understanding of respondents about benchmarking. The Likert scale has been used in sections two and three. For example, in section 3, scale; 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree, have been used. This scale is sufficient to announce all alternatives relevant to the field studied for respondents expressed their opinions.

Section 3 covers questions that will answer one of the questions a study that includes 53 questions for critical success factors in palm oil industry benchmarking implementation. In this part, respondents are required to determine the level of importance and level of practice These factors are on the Likert scale of six points, starting from "0 = do not know / not sure "to" 5 = very disagreeable. "The 'Importance' column indicates the stage importance / significant for each factor. The 'Practice' column to determine perceptions respondents on the practices of each factor within their organization.

3.3.3 Verification and Validation Test

Evaluation by benchmarking experts consist of academicians and practitioner and pilot studies have been conducted before actual surveys implemented. The main purpose of pre-test survey questionnaire is to ensure the questions presented are clear, understandable, reliable and validated. Proposal and the comments provided by the experts are used to improve the draft questionnaire. Overall, almost all the experts give positive comments and suggestions so that the number of questions is minimized according to the priority of the necessary information collected. As a result, this has led to a slight change over some parts of the survey questionnaire.

Factor analysis and reliability test were conducted to verify the question on benchmarking critical success factors. Factor analysis was conducted to determine the construct validity (development) of the research question. It is used to reduce a large number of variables to a smaller set of fundamental factors that formulate important information contained in the variables (Coakes et al., 2006). In this analysis, the draw method used is the principal component. In addition, Alpha Cronbach coefficients have also been used to determine the reliability of the survey instrument. This coefficient is used to determine internal consistency or reliability of survey or scale (Vilanova et al. 2006). Table 3.1 shows the results

of the factor analysis test results and reliability testing for the development of survey research instruments.

Table 3.1: Factor Analysis and Reliability Test Result

CSFs	No. of item	Factor loading	KMO	Eigen value	Varians (%)	Value(α)
F1 : Top management Commitment & Leadership	8	0.714 - 0.931	0.747	6.108	76.35	0.953
F2 : Human Resources Management	6	0.832 ï 0.959	0.829	4.770	79.51	0.938
F3 : Employee Satisfaction Management	7	0.878 ï 0.960	0.879	5.947	84.96	0.968
F4 : Policy & Strategic planning	8	0.845 ï 0.897	0.666	6.164	77.05	0.956
F5 : Employee Participation	7	0.820 ï 0.955	0.792	5.465	78.07	0.950
F6 : Customer Satisfaction Management	5	0.822 ï 0.971	0.829	4.028	80.56	0.928
F7 : Process and Innovation Management	5	0.859 ï 0.946	0.803	4.172	83.44	0.944
F8 : Business Performance	7	0.848 ï 0.941	0.821	5.846	83.52	0.960

From Table 3.1, clearly shows the adequacy of the measurement sampling (Kaiser-Meyer-Olkin, KMO) for all factors is between 0.666 and 0.879. This means that correlation patterns for all factors are good and solid (Ooi et al. 2007; Field 2009). All Eigen values exceed the values of 1.0 and the percentage variance explained for all factors is greater than 75%. All the factors studied have Alfa Crobanch coefficient greater than 0.9. As stated by George & Mallery (2007), if the alpha value Cronbach over 0.9 was excellent, exceeding 0.8 was good, exceeding 0.7 is accepted, exceeding 0.6 is questioned, exceeding 0.5 is weak and less than 0.5 is unacceptable.

Overall, no items were dropped due to the load of each factor involved close to each other and each item for all factors reflects the validity of the constructs of this instrument. The results of the analysis also show that overall factor has good internal consistency for each item in scale and showing all items positively contributes to reliability the entire survey instrument.

3.3.4 Questionnaire Distribution

After the amendment, modification and improvements are made on the draft of the research instrument, the final survey questionnaire (as in Appendix A) distributed to respondents. To overcome the problem of low feedback rate, support letter from Malaysian Palm Oil Board (MPOB) and top management of several oil palm companies is attached together with the invitation letter to joins surveys and survey questionnaire before being distributed to respondents.

After three weeks of the survey questionnaire distributed, as a reminder, follow-up calls were made to respondents who did not respond as well as to respondents who did not complete the survey questionnaire. Use of comprehensive data collection procedures such as tests pioneer, leaflet distribution introduces study topics, call memorials and incentives are among the techniques that have the potential to provide a high response (Tarnoff et al., 2008). In addition, it can increase that confidence that the findings obtained from the sample able to represent the general population.

3.3.5 Quantitative Data Analysis

The quantitative data obtained was analyzed using SPSS software version 17. All data is entered into the software database first. After that, descriptive analysis and several statistical tests are carried out on the data. Descriptive analysis such as frequency, percentage and cumulative percentage were conducted on data in each section in the survey questionnaire. Meanwhile, statistical analysis such as t-test, correlation analysis and ANOVA test were carried out on the data in part three of surveys. These tests are conducted to see the strength of the relationship each item and relationship of the items involved with company demographics and respondents.

3.4 QUALITATIVE APPROACH: CASE STUDY

Case study is the second approach used in this study. Various definitions are given to illustrate the meaning and content of case studies (Creswell 2002; Eckstein 2002; Yin 2003; VanWynsberghe & Khan 2007). In this study, case studies are conducted to deepen and refine the findings obtained from quantitative approach. Tayles et al. (2007) agree that post survey

need to be followed by an interview. It will give you valuable insights through further explanations, extensive reviews and confirm the results of the study. Besides that, case studies are able to meet three general principles of qualitative approach which are 'describeô, óunderstandô and óexplain'. This approach will answer the question of why and how the benchmarking is implemented. Therefore, the main purpose of the case study implemented are to uncover one major questions, namely the question of 'how benchmarking works to improve the company performance'.

3.4.1 Sampling

Careful selection and evaluation of the cases is important to increase the level of validity of research. Based on the criteria suggested by Crosthwaite et al. (1997), the selection of research companies is based on the readiness the company to engage, have a good combination of terms processes, humans, interactions and / or structures, can contribute to theoretical construction through implementation and is likely to obtain data quality and reliable. Thus, eight palm oil mill companies were selected to be involved in this case study. These companies are chosen because of the company's readiness and consent to be involved, ready to share information and materials on company operations and benchmarking implementation processes within their company and they have or are in business implementation of benchmarking.

3.4.2 Selection of Case Study Design

According to Yin (1994; 2003), case study design is an action plan for get information from "here" to "there", where "here" can be defined as the initial set of questions to be answered and "there" as some set of conclusions or answers to these questions. According to Zainal (2007), selection of design and sampling for case studies, whether case studies single or multiple case studies are subject to research and resource questions available.

In the context of this study, a multi case study involves several selected palm oil processing company. This is based on a review made by Santos et al. (2001) which says by conducting a series of case studies was able to reinforce the findings of the survey and improve the firmness analysis of the findings of the case study itself. Although, multiple case studies have the tendency to show repeated phenomena, but the findings can direct researchers to the

customization of pattern / pattern adjustment thereby developing, maintaining and enriching the theory (Tellis 1997; Perry 1998; Zivkovic 2012). In addition, Eisenhardt (1989) believes that less than four cases is inadequate as it is difficult to generate complex theory and strong empirical. Vice versa, by choosing more than ten cases will cause inner difficulty in handling complexity and large amounts of data.

3.4.3 Reliability and Validation Tests

Attention should be given throughout the case study process to ensure that case studies are conducted will run with high reliability and validity in terms of formation, internal and external. In summary, validity is focused to the value of data significance, while reliability is focused on the collection of data collected. Table 3.2 shows several tests is conducted to assess and improve the quality of a case study.

Table 3.2: Testing and Techniques for Validity and Reliability of Case Studies

Type of test	Purpose	Case study technique	Usage in study phase
Formation validity	To set the correct measurement for the concept being studied	Using various sources of evidence	Data collection
		Develop a chain of evidence	Data collection
		Obtain a review from the informers on a draft data collection case study report	Researcher's diary and report writing
Internal validity	To order to create a phenomenon in a credible way	Conduct analysis between cases, followed by the adaptation of cross-pattern	Data analysis
		Conducting explanations patterns	Data analysis
		Ensuring systematic internal affiliation for insights and concepts	Data analysis
External validity	To form a general decision for some of the broader theories	Using replication logic in various case studies	Research design
		Identify the scope and boundaries for a reasonable analytical generalization process	Research design
		Comparing evidence with the existing literature of research design	Data analysis
Reliability	To minimize errors and bias results in the study	Using case study protocols	Data collection
		Records data and builds databases	Data collection
		Revision from other research partners	Data analysis

Source: Adapted from Yin 1994; Kohn 1997; Riege 2003

3.4.4 Data Collection Techniques

Generally, there are three data collection techniques used in this case study is through semi structured interviews, direct observation and company documents. According Riege (2003), the design and use of tools or systematic data collection techniques and compilation of well-organized evidence capable of producing quality case studies.

Semi structured interviews are conducted to study and get in depth information on the implementation of the benchmarking includes practices, strategies, effectiveness and difficulty in implementation of benchmarking in case study companies. Prior to the interview session, an interview protocol as a case study instrument is developed. The development of the protocol of the interview should be carefully developed to reduce the likelihood of missing important data that needs to be studied, be a guide to authors and respondents and facilitate the process of data analysis.

At least one telephone call was made to the respondent and followed by a letter of application to formalize case studies to all case study company (refer to Appendix E). A call made is intended to obtain consent and permission to conduct case studies in their company. Subsequently, semi-structured interviews are conducted involving managers, assistant managers and executives who are involved directly and indirectly in benchmarking effort. All interviews are recorded with voice recorder to facilitate the process of interpreting data. According to Yin (1994) and Riege (2003), the use of interview protocols and recorders can improve reliability of case studies conducted and facilitate the interpretation process data.

Two more data collection techniques are used by authors, namely informal observation and supportive collection of evidence implementation of benchmarking in case study companies. During a plant visit, author observed on the behavior, working environment, target production display is recorded in the field note. In addition, readiness and respondent's consent to provide copies of evidence such as an audit report conducted and customer satisfaction surveys provide added value to this case studies. Data collection techniques used in this case study are sufficient. This is because, according to Perry (1998) the use of various evidence such as interviews, document and field notes can not only be avoided misinterpretation of the researchers, can even increase the validity of a formation case studies.

3.4.5 Qualitative Data Analysis

In this study, qualitative data analysis involves three main processes, namely transcription of interview data, data encoding as well as interpretation and conclusions. Each interviews are recorded and transcribed into the Microsoft Word. Collected data were subdivided and aligned to several important categories with its own label. Comparison or pattern adjustment is done between all the interview results for the interpretation process. Conclusion of findings made and supported by the informal findings discussed above.

3.5 SUMMARY

Exposure, description and discussion of each phase, approach, method and The instruments used are found in this chapter. Requirements to verify each study instrument needs to be taken into account before it is can be used to achieve the research objective effectively. In addition, a qualitative approach conducted is to explore the results of quantitative approaches. The next chapter will discuss the outcome of each of the above approaches.

CHAPTER 4

DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

Chapter 4 presents the results and discussion of the survey conducted in this study. Data analysis is carried out using several test from SPSS version 22 software for Windows. Discussion of the results of survey conducted is divided into several sections. This chapter starts with present about the profile of the company and the background of the respondents involved in this research. Next, to find out the status of consciousness and the extent to which the implementation of benchmarking in the palm oil industry and respondents' perceptions on benchmarking benefits. Meanwhile, to investigate the success factors critical in the implementation of benchmarking and constraints encountered by the palm oil company, some hypotheses have been developed and tested using some statistical analysis.

4.2 RESEARCH SURVEY TECHNIQUE

In this study, the survey questionnaire was distributed by post to the manager for 350 oil palm mills and 350 oil palm estates in Malaysia. To ensure a high percentage of feedback, the author has taken step by step with the support letter from the Palm Oil Board Malaysia (MPOB) and top management of several oil palm companies. This supporting letter is attached with an invitation letter to accompany the survey and questionnaires before being distributed to respondents. This support letter is also intended to provide awareness to respondents about the importance of this particular study on the improvement of the palm oil industry. Then encourage them to respond to the questionnaire distributed surveys. In addition, to get as much as possible response.

As a result, as much as 49% of responses is received; which is 163 from oil palm plantations and 180 palm oil mill. The percentage of these response is good and acceptable compared with other benchmarking studies such as Basnet et al. (2003) by 11%, Lee et al. (2006) of 27.2% and Meybodi (2006) 17%.

4.3 RESPONDENT'S BACKGROUND AND COMPANY PROFILE

This chapter describes the background of the respondents as a whole involving plantations and mills. Include the ownership type company, company age in the palm oil industry, quality system recognition, knowledge and exposure to the benchmarking system, year of initiative benchmarking implemented. General information about companies and respondents for the plantation and mills are presented separately for show the importance and interconnection of the two sectors within palm oil industry.

4.3.1 The Respondent Company's Profile

Figure 4.1 shows the age of the company, the plantation and palm oil mill involved in this research. The respondents' company age is divided into 3 categories namely plantations and mills under the age of 20 years, ranging from 20 to 30 years and above than 30 years. Obtained, more than 35% of respondents' estates and planters were aged between 20 to 30 years in the palm oil industry. There is 15 plantations and mills that do not provide information about the age of their company.

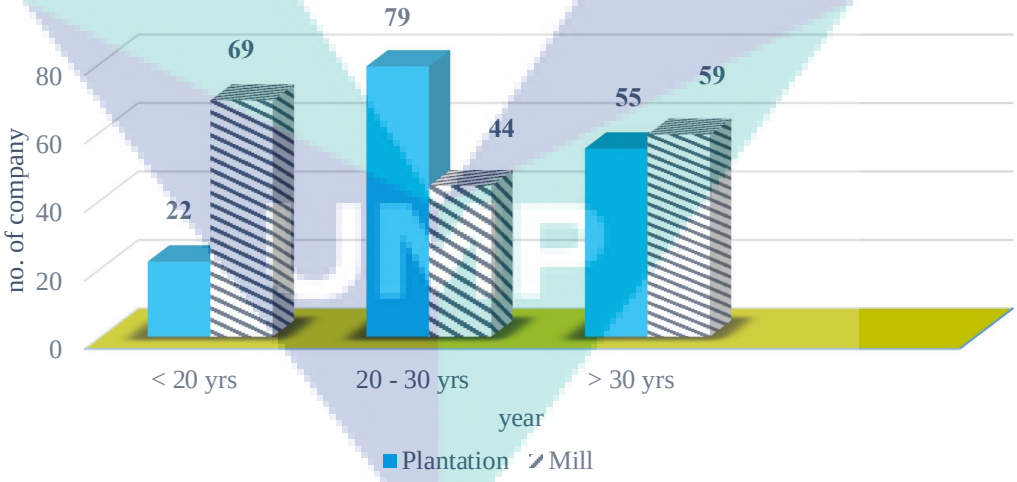

Figure 4.1: Company Age

In addition, Figure 4.2 shows the majority of respondent companies ie 54%, is a government-linked company (GLC) and the rest is a company private property.

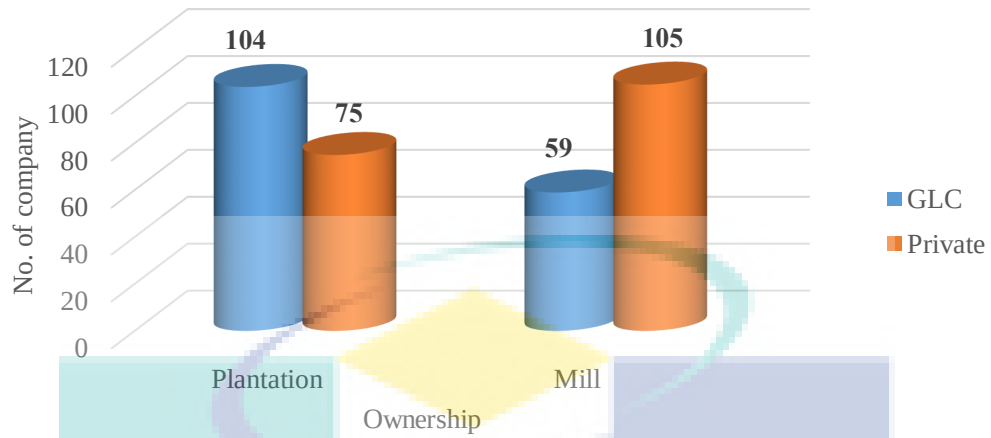

Figure 4.2: Company Ownership

As can be seen in Figure 4.3, there are several quality system certifications were certified by respondentôs plantation and mill company. Among the quality systems such as ISO 9001: 2008 in respect of quality management system, ISO 190011: 2002 is an environmental management system audit, ISO 22000: 2005 is about the food safety management system, OHSAS 18001 with occupational safety and health management system, ISO / IEC 17025 is a general requirement to be followed by testing and calibration labs and ISO 14001 is an environmental quality management system. Obviously, palm oil mill emphasizes on quality certifications compared to oil palm plantations. Obviously proved when nearly 67% of oil palm plantations have nothing quality certification.

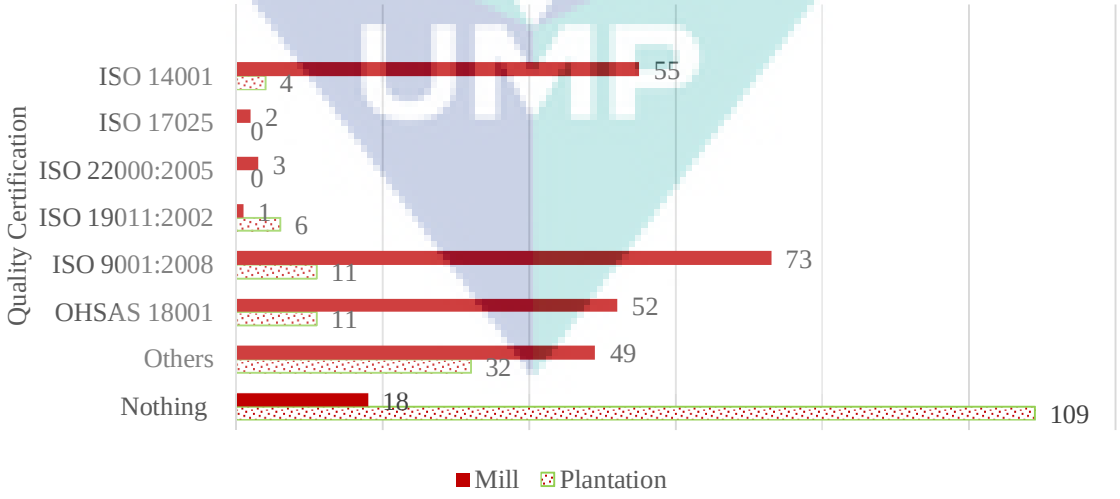

Figure 4.3: Company Quality Certification

4.3.2 Respondents' Background

This section presents the general information of respondents who are involved in this research. It will cover the posts of respondents involved as well as their duration of service in their respective company. Feedback for surveys received from respondents, consist of some of the middle management level as shown in Figure 4.4. As stated by Madu et al. (1996) in his study, mid management is suitable to become a respondent for the following reasons: -

- They are the ones who execute the matter decided by top management as well as intermediaries between top management and employees subordinate.
- They have the ability to understand the performance of the company and subordinate employees' responses to quality practices implemented.
- They are responsible for achieving the goals of the company by interpreting and implementing company strategies, facilitating improvements, creating an effective working environment, ensuring the company's operations running smoothly, forming teams and motivating his subordinates.
- They are capable of understanding the quality-related problems that may affect the performance of the company and able to provide the accurate information to provide feedback on this survey.

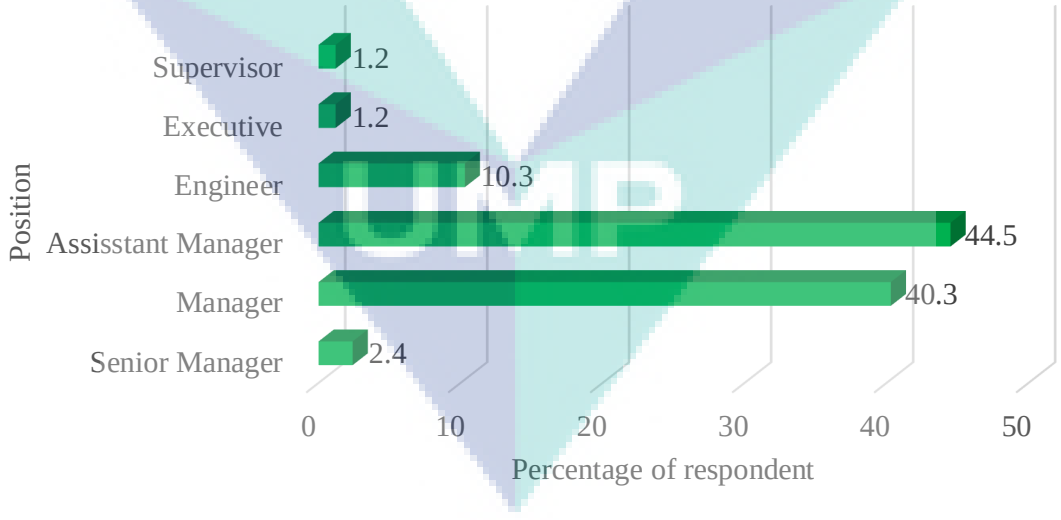

Figure 4.4: Respondents' Position

Table 4.1 shows the duration of respondents' services in the palm oil industry. The year of service of this respondent is divided into 3 groups; that is group 1 consists of respondents

with less than 10 experience year, group 2 consists of respondents with experience between 10 to 20 years and group 3 consists of respondents who have an experience over 20 years. It can be seen from Table 5.2, the majority of respondents from plantation with 45% having more than 20 experience year. Meanwhile, for the milling sector over 60% of respondents have experience less than 10 years. However, overall it is more of the 50% of respondents have more experience in the palm oil industry than 10 years. However, 47 respondents did not provide information regarding their service period in their sector. In short, the majority respondents involved have sufficient and knowledgeable experience on the palm oil industry.

Table 4.1: Respondents' Year of Services

Group	Year of Service	No. of respondent		
		Plantation	Mill	Total
1	Less than 10 years	47	97	144
2	Between 10 to 20 years	28	42	70
3	More than 20 years	62	20	82

4.4 LEVEL OF AWARENESS ON BENCHMARKING IMPLEMENTATION

With regard to knowledge of benchmarking, Figure 4.5 shows only 42% of respondents have early exposure and knowledge about benchmarking. This knowledge is available from seminars, conferences, workshops, training or media. For respondents who did not get exposure about benchmarking, they perform benchmarking techniques with the method 'Try to succeed' or 'follow up' from other companies that carry out this technique.

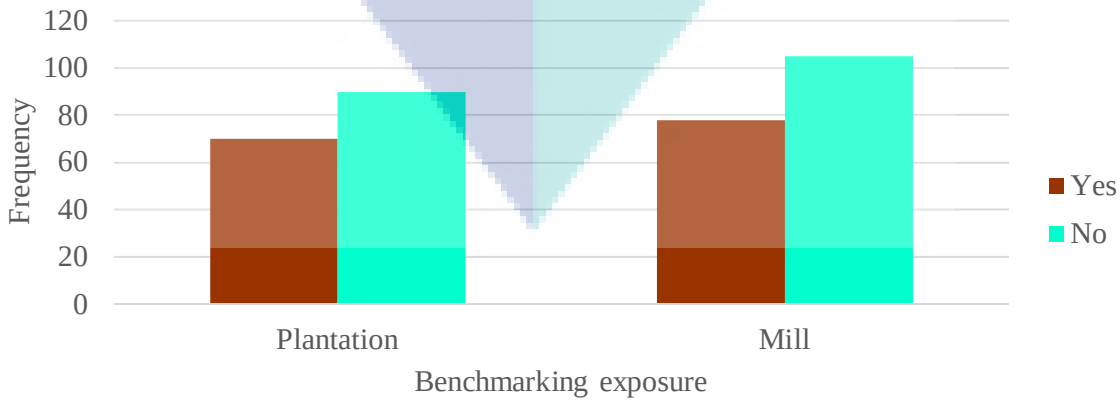

Figure 4.5: Exposure of Respondents to Benchmarking Techniques

Next, the respondents' view of the technique benchmarking was analyzed. This section is aimed to identify the respondents' knowledge and understanding on benchmarking in general. There are 17 general statement of the benchmarking are listed in section 2 of survey questionnaire. It covers the concept of benchmarking, the role of benchmarking in business improvements as well as matters that need to be addressed to implement benchmarking. In this section, respondents are asked to state the level agreement for each statement using the Likert scale from 0 to 5. Table 4.2 shows the mean score for each of these statements.

Table 4.2: Mean Score for Each Statement Related to Benchmarking

	Statement	MEAN
1.	Improve performance	4.24
2.	Improve creativity and innovation	4.26
3.	Raise awareness about current performance	4.16
4.	Learn from others	4.08
5.	Have greater involvement of staff	4.05
6.	Increase willingness to share solutions to common problems	4.05
7.	Better understand the óbig pictureô	3.97
8.	Identify weak areas that needs to be improve	3.91
9.	Create an atmosphere conducive to continuous improvement	3.88
10.	Challenge operational complacency	3.88
11.	Create a readiness for action	3.84
12.	Accelerate and manage change	3.82
13.	Understand world-class performance	3.81
14.	Do not make better-informed decisions	3.75
15.	Create greater openness about your strengths and weaknesses	3.67
16.	Have greater confidence in applying new approaches	3.66
17.	Gain a narrow perspective of the factors (or enablers) that facilitate implementation of good practices	3.63

Based on Table 4.2, it can be seen clearly that the majority of respondents agreed that benchmarking is capable of improving performance, identifying weaknesses and requirements for improvement, raising awareness of current performance, giving more good insights on the overall picture, improve creativity and innovation and increase readiness to share solutions to common problems.

However, the respondents did not deny the importance of other statements related to benchmarking. This is clearly illustrated in Table 5.4, when the mean score for other statements exceeding 3.5. Overall, respondents involved in this study have an understanding and sufficient knowledge regarding benchmarking and information obtained of them are trustworthy.

4.5 CRITICAL SUCCESS FACTORS (CSFs) FOR BENCHMARKING IMPLEMENTATION

The main purpose of this section is to discover the perception on the importance and the extent of practice of eight benchmarking CSFs in oil palm plantations and palm oil mills. The analysis was conducted using Paired comparison t-test to test the existence of the significance difference between importance and practice of CSFs.

4.5.1 Importance and Practice of CSFs in Oil Palm Plantations and Palm Oil Mills

Based on Table 4.3, it can be seen that there are significance differences in mean value of the importance and practice for all critical success factors in oil palm plantations. This is proven when the p-value generated is less than 0.05. According to the respondents, Customer Satisfaction Management (4.32), Process and Innovation Management (4.29) and Top Management Commitment and Leadership (4.28) are the three critical success factors that must be considered by oil palm plantations to ensure the success of benchmarking implementation. Meanwhile, Business Performance (4.01) is the highest factor that was practiced in oil palm plantation and the lowest factor practiced is Employee Satisfaction Management (3.48). However, the level of critical success factor practices is much lower than respondentsô perceptions of their importance.

Table 4.4 shows the results of a paired sample t test analysis for palm oil mill. Similarly, for the palm oil mill, there is a significance difference between CSFs mean value of the importance and actual practice with the p-value equal to 0.000. The respondents feel that in order to success in benchmarking implementation, all eight identified critical success factors should be given attention. Two CSFs that seen critical in benchmarking implementation are Customer Satisfaction Management and Top Management Commitment and Leadership.

Meanwhile, based on the overall mean value, the level of practices of all critical success factor in the palm oil mill is still at a moderate level of between 3.15 and 3.70. For palm oil mills, employee satisfaction management is seen as the most important factor less practiced.

Table 4.3: Paired Sample T- Test for Mean Importance and Practice for Oil Palm Plantations

CSFs	NO. OF ITEMS	OIL PALM PLANTATION			
		Importance (mean)	Practice (mean)	Diff. in mean	p-value
F1 : Top management Commitment & Leadership	8	4.28	3.77	0.515	*0.000
F2 : Human Resources Management	6	4.02	3.90	0.375	*0.000
F3 : Employee Satisfaction Management	7	3.95	3.48	0.474	*0.000
F4 : Policy & Strategic planning	8	4.17	3.66	0.513	*0.000
F5 : Employee Participation	7	4.21	3.70	0.510	*0.000
F6 : Customer Satisfaction Management	5	4.32	3.86	0.456	*0.000
F7 : Process and Innovation Management	6	4.29	3.92	0.375	*0.000
F8 : Business Performance	7	4.24	4.01	0.231	*0.000

Notes: N = 163 oil palm plantations
* Significant at level $p < 0.05$

Table 4.4: Paired Sample T- Test for Mean Importance and Practice for Palm Oil Mill

CSFs	NO. OF ITEMS	PALM OIL MILL			
		Importance (mean)	Practice (mean)	Diff. in mean	p-value
F1 : Top management Commitment & Leadership	8	4.14	3.51	0.635	*0.000
F2 : Human Resources Management	6	3.84	3.23	0.607	*0.000
F3 : Employee Satisfaction Management	7	3.86	3.15	0.711	*0.000
F4 : Policy & Strategic planning	8	3.96	3.34	0.626	*0.000
F5 : Employee Participation	7	3.98	3.29	0.691	*0.000
F6 : Customer Satisfaction Management	5	4.15	3.70	0.450	*0.000
F7 : Process and Innovation Management	6	4.02	3.44	0.578	*0.000
F8 : Business Performance	7	4.02	3.59	0.433	*0.000

Notes: N = 180 palm oil mills
* Significant at level $p < 0.05$

However, the respondents may have full awareness on all critical success factors of benchmarking implementation but they failed to fully practice it in their organization. For both; oil palm plantation and palm oil mill, there are large difference in mean value of the importance

and actual practice appear for Top management involvement and leadership and Employee participation benchmarking CSFs. Lack of readiness of top management to harmonize the benchmarking in organizationôs policy and strategic planning may lead to existence of these gap. The desires to learn, openness, build a sense of urgency and awareness to adopt new initiatives must come from top management. As stated by Seetharaman et al. (2006), with a clear line of responsibility and command running up to an accountable individual at the top of the management and reviewing quality improvement is another method of showing management commitment. In the meantime, the absence of readiness to change or the change occurs rapidly may create the anxiety to the employees to fully participate in benchmarking implementation (Mahmud et. al., 2012).

4.5.2 The Correlation Between Mean Values of Practice for Each CSFs

This section aims to explore the relationship in the practice of each CSFs in oil palm plantations and palm oil mills. The result of correlation analysis presented in *Table 6* has shown that there is positive correlation among each benchmarking CSFs practices in oil palm plantation. As tabulated in Table 4.5, the three highest correlations of CSFs practices in oil palm plantation are between Human Resources Management and Employee Satisfaction Management (0.828), Top management Commitment & Leadership and Human Resources Management (0.739) and Top Management Commitment & Leadership and Employee Satisfaction (0.731). The cooperation and coordination between management and employee should be developed and cultivated because it is crucial for effective and efficient functioning of an organization and for continuous improvement, which is in-line with the finding by Majumder (2012).

Table 4.6 shows that there is significant correlation between all practicing benchmarking CSFs in palm oil mill. Undoubtedly, almost all CSFs are strongly positive correlated to each otherôs. Therefore, H4 was rejected. This shows that there is a complex interrelationship between all eight CSFs for palm oil mills, especially for Policy and Strategic Planning and Employee Participant (0.857).

Table 4.5: Correlation of 8 CSFs Practices in Oil Palm Plantation

CSF	Mean	F1	F2	F3	F4	F5	F6	F7	F8
F1	3.7646	1	0.739**	0.731**	0.384**	0.580**	0.619**	0.528**	0.558**
F2	3.6503		1	0.828**	0.525**	0.600**	0.584**	0.609**	0.599**
F3	3.5372			1	0.331**	0.620**	0.596**	0.557**	0.534**
F4	3.5706				1	0.288**	0.284**	0.357**	0.385**
F5	3.6968					1	0.730**	0.700**	0.653**
F6	3.8650						1	0.644**	0.674**
F7	3.9172							1	0.730**
F8	4.0096								1

Notes: N = 163 plantations
**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.6: Correlation of 8 CSFs Practices in Palm Oil Mill

CSF	Mean	F1	F2	F3	F4	F5	F6	F7	F8
F1	3.5049	1	0.607**	0.733**	0.619**	0.574**	0.437**	0.581**	0.480**
F2	3.2306		1	0.711**	0.734**	0.703**	0.564**	0.649**	0.577**
F3	3.1046			1	0.720**	0.709**	0.398**	0.563**	0.520**
F4	3.3389				1	0.857**	0.657**	0.764**	0.740**
F5	3.2905					1	0.639**	0.789**	0.751**
F6	3.6989						1	0.693**	0.694**
F7	3.4389							1	0.726**
F8	3.5937								1

Notes: N = 180 mills
**. Correlation is significant at the 0.01 level (2-tailed).

4.6 CASE STUDY OBJECTIVES AND METHODS

The case studies were conducted in order to understand in depth the how the benchmarking implemented can contribute to the company performance. This case study provides a qualitative decision that outlines the results quantitative data obtained in the survey. As revealed by Shi and Bennett (2001) in their study of some other studies stated that a combination of surveys and some case studies in research conducted, able to improve and enrich the findings. In this case study, eight of the palm oil mills were selected to be conducted an in-depth interview.

The main aspect seen in the selection of case study companies is based on their willingness to participate in this case study and involvement as well as their experience in benchmarking. However, only the palm oil mill was chosen as the respondent for this case study based on the level of palm oil mill involvement in the benchmarking implementation is higher compared to oil palm plantation. Small sample selection from various palm oil mill companies and face-to-face interactions conducted is believe to give the whole picture of benchmarking implementation in palm oil industry.

Before the case study was conducted at the selected companies, the author was contacted the company for the purpose of obtaining permission and cooperation to conduct the case study at their company. Next, the official letter visits were sent to the selected company. The details of the study such as study aims carried out, the required information and data and why the information needed to be explained clearly when contacted by phone and stated in the official letter. Semi structured interview protocol has been developed to facilitate the interview process and ensure all the exact information obtained for this study. According to Merriem (1998), semi-structured interview is a combination of full structured interviews and interviews free, more flexible and more space for respondents describe on what he thinks and develops his opinions.

The same interview protocol is used for each company to enhance the reliability of interview instruments and obtain the correct and real data. In addition, the use of various data collection techniques such as observation, in-depth interviews and document research contribute to applications of triangulation process and thereby strengthening the data acquisition (Ali et al., 2005 Ikhsan 2011). Overall, every interview takes almost two hours for each respondent. Before the interview was conducted, the author first explains on how the interview will be conducted and get permission to record an interview session. The author has recorded and transcribe every interview conducted manually.

Respondents involved in this case study comprised of important staff who are leads the company process and directly involved in the companyôs improvements process and benchmarking. Summary of respondentsô background data is shown in Table 4.7.

During interviews session, respondents were asked to tell about the benchmarking process that has been implemented and impact of benchmarking implementation to their

company. In order to fulfill the interview protocol and to preserve the confidentiality of the company, the name of the company involved in the case study will only be represented by the letter A up to H only. Table 4.8 shows a summary of the background information of companies involved in the case study.

Table 4.7: Profile of Respondents for Case Studies

Company	Position	Working experience in palm oil industry
A	Manager	25
B	Assisstent Manager	8
C	Manager	17
D	Manager	12
	Assisstent Manager	7
E	Manager	25
F	Manager	21
	Assisstent Manager	5
G	Manager	23
	Assisstent Manager	3
H	Manager	20

Table 4.8: Case Study Company Background

Company	Establishment Year	Ownership type	Capacity (mt/hr)	Category	Quality System Certification
A	1976	Private	40	Medium	-
B	1978	GLC	40-60	Medium	ISO 9001:2008, ISO 14001 & OHSAS 18001
C	2004	GLC	60	Medium	ISO 9001:2008
D	1986	GLC	54	Medium	ISO 9001:2008, ISO 14001 & OHSAS 18001
E	1996	Private	> 60	Large	-
F	1998	Private	40	Medium	ISO 9001:2008, ISO 14001 & OHSAS 18001
G	1998	GLC	30	Small	ISO 9001:2008 & ISO 14001
H	2006	Private	50	Medium	-

4.6.1 Impact and Measurement of the Effectiveness of Benchmarking

The benchmarking implementation help to improve status and improve the performance of their respective companies in various aspects. In this study, the effect of successful benchmarking is divided into four main categories. The categories are production and operation performance, level of motivation and management, organizational prospects and financial management. These four categories of impact impacts are also being used to measure the effectiveness of benchmarking implementation within their company. Table 4.9 shows a summary of impact of the benchmarking implementation on the eight companies involved in the case study.

Table 4.9: Impact of Benchmarking on The Case Study Company

Benchmarking impact		Company							
		A	B	C	D	E	F	G	H
Production & Operation Performance	Production performance	✓	✓	✓	✓	✓	✓		✓
	Loss in production	✓	✓	✓	✓	✓	✓	✓	✓
	Flexibility in the process		✓			✓	✓		
	Operating efficiency	✓	✓	✓	✓	✓	✓	✓	✓
	Product quality	✓	✓	✓	✓	✓	✓	✓	✓
Motivational & Mananagement	Make better decisions	✓	✓	✓	✓	✓	✓	✓	✓
	Human resource	✓		✓			✓	✓	
	Employee satisfaction		✓	✓			✓	✓	
	Customer satisfaction	✓	✓	✓	✓	✓	✓	✓	✓
	Employee skills	✓	✓	✓	✓	✓	✓	✓	✓
	Worker experience	✓			✓			✓	
	Work environment		✓		✓		✓	✓	✓
Company Prospect	Information gains are faster	✓	✓	✓	✓		✓		✓
	Competitive environment	✓	✓	✓	✓	✓	✓	✓	✓
	Towards innovative	✓	✓		✓		✓	✓	
	Company R & D	✓	✓	✓	✓	✓	✓	✓	✓
	Business process	✓	✓				✓	✓	✓
Financial Management	Financial performance	✓	✓	✓	✓	✓	✓	✓	✓
	Operation cost	✓	✓	✓	✓	✓	✓	✓	✓
	Company's profit	✓	✓	✓	✓	✓	✓	✓	✓
	Annual sales proceeds	✓	✓	✓	✓	✓	✓	✓	✓
	Maintenance cost		✓		✓		✓	✓	

Based on Table 4.9, almost all the elements in the four categories of benchmarking impact give the effects on three companies case study which is company B, company F and Company G. This shows that the benchmarking exercise contributes substantially to the process enhancement and overall performance of the company. Authors believe good results of the

benchmarking implementation will motivate the company to continuously improve their company.

There are several elements from four impact categories of benchmarking impacts give the impact to all case study companies. All case study companies agreed that as a result of the benchmarking implementation, in terms of production and operating performance, the company able to improve production performance successfully, reduce the production, improve their operational efficiency and product quality. Meanwhile, from the motivational and management category, benchmarking helps the companies make better decisions as well as increase customer satisfaction and employee skills. Related to category of company prospects, successful benchmarking implementation competitive environment and increase the company's R & D. All case study companies agreed that the benchmarking implementation has a positive impact on the financial management of their company.

Overall, based on interviews conducted, most respondents said that the company not only managed to achieve the objective of benchmarking implementation, and even getting a lot of side benefits from benchmarking implementation. For example, the goal of benchmarking implementation for company D is to carry out improvements in plant cheerful system. As a result, company D produces workplace environment clean. At the same time, it can improve performance and quality product production, increase customer satisfaction and subsequently achieve better financial performance. In addition, the impact obtained from benchmarking implementation is also become a parameter to indicate the success of benchmarking implementation at their company. Finally, the author also believed in the benefits obtained from benchmarking this makes the case study companies more motivated to carry out continuous improvement within their company and stay competitive in the palm oil industry in particular and in other industries generally.

4.7 SUMMARY

Chapter 4 presented the analysis of quantitative studies conducted through the postal survey method. A total of 343 respondents were involved in this study consisting of 180 respondents from the palm oil mills and 163 respondents from the plantation sector. There are 72.2% respondentsô companies has been in operation for more than 20 years in the palm oil

industry. The finding shows that the majority of these respondent companies belong to Government Linked Company(GLC). The respondents perceived that all the identified CSFs for benchmarking in palm oil industry are important in order to ensure the success of benchmarking adoption. However, level of actual practice of each CSFs are still low especially for Employee Satisfaction Management. Case study conducted found that with proper benchmarking implementation will contribute to the improvement of companyôs operation and operation performance, motivational management, prospect and also the financial management.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This chapter summarizes all the findings obtained from the studies conducted and presented in this thesis. This chapter begins with the summary of findings that answer all the research questions and objective. Next, research contribution on theoretical development and benefits gain by the industry will be presented. This chapter will conclude with a proposal for further research arising from the research findings and constraints encountered in conducting research.

5.2 SUMMARY OF METHOD AND RESEARCH FINDING

In order to answer the research questions and to achieve the objectives of research, several research methods involving various research instruments has been used. This research has been started with a thorough literature review on the palm oil industry and benchmarking. The literature review was conducted to obtain general description of benchmarking requirements in improving the palm oil industry performance. The combination of findings obtained from literature and visits to several plantations and mills have given input to develop the research instrument, conduct survey and case study.

The survey and case studies conducted have found that the level the industry's awareness of the benchmarking is high, but the level its implementation is still at a moderate level. Studies have also shown at least one initiative ie understanding and knowing the process itself was carried out. Overall, almost all the oil palm plantations and palm oil mills companies conducted the informal benchmarking, no systematic documentation system and no review and monitoring system on benchmarking implementation.

Meanwhile, to answer the second objective of this research which is to analyse the critical success factors to perform benchmarking in the palm oil industry, the survey was

conducted. The findings show that the level of practice of critical success factors benchmarking implementation such as top management support, human resource and employee management, customer satisfaction management and performance measurement is still less being given attention and adapted in Malaysian palm oil industry. Additionally, studies reveal some of the obstacles and constraints faced and it disrupts the smoothness of benchmarking implementation in the palm oil industry are the main attitude of employees, lack of knowledge and skills workers on the concept of benchmarking and training and communication systems limited.

The case study conducted on eight palm oil mills revealed that the benchmarking implementation gives the benefit to the companies in enhancing company production and operation performance, improve the employee and customer satisfaction, accelerate the organizational prospects and subsequently improve the company financial management.

5.3 CONTRIBUTION OF RESEARCH TO THE THEORY AND INDUSTRY DEVELOPMENT

Identification of critical success factors in benchmarking implementation is the main result of this research. Exposure to implementation benchmarking and benchmarking success factors have been made specifically for palm oil industry. It is hoped that the findings of this research can trigger the encouragement to conduct more research on the benchmarking implementation in palm oil industry. This research has contributed valuable in theory and practical.

In theory, quantitative and qualitative studies conducted revealed a new element of CSFs which is the importance of the company to have a good communication system between top management and all levels of staff and the main constraints in benchmarking implementation is limited training and communication systems.

Practically, the mistakes and conflicts that may exist during benchmarking implementation can be minimized and consequently can improve the successful implementation of benchmarking in this industry. This is because of this research has provided details on the experience of some oil palm plantations and palm oil mills in order to improve their efficiency and competitiveness through benchmarking implementation.

5.4 RECOMMENDATION

At the end of the research, many studies have been conducted to better understand and investigate the implementation of benchmarking in Malaysia in general and in particular in the oil palm industry. The concept of continuous improvement is not one-time process and it takes several cycles to achieve full benefits. Therefore, it is recommended that a study be made deeply carried out in a longer period of time for reveals the true practice of benchmarking in the oil palm industry especially involving the implementation process.

5.5 CONCLUSION

The research has been carried out to achieve the stated research objectives in the early stages of the study. The findings of this study will contribute to increase knowledge in developing the theory of benchmarking implementation. Nevertheless, no matter how sophisticated the knowledge and framework has been developed, it will barely ineffective without willingness to change and full involvement and support from all parties in the industry mainly from top management.

REFERENCES

Abas, R., Kamarudin, M.F., Nordin, A.B.A. & Simeh, M.A., 2011. A study on the Malaysian oil palm biomass sector - supply and perception of palm oil millers. *Oil Palm Industry Economic Journal*, 11(1): 28-41.

Al-Fawaeer, M., Hamdan, K.B. & Al-Zuɑbi, H.A., 2012. A Study of Benchmarking Influence on Customer Satisfaction. *International Journal of Business and Management*, 7(8): 108-114.

Al-Nofal, A., Zairi, M. & Ahmed, A.M., 2010. Critical Factors of TQM: An international comparative benchmarking analysis. *European Centre for Best Practice Management*: 1-9.

Alshawi, S., Irani, Z. & Baldwin, L., 2003. Benchmarking: information and communication technologies. *Benchmarking: An International Journal*, 10(4): 312-324.

Amaratunga, D., Baldry, D., Sarshar, M. & Newton, R., 2002. Quantitative and qualitative research in the built environment: application of "mixed" research approach. *Work Study*, 51(1): 17-31.

Axson, D.A.J., 2003. *Best practices in planning and management reporting*. John Wiley & Sons, Inc.

Balm, G.J., 1996. Benchmarking and gap analysis: what is the next milestone? *Benchmarking for Quality Management & Technology*, 3(4): 26-33.

Besterfield, D.H., 1998. *Quality control*. Prentice-Hall International Inc.

Bhate, A., 2007. *Types of questions in a survey questionnaire*. Market Intelligent Group.

Bhutta, K.S. & Huq, F., 1999. Benchmarking-best practices:an integrated approach. *Benchmarking: An International Journal*, 6(3): 254-268.

Boisvert, H. & Caron, m.-A., 2006. Benchmarking web site function. *Benchmarking: An International Journal*, 13(1/2): 174-189.

Brah, S.A., Ong, A.L. & Rao, B.M., 2000. Understanding the benchmarking process in Singapore. *International Journal of Quality & Reliability Management*, 17(3): 259-275.

Bullivant, J.R.N., 1996. Benchmarking in the UK National Health Service. *International Journal of Health Care Quality Assurance*, 9(4): 9-14.

Camp, R.C., 1993. A bible for benchmarking by Xerox. *Financial Executive*, 9(4): 23-27.

Camp, R.C., 1998. Benchmarking: the search for industry best practices that lead to superior performance. *ASQC Quality Press*, Milwaukee, WI.

Cassell, C., Nadin, S. & Gray, M.O., 2001. The use and effectiveness of benchmarking in SMEs. *Benchmarking: An International Journal*, 8(3): 212-222.

Chang, A.M., Gardner, G.E., Duffield, C. & Ramis, M.-A., 2010. A Delphi study to validate an Advanced Practice Nursing tool. *Journal of Advanced Nursing*, 66(10): 2320-2330.

Chapman, R. & Al-Khawaldeh, K., 2002. TQM and labour productivity in Jordanian industrial companies. *The TQM Magazine*, 14(4): 248-262.

Chen, M.-K. & Wang, S.-C., 2010. A hybrid Delphi-Bayesian method to establish business data integrity policy: A benchmark data center case study. *Kybernetes*, 39(5): 800-824.

Chin, K.S., Pun, K.F., Lau, C.S. & Lau, H., 2001. Performance improvement of international roaming service: A benchmarking study. *Benchmarking: An International Journal*, 8(2): 120-131.

Clarke, A. & Manton, S., 1997. A benchmarking tool for change management. *Business Process Management*, 3(3): 248-255.

Coakes, S.J., Steed, L. & Dzidic, P., 2006. *SPSS version 13.0 for Windows: analysis without anguish*. John Wiley & Sons Australia, Ltd.

Cook, S., 1995. *Practical benchmarking: A manager's guide to creating a competitive advantage*. Kogan Page.

Creswell, J., 2002. *Research design: Qualitative, quantitative and mixed method approaches*. Sage, London.

Croklaan, L., 2004. *Palmmaters 1: Power through volume*. In: I. Group (Editor). Loders Choklaan, Holland.

Crosthwaite, J., MacLeod, N. & Malcolm, B., 1997. *Case studies: theory and practice in natural resource management*, Proceedings of the Australian Association for Social Research Conference, Wagga.

Curry, A. & Kadasah, N., 2002. Focusing on key elements of TQM-evaluation for sustainability. *The TQM Magazine*, 14(4): 207-216.

Darus, A., Nordin, L. & Abu, S., 2009. Opportunities for sustainable oil palm management; can satellit technology deliver the promise? *International Conference on Future of the Palm Oil Business*.

Dayton, N.A., 2003. The demise of total quality management (TQM) *The TQM Magazine*, 15(6): 391-396.

Debnath, R.M. & Shankar, R., 2008. Benchmarking telecommunication service in India: An application of data envelopment analysis. *Benchmarking: An International Journal*, 15(5): 584-598.

Deros, B.M., Yusof, S.M. & Salleh, A.M., 2006. A benchmarking implementation framework for automative manufacturing SMEs. *Benchmarking: An International Journal*, 13(4): 396-430.

Dieffenbacher, A., 1998. The quality of Palm Oil from user'a view point. *PORIM International Palm Oil Development Conference*: 115-117.

Dobbins, J.H. & Donelly, R.G., 1998. Summary research report on critical success factors in federal government program management. *Acquisition Review Quarterly*.

Doherty, G.D., 2008. On quality in education. *Quality Assurance in Education*, 16(3): 255-265.

Dompok, B., 2009. *Winfall tax on CPO stays*, htttp://mypalmoil.blogspot.com, [29 June 2009].

Dorsch, J.J. & Yasin, M.M., 1998. A framework for benchmarking in the public sector: Literature review and directions for future research. *International Journal of Public Sector Management*, 11(2/3): 91-115.

Drew, S.A.W., 1997. From Knowledge to Action: The Impact of Benchmarking on Organizational Performance. *Long Range Planning*, 30(3): 427 - 441.

Dwyer, R.J., 2008. Benchmarking as a process for demonstrating organizational trustworthiness? *Management Decision*, 46(8): 1210-1229.

Eckstein, H., 2002. *Case study and theory in political science*. Case study method: Key issues, key texts. Sage, London.

Eisenhardt, K.M., 1989. Building theories from case study research. *Academy of Management Review*, 14(4): 532-550.

Elmuti, D. & Kathawala, Y., 1997. An overview of benchmarking process: a tool for continuous improvement and competitive advantage. *Benchmarking for Quality Management & Technology*, 4.

Enshassi, A., Mohamed, S., Mayer, P. & Abed, K., 2007. Benchmarking masonry labor productivity. *International Journal of Productivity and Performance Management*, 56(4): 358-368.

Fernandez, P., McCarthy, I.P. & Rakotobe-Joel, T., 2001. An evolutionary approach to benchmarking. *Benchmarking: An International Journal*, 8(4): 281-305.

Field, A., 2009. *Discovering statistics using SPSS*. SAGE Publication Ltd.

Fong, P.S.-w., Shen, Q. & Cheng, E.W.L., 2001. A framework for benchmarking the value management process. *Benchmarking: An International Journal*, 8(4): 306-316.

Foong, S.-Y. & Teruki, N.A., 2009. Cost-system functionality and the performance of the Malaysian palm oil industry. *Asian Review of Acounting*, 17(3): 212-225.

Foster, M., Smith, S., Whittle, S. & Tranfield, D., 1994. Regenerating your TQM effort:What to do when it runs out of steam? *The TQM Magazine*, 6(4): 42-47.

Fowler, A. & Campbell, D., 2001. Benchmarking and performance management in clinical pharmacy. *International Journal of Operations & Production Management*, 21(3): 327-350.

France, N.C. & Francis, G.A.J., 2005. Cross-laboratory benchmarking in pathology: scientific management or the art of compromise? *Benchmarking: An International Journal*, 12(6): 523-538.

Fry, J., Humphreys, I. & Francis, G., 2005. Benchmarking in civil aviation: some empirical evidence. *Benchmarking: An International Journal*, 12(2): 125-137.

Fryer, K.J., Antony, J. & Douglas, A., 2007. Critical success factors of continuous improvement in public sector: a literature review and some key findings. *The TQM Magazine*, 19(5): 497.

Fuller, C., 2000. Modelling continuous improvement and benchmarking processes through the use of benefit curves. *Benchmarking: An International Journal*, 7(1): 35-51.

Gadenne, D. & Sharma, B., 2009. An investigation of the hard and soft quality management factors of Australian SMEs and their association with firm performance. *International Journal of Quality & Reliability Management*, 26(9): 865-880.

Gan, L.T., HO, C.Y., Lam, K.S. & Chew, J.S., 1993. Optimum harvesting standards to maximize labour productivity and oil recovery. *Proceedings of the 1993 PORIM International Palm Oil Congress 'Update and Vission*: 195-211.

Garengo, P., Biazzo, S., Simonetti, A. & Bernardi, G., 2005. Research and Concept - Benchmarking on managerial practices: a tool for SMEs. *The TQM Magazine*, 17(5): 440-455.

Garvin, D.A., 1988. *Managing Quality: The Strategic and Competitive Edge*. Free Press, New York,NY.

George, D. & Mallery, P., 2007. *SPSS for Windows step by step : a simple guide and reference, 14.0 update* 7th edition. Boston, Pearson.

Gitlow, H.S., Oppenhiem, A.J., Oppenhiem, R. & Levine, D.M., 2005. *Quality Mangement*. Mc Graw Hill.

Goh, K.J. et al., 2002. Concept of site yield potential and its applications in oil palm plantations *Malaysian Oil Science and Technology* 11: 57-63.

Goncharuk, A.G. & Monat, J.P., 2009. A synergistic performance management model conjoining benchmarking and motivation. *Benchmarking: An International Journal*, 16(6): 767-784.

Grigoroudis, E., Politis, Y. & Siskos, Y., 2002. Satisfaction benchmarking and customer classification: An application to the branches of a banking organization. *International Transactions in Operational Research*, 9: 599-618.

Guimaraes, T. & Langley, K., 1994. Developing innovation benchmarks: an empirical study. *Benchmarking For Quality Management & Technology*, 1(3): 3-20.

Gulla, U. & Gupta, M.P., 2012. Deciding the level of information systems outsourcing: Proposing a framework and validation with three Indian banks. *Journal of Enterprise Information Management*, 25(1): 28-59.

Guven-Uslu, P., 2005. Benchmarking in health services. *Benchmarking: An International Journal*, 12(4): 293-309.

Hai, T.C., 2002. The palm oil industry in Malaysia: from seed to frying pan, 1-145.

Halim, R.M. & Ngan, M.A., 2001. Effect of temperature on the quality of fresh crude palam oil at different stages of processing. *Oil Palm Bulletin*, 43: 31-37.

Hannan, M.T. & Freeman, J., 1989. *Organizational ecology*. Harvard niversity Press.

Harun, M.H., Shuib, A.R., Omar, W., Mohammed, A.T. & Malek, M.F., 2005. Effects of soil compaction on oil palm productivity. *Proceedings of the PIPOC 2005 International Palm Oil Congress (Agriculture)*: 469-481.

Hatcher, T. & Colton, S., 2007. Using the internet to improve HRD research: The case of the web-based Delphi research technique to achieve content validity of an HRD-oriented measurement. *Journal of European Industrial Training*, 31(7): 570-587.

Haynes, R.J., 2003. Soil quality evaluation for increased oil palm yield production. *Proceedings of the PIPOC 2003 International Palm Oil Congress (Agriculture)*: 7-20.

Hess, K. & Francis, G., 2004. Cost income ratio benchmarking in banking: a case study. *Benchmarking: An International Journal* 11(3): 303-319.

Hinton, M., Francis, G. & Holloway, J., 2000. Best practice benchmarking in the UK. *Benchmarking: An International Journal*, 7(1): 52-61.

Hong, P., Hong, S.W., Roh, J.J. & Park, K., 2012. Evolving benchmarking practices: a review for research perspectives. *Benchmarking: An International Journal*, 19(4): 444-462.

Howze, P.C. & Dalrymple, C., 2004. Consensus without all the meetings: using the Delphi method to determine course content for library instruction. *Reference Services Review*, 32(2): 174-184.

Hsu, C.-C. & Sandford, B.A., 2007. The Delphi Technique: Making Sense Of Consensus *Practical Assessment, Research & Evaluation* 12(10): 1-8.

Huan, L.K., 2007. Management of subsidence on tropical deep peat for sustainable oil palm cultivation. *Proceedings of the PIPOC 2007 International Palm Oil Congress (Agriculture)*: 1160-1173.

Hunter, W., Lumbers, M. & Raats, M., 2007. Future challenges in day-care centre food services: will benchmarking help? *International Journal of Public Sector Management*, 20(5): 434-448.

Hutton, R. & Zairi, M., 1994. D2D: a quality winner's approach to benchmarking. *Benchmarking For Quality Management & Technology*, 1(3): 21-38.

Hwang, L.-J.J. & Lockwood, A., 2006. Understanding the challenges of implementing best practices in hospitality and tourism SMEs. *Benchmarking: An International Journal*, 13(3): 337-354.

Hyland, P. & Beckett, R., 2002. Learning to compete: the value of internal benchmarking. *Benchmarking: An International Journal*, 9(3): 293-304.

Ibanichuka, O.K., 1996. A survey of palm oil mills in Nigeria: setbacks and future priorities of mechanised production system of palm oil production. *Proceedings of the 1996 PORIM Internaqtional Palm Oil Congress: Competitiveness for the 21st Century*: 447-459.

Ikhsan, Z.H., 2011. Proses pemungutan data dalam kajian penyoalan lisan: satu kongsi pengalaman. *Atikan*, 1(2): 215-232.

Isaac, G.R., Zerbe, W.J. & Pitt, C.D., 2001. Leadership and motivation: the effective application of expentancy theory. *Journal of Managerial Issues*, 13(2): 212-226.

Isaksson, R., 2006. Total quality management for sustainable development. *Business Process Management Journal*, 12(5): 632-645.

Ittner, C.D., Larcker, D.F. & Randall, T., 2003. Performance implications of strategic performance measurement in financial services firms. *Accounting, Organizations and Society*, 28: 715ï 741.

Ivanovic, M.D. & Majstorovic, V.D., 2006. Model developed for the assessment of quality management level in manufacturing systems. *The TQM Magazine*, 18(4): 410-423.

Jabareen, Y.R., 2009. Building a conceptual framework: philosophy, definitions, and procedure. *International Journal of Qualitative Methods*, 8(4): 49-62.

Jain, R., Yadav, O.P. & Rathore, A.P.S., 2008. The propagation of benchmarking concepts in Indian manufacturing industry. *Benchmarking: An International Journal*, 15(1): 101-117.

Jamali, G., Ebrahimi, M. & Abbaszadeh, M.A., 2010. *TQM implementation: an investigation of critical success factor*, International Conference on Education and Management Technology. IEEE, pp. 112-116.

Janes, J., 1999. Survey construction. *Library Hi Tech*, 17(3): 321-325.

Jaques, M. & Povey, B., 2007. Assessing the changing role, attitudes and knowledge of UK business advisors to the benefits of benchmarking and benchmarking tools. *Benchmarking: An International Journal*, 14(5): 639-661.

Jayaselan, H.A.J. & Ahmad, D., 2011. Development of a mechanization selection system for oil palm plantations with alternative planting patterns. *Journal of Oil Palm Research*, 23: 990-998.

Jones, K. & Kaluarachchi, Y., 2008. Performance measurement and benchmarking of a major innovation programme. *Benchmarking: An International Journal*, 15(2): 124-136.

Joo, S.-J., Stoeberl, P.A. & Kwon, I.-W.G., 2007. Benchmarking efficiencies and strategies for resale operations of a charity organization. *Benchmarking: An International Journal*, 14(4): 456-464.

Kerry, J., Kerry, J. & Ledward, D., 2005. *Meat processing - improving quality*. Woodhead Publishing Limited, England.

Khoo, H.H. & Tan, K.C., 2002. Critical success factors for quality management implementation in Russia. *Industrial and Commercial training*, 34(7): 263-268.

Kohn, L.T., 1997. *Methods in Case Study Analysis*. The Center for Studying Health System Change, pp. 1-9.

Kouzmin, A., LoÈffler, E., Klages, H. & Korac-Kakabadse, N., 1999. Benchmarking and performance measurement in public sectors: Towards learning for agency effectiveness. *The International Journal of Public Sector Management*, 12(2): 121-144.

Kumar, S. & Chandra, C., 2001. Enhancing the effectiveness of benchmarking in manufacturing organizations. *Industrial Management & Data Systems*, 101(2): 80-89.

Kyriakidou, O. & Gore, J., 2005. Learning by example: benchmarking organizational culture in hospitality, tourism and leisure SMEs. *Benchmarking: An International Journal*, 12(3): 192-206.

Kyro, P., 2003. Revising the concept and forms of benchmarking. *Benchmarking: An International Journal*, 10(3): 210-225.

Lakhe, R.R. & Mohanty, R.P., 1994. Total quality management - concepts, evolution and acceptability in developing economies. *International Journal of Quality & Reliability Management*, 11(9): 9-33.

Lai, J.H.K. & Yik, F.W.H., 2008. Benchmarking operation and maintenance costs of luxury hotels. *Journal of Facilities Management*, 6(4): 279-289.

Lam, E.W.M., Chan, A.P.C. & Chan, D.W.M., 2004. Benchmarking design-build procurement systems in construction. *Benchmarking: An International Journal*, 11(3): 287-302.

Langowitz, N.S. & Rao, A., 1995. Effective benchmarking: learning from the host's viewpoint. *Benchmarking For Quality Management & Technology*, 2(2): 56-61.

Lankford, W.M., 2002. Benchmarking : Understanding the basics. *The Coastal Business Journal*, 1(1): 57-62.

Lee, S.K.J., 1992. Quantitative versus qualitative research methods - two approaches to organisation studies. *Asia Pacific Journal of Management*, 9(1): 87-94.

Lee, Y.P., Zailani, S. & Soh, K.L., 2006. Understanding factors for benchmarking adoption: new evidence from Malaysia. *Benchmarking: An International Journal*, 13(5): 548-565.

Levering, B., 2002. Concept analysis as empirical method. *International Journal of Qualitative Methods*, 1(1): 35-48.

Li-Hua, R., 2007. Benchmarking China firm competitiveness: a strategic framework. *Journal of Technology Management in China*, 2(2): 105-118.

Li, J.-H., Anderson, A.R. & Harrison, R.T., 2003. Total quality management principles and practices in China. *International Journal of Quality & Reliability Management*, 20(9): 1026-1050.

Liang, Y., 2005. *An essential management tool: Benchmarking has become an essential management tool for park and recreation agencies*. National Recreation and Park Association.

Linde, H.v.d., Limbeek, J.v., Postema, K. & Geertzen, J.H.B., 2005. Use of the Delphi Technique for developing national clinical guidelines for prescription of lower-limb prostheses. *Journal of Rehabilitation Research & Development*, 42(5): 693-704.

Lo, V.H.Y. & Sculli, D., 1996. An application of TQM concepts in education. *Training for Quality*, 4(3): 16-22.

Longbottom, D., 2000. Benchmarking in the UK: an empirical study of practitioners and academics. *Benchmarking: An International Journal*, 7(2): 98-117.

Madu, C.N., Kuei, C.H. & Jacob, R.A., 1996. An empirical assessment of the influence of quality dimensions on organizational performance. *International Journal of Production Research*, 34(7): 1943-1962.

Magd, H. & Curry, A., 2003. Benchmarking: achieving best value in public-sector organisations. *Benchmarking: An International Journal*, 10(3): 261-286.

Magd, H.A.E., 2008. Understanding benchmarking in Egyptian organizations: an empirical analysis. *Benchmarking: An International Journal*, 15(6): 742-764.

Maheshwari, S.K. & Zhao, X., 1994. Benchmarking quality management practices in India. *Benchmarking For Quality Management & Technology*, 1(2): 5-23.

Maiga, A.S. & Jacobs, F.A., 2004. The association between benchmarking and orgabizational performance: An empirical investigation. *Managerial Finance*, 30(8): 13-33.

Maire, J.-L., Bronet, V. & Pillet, M., 2005. A typology of "best practices" for a benchmarking process. *Benchmarking: An International Journal*, 12(1): 45-60.

Malina, M.A., Norreklit, H.S.O. & Selto, F.H., 2011. Lessons learned advantages and disadvantages of mixed method research. *Qualitative Research in Accounting & Management*, 8(1): 59-71.

Mangan, J., Lalwani, C. & Gardner, B., 2004. Combining quantitative and qualitative methodologies in logistics research. *International Journal of Physical Distribution & Logistics Management*, 34(7): 565-578.

Mann, R., 1998. Best practices in the food and drinks industry. *Benchmarking For Quality Management & Technology*, 5(3): 184-199.

Manning, L., Baines, R. & Chadd, S., 2008. Benchmarking the poultry meat supply chain. *Benchmarking: An International Journal*, 15(2): 148-165.

Mathaisel, D.F.X., Cathcart, T.P. & Comm, C.L., 2004. A framework for benchmarking classifying, and implementing best sustainment practices. *Benchmarking: An International Journal*, 11(4): 403-417.

Matook, S., Lasch, R. & Tamaschke, R., 2009. Supplier development with benchmarking as part of a comprehensive supplier risk management framework. *International Journal of Operations & Production Management*, 29(3): 241-267.

Matykiewicz, L. & Ashton, D., 2005. Essence of Care benchmarking: putting into practice. *Benchmarking: An International Journal*, 12(5): 467-481.

McKenna, H.P., 1994. The Delphi technique: a worthwhile research approach for nursing? *Journal of Advanced Nursing* 19(6): 1221-1225.

Medori, D. & Steeple, D., 2000. A framework for auditing and enhancing performance measurement systems. *International Journal of Operations & Production Management*, 20(5): 520-533.

Mehregan, M.R., Nayeri, M.D. & Ghezavati, V.R., 2010. An optimisational model of benchmarking. *Benchmarking: An International Journal*, 17(6): 876-888.

Meredith, J.R., McCutcheon, D.M. & Hartley, J., 1994. Enhancing competitiveness through the new market equation. *International Journal of Operations & Production Management*, 14(11): 7-22.

Merriem, S.B., 1998. *Qualitative research and case study applications in education*. Jossey-Bass, San Francisco.

Meybodi, M.Z., 2009. Benchmarking performance measures in traditional and just-in-time companies. *Benchmarking: An International Journal*, 16(1): 88-102.

MIDA, 2012. Malaysia: prestasi pelaburan 2011, Lembaga Pembangunan Pelaburan Malaysia.

Mohamad, F., Tahar, R.M. & Awang, N., 2011. *Evaluating capacity of palm oil mill using simulation towards effective* Conference Management, Penang.

Mohamed, S., 1996. Benchmarking and improving construction productivity. *Benchmarking for Quality Management & Technology*, 3(3): 50-58.

Mok, K.-h., 2005. The quest for world class university: Quality assurance and international benchmarking in Hong Kong. *Quality Assurance in Education*, 13(4): 277-304.

Montes, F.J.L., Jover, A.V. & Fernandez, L.M.M., 2003. Factor affecting the relationship between total quality management and organizational performance. *International Journal of Quality & Reliability Management*, 20(2): 189-209.

MPOB, 2009. *Directory of the Malaysian Palm Oil Processing Sector*. Ministry of Plantation Industries & Commodities.

MPOC, 2010a. Malaysian palm oil export value to exceed RM100b by 2020. *Malaysian Palm Oil FORTUNE*, 1: 11.

MPOC, 2010b. Malaysian palm oil in the CIS: focus on Russian and Ukraine. *Malaysian Palm Oil FORTUNE*, 9: 5 & 10.

MPOC, 2010c. Nigeria opportunities abound for the Malaysian palm oil industry. *Malaysian Palm Oil FORTUNE*, 8: 6&10.

MPOC, 2010d. POTS China: no looking back for palm oil industry. *Malaysian Palm Oil FORTUNE*, 7: 6-7 & 11.

MPOC, 2010e. Yemen another great market for Malaysian palm oil. *Malaysian Palm Oil FORTUNE*, 9: 6 & 9.

Ngai, E.W.T. & Cheng, T.C.E., 1997. Identifying potential barriers to total quality management using principal component analysis and correspondence analysis. *International Journal of Quality & Reliability Management*, 14(4): 391-408.

Northcott, D. & Llewellyn, S., 2005. Benchmarking in UK health: a gap between policy and practice? *Benchmarking: An International Journal*, 12(5): 419-435.

Nunnally, J.C., 1967. *Psychometric Theory*. McGraw-Hill, New York.

Nwabueze, U., 2001. An industry betrayed: the case of total quality management in manufacturing. *The TQM Magazine*, 13(6): 400-408.

Nworie, J., 2011. Using the Delphi Technique in EducationalTechnology Research. *TechTrends*, 55(5): 24-30.

Okoli, C. & Pawlowski, S.D., 2004. The Delphi method as a research tool: an example, design considerations and applications. *Information & Management*, 4: 15-29.

Ooi, K.B., Bakar, N.A., Arumugam, V., Vellapan, L. & Loke, A.K.Y., 2007. Does TQM influence employeesô job satisfaction? An empirical case analysis. *International Journal of Quality & Reliability Management*, 24(1): 62-77.

Ovretveit, J., 2000. Total quality management in European healthcare. *International Journal of Health Care Quality Assurance*, 13(2): 74-70.

Owolarafe, O.K., A.S., O. & B.E, O., 2007. Effects of hydraulic press parameter on crude palm oil yeild. *International Agrophysics*, 21: 285-291.

Padma, P., Rajendran, C. & Sai, L.P., 2009. A conceptual framework of service quality in healthcare: Perspectives of Indian patients and their attendants. *Benchmarking: An International Journal*, 16(2): 157-191.

Panapanaan, V. et al., 2009. Sustainability of palm oil production and opportunities for finnish technology and know-how transfer, Lappeenranta University of Technology.

Paraskevas, A. & Saunders, M.N.K., 2012. Beyond consensus: an alternative use of Delphi enquiry in hospitality research. *International Journal of Contemporary Hospitality Management*, 24(6): 907-924.

Patrovi, F.Y., 1994. Determining what to benchmark: an anlytic hierarchy process approach. *International Journal of Operations & Production Management*, 14(6): 25-39.

Perry, C., 1998. Processes of a case study methodology for postgraduate research in marketing. *European Journal of Marketing*, 32(9): 785-802.

Pill, J., 1971. The Delphi method: Substance, context, a critique and an annotated bibliography. *Socio-Economic Planning Science*, 5: 57-71.

Poku, K., 2002. *Small-scale palm oil processing in Africa*, FAO Agricultural Services Bulletin, Ghana.

Poolton, J. & Ismail, H., 2000. New developments in innovation. *Journal of Management Psychology*, 15(8): 795-811.

Powell, C., 2003. The Delphi technique: myths and realities. *Journal of Advanced Nursing*, 41 (4): 376ï 382.

Prajogo, D.I. & McDermott, C.M., 2005. The relationship between total quality management practices and organizational culture. *International Journal of Operations & Production Management*, 25(11): 1101-1122.

Prajogo, D.I. & Sohal, A.S., 2004. Transitioning from total quality management to total innovation management. *International Journal of Quality & Reliability Management*, 21(8): 861-875.

Psomas, E.L. & Fotopoulos, C.s.V., 2010. Total quality management practices and results in food companies. *International Journal of Productivity and Performance Management*, 59(7): 668-687.

Pulat, B.M., 1994. Process improvement through benchmarking. *The TQM Magazine*, 6(2): 37-40.

Purba, P. & Lubis, A.U., 1991. *Limiting factors on Oil Palm yiels in West Part of Indonesia*, PORIM International Palm Oil Conference (Agriculture), 293-301.

Rad, A.M.M., 2006. The impact of organizational culture on the successful implementation of total quality management. *The TQM Magazine*, 18(6): 606-625.

Rahman, S.-u. & Sohal, A.S., 2002. A review and classification of total quality management research in Australia and an agenda for future research. *International Journal of Quality & Reliability Management*, 19(1): 46-65.

Rahman, Z. & Siddiqui, J., 2006. Exploring total quality management for information systems in Indian firms: application and benefits. *Business Process Management Journal*, 12(5): 62-631.

Rajanaidu, N., Ariffin, A.A., Wood, B.J. & Singh, S., 1987. Ripeness standards and harvesting criteria for oil bunches. *Proceedings of the 1987 International Palm Oil Conferences (Agriculture)*: 224-230.

Ralston, D., Wright, A. & Kumar, J., 2001. Process benchmarking as a market research tool for strategic planning. *Marketing Intelligence & Planning*, 19(4): 273-281.

Ramasamy, B., Ong, D. & Yeung, M.C.H., 2005. Firm size, ownership and performance in the Malaysian palm oil industry. *Asian Academy of Management Journal of Accounting and Finance*, 1: 81-104.

Rao, V., Gomez, M., Chayawat, N., Chia, C.C. & Lim, C.C., 2001. Some factors influencing oil/bunch, OER and KER. *Proceedings of the 2001 PIPOC International Palm Oil Congress (Agriculture)*: 167-191.

Ribeiro, L.M.M. & Cabral, J.A.S., 2006. A benchmarking methodology for metalcasting industry. *Benchmarking: An International Journal*, 13(1/2): 23-35.

Riege, A.M., 2003. Validity and reliability tests in case study research: a literature review with "hands-on" applications for each research phase. *Qualitative Market Research: An International Journal*, 6(2): 75-86.

Rodwell, J.J., Lam, J. & Fastenau, M., 2000. Benchmarking HRM and the benchmarking of benchmarking: best practices from outside the square in the Australian finance industry. *Employee Relations*, 22(4): 356-374.

Rothenberg, S., Schenck, B. & Maxwell, J., 2005. Lessons from benchmarking environmental performnace at automobile assembly plants. *Benchmarking: An International Journal*, 12(1): 5-15.

Rungasamy, S., Antony, F. & Ghosh, S., 2002. Critical success factors for SPC implementation in UK small and medium enterprises: some key findings from a survey. *The TQM Magazine*, 14(4): 217-224.

Salhieh, L. & Singh, N., 2003. A system dynamics framework for benchmarking policy analysis for a university system. *Benchmarking: An International Journal*, 10(5): 490-498.

Sampoernaagro, 2006. *Palm cultivation*, In: TBK, P. S. A. (Ed.). 23 April 2009, http://www.sampoernaagro.com/en/palm.html.

Santos, A., Powell, J.A. & Hinks, J., 2001. Using pattern matching for the international benchmarking of production practices. *Benchmarking: An International Journal*, 8(1): 35-47.

Saunders, M., Mann, R. & Smith, R., 2007. Benchmarking strategy deployment practices. *Benchmarking: An International Journal*, 14(5): 609-623.

Sebastianelli, R. & Tamimi, N., 2002. How product quality dimensions relate to defining quality. *International Journal of Quality & Reliability Management*, 19(4): 442-453.

Shahalizadeh, M., Amirjamshidi, G. & Shahalizadeh, S., 2009. Benchmarking of thesis research: a case study. *Benchmarking: An International Journal*, 16(1): 103-123.

Sharma, U. & Hoque, Z., 2002. TQM implementation in a public sector entity in Fiji. *The International Journal of Public Sector Management*, 15(5): 340-360.

Shi, N. & Bennett, D., 2001. Benchmarking for information systems management using issues framework studies: content and methodology. *Benchmarking: An International Journal*, 8(5): 358-375.

Shuib, A.R., Yusof, A.Z., Kheng, C.O., Kamisan, R. & Aidros, N., 2007. *Enhancing fresh fruit bunches evacuation through mechanization*, Proceedings of the PIPOC 2007 International Palm Oil Congress (Agriculture), 29-45.

Silvestro, R., Johnston, R., Fitzgerald, L. & Voss, C., 1990. Quality measurement in service industries. *International Journal of Service Industry Management*, 1(2): 54-66.

Simpson, M. & Kondouli, D., 2000. A practical approach to benchmarking in three service industries. *Total Quality Management*, 11: 623-630.

Sinclair, D. & Zairi, M., 1995. Benchmarking best-practice performance measurement within companies- using total quality management. *Benchmarking For Quality Management & Technology*, 2(3): 53-71.

Sivasothy, K., Halim, R.M. & Basiron, Y., 2005. A new system for continuous sterilization of oil palm fresh fruit bunches. *Journal of Oil Palm Research*, 17: 145-151.

Skulmoski, G.J., and, F.T.H. & Krahn, J., 2007. The Delphi Method for Graduate Research. *Journal of Information Technology Education*, 6: 1-21.

Smith, G., Ritter, D. & Tuggle, W., 1993. Benchmarking: the fundamental question. *Marketing Management*, 2(3): 43-49.

Sobaih, A.E.E., Ritchie, C. & Jones, E., 2012. Consulting the oracle? Applications of modified Delphi technique to qualitative research in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 24 (6): 886-906.

Sohail, M.S. & Hoong, T.B., 2003. TQM practices and organizational performances of SMEs in Malaysia. *Benchmarking: An International Journal*, 10(1): 37-53.

Sohal, A.S. & Terziovski, M., 2000. TQM in Australian manufacturing: factors critical to success. *International Journal of Quality & Reliability Management* 17(2): 158-167.

Somers, T.M. & Nelson, K., 2001. The impact of Critical Success Factors across the stages of enterprise resources planning implementation. *Proceedings of the 34th Hawaii International Conference on System Sciences*.

Sousa, S.r.D., Aspinwall, E.M. & Rodrigues, A.G.e., 2006. Performance measures in English small and medium enterprises: survey results. *Benchmarking: An International Journal*, 13(1/2): 120-134.

Southard, P.B. & Parente, D.H., 2007. A model for internal benchmarking: when and how? *Benchmarking: An International Journal*, 14(2): 161-171.

Su, Y.-Y., Win, K.T. & Chung, T.-C., 2010. *Applying the modified delphi method to identify the Taiwanese electronics health record systems evaluation framework and instrument*, Pacific Asia Conference on Information Systems, pp. 693-703.

Synder-Halpern, R., 2001. Indicators of organizational readiness fro clinical information technology/systems innovation: a Delphi study. *International Journal of Medical Informatics*, 63(3): 179-204.

Talha, M., 2004. Total quality management (TQM): an overview. *The Bottom Line: Managing Library Finances*, 17(1): 15-19.

Tari, J.J., 2005. Component of successful total quality management. *The TQM Magazine*, 17(2): 182-194.

Tarnoff, P.J., Young, S.E., Crunkleton, J. & Nezamuddin, N., 2008. Guide to benchmarking operation performance measures. In: N.T.R.B.o.T.N. Academics (Editor), *1-24*.

Tayles, M., Pike, R.H. & Sofian, S., 2007. Intellectual capital, management accounting practices and corporate performance: perception of managers. *Accounting, Auditing & Accountability Journal*, 20(4): 522-548.

Teck, S.T., 2009. Cost reduction strategies in palm oil milling process & maintenance. *XVI International Oil Palm Conference and Excopalma*.

Tellis, W., 1997. Introduction to case study. *The Qualitative Report*, 3(2).

Thiagarajan, T. & Zairi, M., 1998. An empirical analysis of critical factors of TQM. *Benchmarking for Quality Management & Technology*, 5(4): 291-303.

Ting, O.C. & Shin, C.L., 2012. Out of the woods, into the golden crop, Maybank IB Research.

Tohiruddin, L., Prabowo, N.E. & Foster, H.L., 2007. Efficiency of fertilizer use of oil palm planted on soils of Northern and Southern Sumatra. *Proceedings of the 2007 International Palm Oil Conferences (Agriculture)*, 1: 168-189.

Tolosi, P. & Lajtha, G., 2000. Towards improved benchmarking indicators. *Telecommunication Policy* 24: 347-357.

Tutor2u, *Strategy - competitive advantage*., http://www.tutor2u.net/business/strategy/competitive_advantage.htm, [27 October 2008].

Ubani, E.C., 2011. Empiricl analysis of success factors in the implementation of total quality management in construction industries in Nigeria. *Interdisciplinary Journal of Contemporary Research in Business*, 2(12): 182-192.

Ulusoy, G. & Ikiz, I., 2001. Benchmarking best manufacturing practices: a study into four sectors of Turkish industry. *Industrial Journal of Operations & Production Management*, 21(7): 1020-1043.

Ungan, M., 2004. Factors affecting the adoption of manufacturing best practices. *Benchmarking: An International Journal*, 11(5): 504-520.

Vagnoni, E. & Maran, L., 2008. Public sector benchmarking: an application to Italian health district activity plans. *Benchmarking: An International Journal*, 15(3): 193-211.

VanWynsberghe, R. & Khan, S., 2007. Redefining Case Study. *International Journal of Qualitative Methods*, 6(2): 1-10.

Vaus, D.A.d., 2004. *Research design in social research*. SAGE Publication, London.

Verhagen, A.P. et al., 1998. The Delphi list: a criteria list for quality assessment of randomized clinical trials for conducting systematic reviews developed by Delphi consensus. *Journal of Clinical Epidemiology*, 51(12): 1235-1241.

Vermeulen, W., 2003. Benchmarking as an enabler of business excellence in the South African financial sector. *Benchmarking: An International Journal*, 10(1): 65-72.

Vilanova, S.L., García, M.B. & Señoriño, O., 2006. Conceptions of Learning: The Design and Validation of a Questionnaire for Trainee Teachers. *Revista Electrónica de Investigación Educativa*, 9(2): 1-20.

Voss, C.A., Ahlstrom, P. & Blackmon, K., 1997. Benchmarking and operational performance:some empirical results. *International Journal of Operations & Production Management*, 17(10): 1048-1058.

Wahid, M.B., Abdullah, S.N.A. & Henson, I.E., 2004. Oil palm - Achievements and potential. *Proceedings of the 4th International Crop Science Congress*.

Wahid, M.B., Lim, W.S. & Arif, S.M., 2007a. Technological development and new growth areas of the oil palm industry. *Oil Palm Industry Economic Journal*, 7(1): 1-8.

Wahid, O.B. et al., 2007b. Variable rate technology for targeted and efficient oil palm fertiliser application. *Proceedings of the PIPOC 2007 International Palm Oil Congress (Agriculture)*, 1: 85-109.

Wait, S. & Nolte, E., 2005. Benchmarking health systems: trends, conceptual issues and future perspectives. *Benchmarking: An International Journal*, 12(5): 436-448.

Walsh, A., Hughes, H. & Maddox, D.P., 2002. Total quality management continuous improvement: is the philosophy a reality? *Journal of European Industrial Training* 26(6): 299-307.

Wang, H., Tsui, A.S. & Xin, K.R., 2011. CEO leadership behaviours, organizational performance, and employees' attitude. *The Leadership Quarterly*, 22: 92-105.

Watson, G.H., 1994. A percpective on benchmarking. *Benchmarking For Quality Management & Technology*, 1(1): 5-10.

Weller, L.D., 1996. Benchmarking: a paradigm for change to quality education. *The TQM Magazine*, 8(6): 24-29.

Weng, C.K., 1999. System approach to fertilizer management in Oil Palm. *Proceedings of the 1999 International Palm Oil Congress (Agriculture)*: 171- 188.

Weng, C.K., Chiew, L.K. & Alwi, A., 1991. *Fertilizer efficiency studies in Oil Palm*, PORIM International Palm Oil Conference (Aagriculture), 302-311.

Weng, L.T. & Thak, L.T., 2010. FFB decoring technology revolutionizes palm oil milling process. *Palm Oil Engineering Bulletin*, 97: 22-45.

Wickramasinghe, V., 2012. Influence of total quality management on human resource management practices: An exploratory study. *International Journal of Quality & Reliability Management*, 29(8): 836-850.

Williams, P.L. & Webb, C., 1994. The Delphi technique: a methodological discussion. *Journal of Advanced Nursing*, 19(1): 180-186.

Wireman, T. & Carleo, J., 2003. *Benchmarking best practices in maintenance management*. Industrial Press.

Wong, W.P. & Wong, K.Y., 2008. A review on benchmarking of supply chain performance measures. *Benchmarking: An International Journal*, 15(1): 25-51.

Yasin, M.M., 2002. The theory and practice of benchmarking : then and now. *Benchmarking: An International Journal*, 9(3): 217- 243.

Yee, J.T.C. & Chandran, M.R., 2004. A century of oil palms in Malaysia: past, present and future. *Malaysia Oil Science and Technology*, 13: 23-27.

Yeganeh, H., Su, Z. & Sauers, D., 2009. The applicability of widely employed frameworks in cross-cultural management research. *Journal of Academic Research in Economics*, 1(1): 1-24.

Yin, R., 2003. *Case study research: Design and methods*. Sage, Thousand Oaks, CA.

Yin, R.K., 1994. *Case Study Research, Design and Methods*. Sage, Newbury Park, CA.

Yung, W.K.-C. & Chan, D.T.-H., 2003. Application of value delivery system (VDS) and performance benchmarking in flexible business process reengineering. *International Journal of Operations & Production Management*, 23(3): 300-315.

Yusof, S.r.M. & Aspinwall, E., 2000. A conceptual framework for TQM implementation for SMEs. *The TQM Magazine*, 12(1): 31-36.

Yusof, S.r.M. & Aspinwall, E.M., 2000. Critical success factors in small and medium enterprises: survey results. *Total Quality Management*, 11(4/5&6): 5448-5462.

Zainal, Z., 2007. Case study as a research method. *Jurnak Kemanusiaan*, 9: 1-6.

Zairi, M., 1994. Benchmarking: the best tool for measuring competitiveness. *Benchmarking For Quality Management & Technology*, 1(1): 11-24.

Zairi, M. & Hutton, R., 1995. Benchmarking: a process-driven tool for quality improvement. *The TQM Magazine*, 7(3): 35-40.

Zineldin, M., 2006. The royalty of loyalty: CRM, quality and retention. *Journal of Consumer Marketing*, 23(7): 430-437.

Zink, K.J., 2007. From total quality management to corporate sustainability based on a satkeholder management. *Journal of Management History*, 13(4): 394-401.

Zivkovic, J., 2012. Strength and weaknesses of business research methodologies: two disparate case studies. *Business Studies Journal*, 4(2): 91-99.

APPENDIX A

Ref. No.(M): ……._____

SURVEY ON BENCHMARKING IMPLEMENTATION IN PALM OIL INDUSTRY

Dear respondent,

This survey forms being part of study on benchmarking implementation in palm oil industry. The two main objectives of the survey are to explore the level of awareness and extent of benchmarking implementation in palm oil industry. In addition, it will also investigate the critical success factors for benchmarking implementation in oil palm processing industry. Your kind feedback would be useful for us in devising a suitable framework for benchmarking implementation in oil palm processing industry.

Please be assured that any information provided in this survey will be kept strictly confidential. The result of the study is for academic purpose only and no company name will be mentioned in any publication.

Your response to this survey is very valuable and greatly appreciated, since the success of this study depends very much on your contribution.

If you have any queries regarding the questionnaire, please do not hesitate to contact me or my supervisor by phone or email.

Thanking you in advance for your valuable time.

Sincerely,

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Instruction: This questionnaire consists of four (4) main sections. Please read the questions carefully before answering them. Where ever appropriate, tick in the box or write your answer in the space provided.

SECTION 1: GENERAL INFORMATION

In this section we would like to know about your organization in general.

1. Date of establishment of your company?
   Year _____

2. Types of stakeholder

   ☐ Government ☐ Government link company ☐ Private

3. What is the number of employees in your company?
   Management/ Office Staff: _____ Plant technicians/ operators: _____

4. What is the approximate current annual sales revenue (RM millions)?

   ☐ < 5 ☐ 5 ï 10 ☐ 11 ï 25 ☐ >25

5. What is your company paid up capital (RM millions)?

   ☐ <10 ☐ 11-20 ☐ 21-30 ☐ 31-40 ☐ >41

6. What is your milling capacity (metric tonnes/hour)?

   ☐ Small (<40) ☐ Medium (40 ï 60) ☐ Large (> 60)

7. Approximately, how much fresh fruit bunch (FFB) do you received per day? _____metric tonnes.

8. What is the oil extraction rate (OER) of your company? _____%

9. Which of the following quality system is your company certified to? Please tick as many as apply

   ☐ ISO 14001 ☐ ISO 22000:2005 ☐ ISO 19011:2002
   ☐ ISO 9001:2008 ☐ OHSAS 18001 ☐ Others (pleases specify)_____

10. If certified, please state when the first certification was obtained? Year _____

11. Have you received any form of benchmarking knowledge/exposure through seminar/conference/workshop/training or the mass media?

    ☐ Yes ☐ No

12. Do you implement benchmarking initiative in your company?

    ☐ Yes ☐ No (If the answer of Q12 is **NO**, please go to **next section)**

13. If implement, which of the following benchmarking initiative have your company implemented? Please tick as many as apply.

    ☐ Setting up a benchmarking unit
    ☐ Establishing benchmarking measures
    ☐ Education and training in benchmarking
    ☐ Employee involvement in benchmarking
    ☐ Collect and analyze benchmarking information
    ☐ Developing benchmarking strategies
    ☐ Knowing and understanding own process
    ☐ Identify benchmarking partner
    ☐ Adapt the benchmarking procedure/tool
    ☐ Others (please specify) _____

14. Approximately, when did you start the first benchmarking initiative? Year _____

SECTION 2: GENERAL BENCHMARKING OPINION

This section deals with your opinion on the effect of benchmarking implementation. The following statements are presented for your evaluation. Please indicates whether you: **(1) strongly disagree; (2) disagree; (3) neutral; (4) agree; and (5) strongly agree**, with each statement. If you are unsure of how to respond, please circle **(0).**

Statement	Degree of agreement					
18. Improve performance	0	1	2	3	4	5
19. Improve creativity and innovation	0	1	2	3	4	5
20. Raise awareness about current performance	0	1	2	3	4	5
21. Learn from others	0	1	2	3	4	5
22. Have greater involvement of staff	0	1	2	3	4	5
23. Increase willingness to share solutions to common problems	0	1	2	3	4	5
24. Better understand the ôbig pictureô	0	1	2	3	4	5
25. Identify weak areas that needs to be improve	0	1	2	3	4	5
26. Create an atmosphere conducive to continuous improvement	0	1	2	3	4	5
27. Challenge operational complacency	0	1	2	3	4	5
28. Create a readiness for action	0	1	2	3	4	5
29. Accelerate and manage change	0	1	2	3	4	5
30. Understand world-class performance	0	1	2	3	4	5
31. Do not make better-informed decisions	0	1	2	3	4	5
32. Create greater openness about your strengths and weaknesses	0	1	2	3	4	5
33. Have greater confidence in applying new approaches	0	1	2	3	4	5
34. Gain a narrow perspective of the factors (or enablers) that facilitate implementation of good practices	0	1	2	3	4	5

SECTION 3: PERCEPTIONS OF CRITICAL SUCCESS FACTORS IN MANAGEMENT OF OIL PALM PROCESSING INDUSTRY

In this section, we are trying to determine your perception and practices on the factors that are important for benchmarking implementation in oil palm processing industry. Please circle your level of perception on the importance of each statement listed below and the extent to which it is currently a practice in your organization. Please use the following scales.

(1) Importance – the perceived importance of the factor
0 = don't know/unsure, 1 = not important at all, 2 = not important, 3 = neutral, 4 = important, 5 = very important

(2) Practice – the extent or degree of practice in your organization
0 = don't know/unsure, 1 = very low, 2 = low, 3 = moderate, 4 = high, 5 = very high

(**For example:** Aware the need for improvement in organization. If importance = 5, this means it is very important indicator for successful benchmarking implementation; and if practice = 4, this means it is highly practiced)

	FACTORS	(1) Importance	(2) Practice
F1	**Top management & Leadership**		
1.	Willingness to learn, change and improve	0 1 2 3 4 5	0 1 2 3 4 5
2.	Understand the objective of conducting benchmarking	0 1 2 3 4 5	0 1 2 3 4 5
3.	Aware the need for improvement in organization.	0 1 2 3 4 5	0 1 2 3 4 5
	Support and involved in benchmarking effort	0 1 2 3 4 5	0 1 2 3 4 5
	Open to new ideas and builds a continuous improvement culture	0 1 2 3 4 5	0 1 2 3 4 5
	Support improvement and innovation team	0 1 2 3 4 5	0 1 2 3 4 5
	Willing to commit time and resources	0 1 2 3 4 5	0 1 2 3 4 5
	Care for employee welfare, health and safety	0 1 2 3 4 5	0 1 2 3 4 5
	Take responsibility for shaping employeesô attitudes and relationship	0 1 2 3 4 5	0 1 2 3 4 5
	Develop trust in each other through good communication	0 1 2 3 4 5	0 1 2 3 4 5
F2	**Human Resources Management**		
1.	Appraisal system based on employeeôs quality performance	0 1 2 3 4 5	0 1 2 3 4 5
2.	Employees are empowered to solve quality related problems within their own work areas	0 1 2 3 4 5	0 1 2 3 4 5
3.	Employeeôs union support benchmarking effort	0 1 2 3 4 5	0 1 2 3 4 5
4.	Provide resources for training employees in benchmarking tools and techniques	0 1 2 3 4 5	0 1 2 3 4 5
5.	Employees are given information to perform their job	0 1 2 3 4 5	0 1 2 3 4 5
6.	Employees develop realistic expectation for career advancement	0 1 2 3 4 5	0 1 2 3 4 5
F3	**Employee Satisfaction**		
1.	Encourage employees to participate in benchmarking implementation	0 1 2 3 4 5	0 1 2 3 4 5
2.	Employee undergo adequate training on benchmarking implementation	0 1 2 3 4 5	0 1 2 3 4 5
3.	Employee satisfaction levels are measured	0 1 2 3 4 5	0 1 2 3 4 5
4.	Employees are rewarded for their involvement in benchmarking effort	0 1 2 3 4 5	0 1 2 3 4 5
5.	Establish a continuous feedback system to employee concerns, views, ideas and act promptly	0 1 2 3 4 5	0 1 2 3 4 5
6.	Responsive and act promptly towards the result from continuous feedback system	0 1 2 3 4 5	0 1 2 3 4 5
7.	Employees clearly define their job responsibility	0 1 2 3 4 5	0 1 2 3 4 5

	FACTORS	(1) Importance	(2) Practice
F4	**Policy & Strategic planning**		
1.	Incorporating benchmarking in strategic planning process	0 1 2 3 4 5	0 1 2 3 4 5
2.	Ensure that resources are allocated for plan	0 1 2 3 4 5	0 1 2 3 4 5
3.	Develop clear organization policy and known by all the staff	0 1 2 3 4 5	0 1 2 3 4 5
4.	Combining bottom-up and top-down to support benchmarking implementation	0 1 2 3 4 5	0 1 2 3 4 5
5.	Broad and consistent vision	0 1 2 3 4 5	0 1 2 3 4 5
6.	Communication between difference business unit	0 1 2 3 4 5	0 1 2 3 4 5
7.	Easy and friendly communicated	0 1 2 3 4 5	0 1 2 3 4 5
8.	The benchmarking process and its results are clear and sharable	0 1 2 3 4 5	0 1 2 3 4 5
F5	**Employee Participation**		
1.	Readiness to institutionalize benchmarking implementation	0 1 2 3 4 5	0 1 2 3 4 5
2.	Understand their role towards benchmarking adoption	0 1 2 3 4 5	0 1 2 3 4 5
3.	Clearly understand organization vision and mission	0 1 2 3 4 5	0 1 2 3 4 5
4.	Work as a team that create strong social ties among team members	0 1 2 3 4 5	0 1 2 3 4 5
5.	Development of strong culture that improve performance	0 1 2 3 4 5	0 1 2 3 4 5
6.	Committed to any quality improvement activities	0 1 2 3 4 5	0 1 2 3 4 5
7.	Benchmarking teams are committed and have best practice mind-set	0 1 2 3 4 5	0 1 2 3 4 5
F6	**Customer Satisfaction**		
1.	Develop the strategy to comply with the customerôs need	0 1 2 3 4 5	0 1 2 3 4 5
2.	Obtain customersô feedback about your product	0 1 2 3 4 5	0 1 2 3 4 5
3.	Responsive to customer complaint	0 1 2 3 4 5	0 1 2 3 4 5
4.	Utilize customer satisfaction as a performance indicator	0 1 2 3 4 5	0 1 2 3 4 5
5.	Committed to customer	0 1 2 3 4 5	0 1 2 3 4 5
F7	**Process and Innovation Management**		
1.	Reduction in process cycle time	0 1 2 3 4 5	0 1 2 3 4 5
2.	Build creativity capability based on available resources	0 1 2 3 4 5	0 1 2 3 4 5
3.	Build innovation capability based on available resources	0 1 2 3 4 5	0 1 2 3 4 5
4.	Integrating new form of technology in existing process to enhance the productivity	0 1 2 3 4 5	0 1 2 3 4 5
5.	Develop a standard quality process to establish strong brand name	0 1 2 3 4 5	0 1 2 3 4 5
F8	**Business Performance**		
1.	Use financial and non-financial measures to measure business success	0 1 2 3 4 5	0 1 2 3 4 5
2.	Measure business performance regularly	0 1 2 3 4 5	0 1 2 3 4 5
3.	Strategically plan for profits	0 1 2 3 4 5	0 1 2 3 4 5
4.	Focus on cost reduction	0 1 2 3 4 5	0 1 2 3 4 5
5.	Ensure growth in market share	0 1 2 3 4 5	0 1 2 3 4 5
6.	Focus on the needs of shareholders, employees, customers, suppliers and the community.	0 1 2 3 4 5	0 1 2 3 4 5
7.	Benchmark the organization performance with other organization	0 1 2 3 4 5	0 1 2 3 4 5

SECTION 4: RESPONDENT INFORMATION

Job title: _____
Year of employment: _____
Email address: _____

Would your company be interested to participate in the next phase of this study?

☐ Yes ☐ No ☐ Will consider

THANK YOU VERY MUCH FOR PARTICIPATING IN THIS STUDY, ALL THE RESPONSES WILL BE TREATED WITH THE UTMOST CONFIDENCE AND NO SIGLE SET OF RESPONSE WILL BE IDENTIFIABLE.

APPENDIX B

PUBLICATION

Contents lists available at Science-Gate

International Journal of Advanced and Applied Sciences

Journal homepage: http://www.science-gate.com/IJAAS.html

Critical success factors for benchmarking implementation in oil palm industry

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ARTICLE INFO

Article history:
Received 1 February 2017
Received in revised form
28 July 2017
Accepted 28 July 2017

Keywords:
Critical success factor
Benchmarking
Oil palm industry
Perception
Significance

ABSTRACT

This paper aims to provide the empirical evidence on the importance and practice of eight identified critical success factors (CSFs) for implementing benchmarking in oil palm industry. Prior to conducting the full survey, a pilot study and validation by benchmarking experts in this field was conducted to ensure the survey questionnaire is reliable and valid. The Cronbach alpha values for all the eight critical success factors were higher than 0.7, which means they are reliable. To achieve this objective, 700 sets of survey questionnaire were distributed among oil palm planters and millers in Malaysia. This survey has received a good response rate of 49%. On overall, the survey results had indicated that there is a significant different between actual practice of CSFs compared to their perception of importance. In the authors' opinion this survey findings would be useful and considerable interest to all level of benchmarking practitioners in the oil palm industry.

1. Introduction

Process improvement is crucial for every organization's survival and growth. One of the most efficient ways to improve a process is to learn from the experience of others. Thus, Lee et al. (2006) beliefs that despite various sophisticated instruments engaged by the multinational companies, benchmarking as one of the simplest tool has been proven for its effectiveness to improve performance in many areas. Benchmarking makes it easy to identify the gap between where the organization would like to be, where it actually is now and this gap provides a measure of the improvement an organization would like to make (Magd and Curry, 2003). Nevertheless, Chin et al. (2008) have shown that many benchmarking implementation efforts have failed because the critical success factors were not correctly determined and put in-placed. Even though there has been a large number of articles published related to benchmarking in the last few decades, only very few articles focused on documenting the CSFs of benchmarking.

Therefore, this paper aims to identify the CSFs of benchmarking and provide the empirical evidence on the importance and practice of each CSFs for implementing benchmarking in the oil palm industry. This paper will be structured as follows: first, the review of critical success factor in past studies from different industries. It is followed by describing the methodology used in this research. The final section presents an analysis on the perception of level of importance and extent of practices of the CSFs in oil palm industry. Several significant tests were performed to investigate the existence of differences between the level of importance and practice and the relationship among CSFs. These analyses were conducted for both; oil palm plantation and palm oil mill. Finally, the paper culminates with the general conclusions from the survey together with some recommendations to improve any of the attributes on the CSFs adoption.

2. Literature review on critical success factor

CSFs are those which are essential to the success of any program or technique, in the sense that, if objectives associated with the factors are not achieved, the process stands a good chance of ending in failure (Rungasamy et al. 2002; Thiagarajan and Zairi, 1998).

According to Fryer et al. (2007), it is important to define the CSFs for benchmarking implementation in

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https://doi.org/10.21833/ijaas.2017.09.017

order to increase the success rate, reduce costs and prevent disillusionment with continuous improvement programs. Meanwhile, Dobbins and Donelly (1998) defined the CSFs as "key areas; where things must go right for the business to flourish. If results in these areas are not adequate, the organization's efforts for the period will be less than desired". Therefore, these CSFs must be constantly monitored, maintained and improved to ensure successful performance by the organization (Guimaraes and Langley, 1994). Gadenne and Sharma (2009) classified the CSFs into two groups; 'soft' factors and 'hard' factors. The 'soft' factors are more concerned on behavioral aspects and, tool and systems aspects are more related to 'hard' factors. Both soft and hard factors complement each other.

Through a comprehensive literature review, the authors have identified eight critical success factors with 54 attributes that believed to be critical for benchmarking implementation. The CSFs encompass of Top Management and Leadership, Human Resources Management, Employee Satisfaction Management, Policy and Strategic Planning, Employee Participation, Customer Satisfaction Management, Process and Innovation Management and Business Performance. Table 1 shows the general description of each identified CSFs.

There are many different researchers that have attempted to investigate the CSFs in benchmarking implementation which covered in different field of study and industries as summarized in Table 2. Guven-Uslu (2005) had identified a set of CSFs extracted from two frameworks. The first framework was from the receptive contexts of change model and the second was from the EFQM Business Excellence Model. He classified the CSFs into three categories namely, external factors, organizational factors and individual factor of benchmarking implementation.

Table 1: Description of critical success factors

	CSFs	Description
F1	Top Management Commitment and Leadership	How the behavior and actions of the executive team and all other leaders inspire, support and promote a culture of business excellence as the best way to achieve the organization's objectives
F2	Human Resources Management	How the organization manages its resources (financial resources, information resources, technological resources, material resources and fixed assets within the organization) effectively and efficiently
F3	Employee Satisfaction Management	What the organization is achieving in relation to the satisfaction of its employees
F4	Policy and Strategic Planning	How the organization formulates, deploys, reviews, turns policy and strategy into plans and actions
F5	Employee Participation	How the organization releases the full potential of its people
F6	Customer Satisfaction Management	What the organization is achieving in relation to the satisfaction of its external customers
F7	Process and Innovation Management	How the organization identifies, manages, reviews and improves its processes
F8	Business Performance	What the organization is achieving in relation to its planned objectives and in satisfying the needs and expectations of everyone with an interest or other stake in the organization

Table 2: Critical success factors of benchmarking

Researcher	Type of industry	Critical success factor							
		F1	F2	F3	F4	F5	F6	F7	F8
Guven-Uslu (2005)	Health	X			X	X			
Hwang and Lockwood (2006)	Tourism		X	X			X		
Kyriakidou and Gore (2005)	Tourism			X		X	X		
Sohal and Terziovski (2000)	Manufacturing	X		X	X	X	X		
Mohamed (1996)	Construction	X	X			X		X	
Brah et al. (2000)	Manufacturing and service	X	X			X			
Fuller (2000)	Health and safety							X	X
Meybodi (2009)	Manufacturing		X	X	X	X	X		X
Kowalski and Swanson (2006)	Communication	X		X		X		X	

From in-depth interviews conducted with owners, managers and staff in 89 award-winning business in the hospitality and tourism industry, Hwang and Lockwood (2006) identified seven CSFs associated with benchmarking implementation success, namely; customer focused goals, planning and control, partnering and networking, internal and external communication, achieving consistent standards, strategic workforce management, cash flow and performance management. Hwang and Lockwood (2006) strongly stressed that the emphasis could move away from copying competitors and gaining competitive advantage through distinctive performance, to rather motivating and allowing experience sharing in networks regarding mutual problems for future excellence.

Based on a survey conducted by Sohal and Terziovski (2000) among 895 manufacturing companies in Australia, they discovered that positive attitude towards quality improvement, leadership education and training, integrating the voice of the customer and the supplier, developing appropriate performance indicators and rewards are the most critical factors to the TQM implementation success. In addition, the needs and culture of the organization must be developed and supported at all levels with adequate training and education must be imparted. In order to investigate the state of benchmarking in the manufacturing and service sectors of Singapore, Brah et al. (2000) had examined the factors that affect the implementation of a benchmarking process. They identified top level management support, employee participant, internal self-

assessment and self-benchmarking process as the preconditions or the critical factors before the companies can start a benchmarking program. Conversely, lack of consideration of the above CSFs will lead to the failure in the organization benchmarking effort.

Value management (VM) is a powerful technique to increase the value of a product or services by reducing its production or other costs. Based on study conducted by Fong et al. (2001), there is several critical factors of benchmarking VM success were identified. They are management commitment, group effectiveness, customer satisfaction, brainstorming and project team formation. Kowalski and Swanson (2006) main objective was to provide a framework of critical success factors for practitioners and employers looking to develop new or enhance existing telework programs. These critical success factors include support, communication, and trust. They are interrelated and should be applied at multiple levels including organizational, managerial, and employee levels. The researchers emphasize on the role of top management in creating the culture of trust, facilitate the good communication and provide sufficient training to all level of employees.

Table 2 also revealed the deficiency in some of CSFs identification research. For example, Sohal and Terziovski (2000) did not consider human resource management, process and innovation management and business performance. Meanwhile, Fuller (2000) only concerned on two CSFs (i.e. process and innovation management and business performance). Clearly, not even one researcher had considered the wholesome of CSFs as identified in this paper. Therefore, the needs to discover and overcome these deficiencies are very important in ensuring the success of benchmarking implementation. In addition, there is no specific literature that conducted a review on benchmarking CSFs in the oil palm industry. However, through a comprehensive literature review, identification was done by looking at CSFs of previous benchmarking studies involving a variety of areas and types of industry.

3. Research methodology

3.1. Survey instrument

The methodology adopted in this research is a self-administered questionnaire with pilot tests and validation by benchmarking experts (i.e. benchmarking practitioners and academicians) before being distributed to the respondents. A pilot study was conducted by visiting a few of oil palm plantations and mills. Based on the results and comments from the pilot tests and validations, revisions were made to the questionnaire design and contents.

The final survey instrument was distributed via postal mail to 350 palm oil mill managers and 350 oil palm plantation managers in Malaysia. The respondents were asked to rate the level of perception on the importance and the extent of actual practices on each of benchmarking CSFs in their organization. For the perceived importance, the rating scale ranged from 0 = don't know/unsure, 1 = not important at all, 2 = not important, 3 = neutral, 4 = important and 5 = very important. Meanwhile for actual CSFs adoption and practice in their organization, the rating scale used were from 0 = don't know/unsure, 1 = very low, 2 = low, 3 = moderate, 4 = high to 5 = very high.

In addition, the instrument was examined using Cronbach alpha to test the consistency of each item to be assessed in the questionnaires as tabulated in Table 3. All factors in the survey instrument have Cronbach alpha values of more than 0.70, which indicates the instrument is reliable (Coakes et al., 2006). In order to ensure high response rate, support letters for the survey were obtained from Malaysian Palm Oil Board (MPOB) and top management of several palm oil companies. These support letters were attached together with the survey instrument during distribution to the respondents. As a result, a total of 343 companies (i.e. 163 from oil palm plantations and 180 from palm oil mills) responded to the questionnaire giving a response rate of about 49%.

3.2. Hypotheses

The following formal hypotheses were formulated based on the respondent perception on the importance and practice of CSFs from the survey. All statistical analyses in this paper were performed by using a statistical software package SPSS 22.0 for Windows.

H1. There is no significant difference between the means of the importance and practice of CSFs in oil palm plantations.
H2. There is no significant difference between the means of the importance and practice CSFs in palm oil mills.

4. Findings and analysis

4.1. Respondents' demographic background

All respondents were assumed to have a broad knowledge and well-experienced with respect to the firm's operational and practices because majority of them have more than ten years' working experience in the oil palm industry. Approximately 47% of the respondents had obtained some form of quality certification, while the remaining 53% were not certified to any quality certification system.

4.2. Importance and practice of CSFs in oil palm plantations and palm oil mills

The main purpose of this section is to discover the perception on the importance and the extent of practice of eight benchmarking CSFs in oil palm

plantations and palm oil mills. The analysis was conducted using Paired comparison t-test to test the existence of the significance difference between importance and practice of CSFs.

From Table 4 and Table 5, it appears that, there were significance differences in mean values for all success factors and generates the p-values of less than 0.05 for oil palm plantations and palm oil mills; hence the Hypothesis 1 and Hypothesis 2 were rejected. For both, plantations and mills perceived that the three most critical factors that must be considered to ensure the success of benchmarking implementation are Customer Satisfaction Management, Process and Innovation Management and Top Management Commitment and Leadership.

Meanwhile, Employee Satisfaction Management and Policy and Strategic Planning become the two least factors practicing factors. However, the respondents may have full awareness on all critical success factors of benchmarking implementation but they failed to fully practice it in their organization. For both; oil palm plantation and palm oil mill, there is large difference in mean value of the importance and actual practice appears for Top Management Involvement and Leadership and Employee Participation benchmarking CSFs.

Lack of readiness of top management to harmonize the benchmarking in organization's policy and strategic planning may lead to existence of this gap.

The desires to learn, openness, build a sense of urgency and awareness to adopt new initiatives must come from top management. As stated by Seetharaman et al. (2006), with a clear line of responsibility and command running up to an accountable individual at the top of the management and reviewing quality improvement is another method of showing management commitment.

Table 3: CSFs reliability test

	Benchmarking CSFs	No. of item	(α) Value
F1	Top Management and Leadership	8	0.953
F2	Human Resources Management	6	0.938
F3	Employee Satisfaction Management	7	0.968
F4	Policy and Strategic Planning	8	0.956
F5	Employee Participation	7	0.950
F6	Customer Satisfaction Management	5	0.928
F7	Process and Innovation Management	5	0.944
F8	Business Performance	7	0.960

Table 4: Paired Sample t- test for Mean importance and practice for oil palm plantations

CSFs	NO. OF ITEMS	OIL PALM PLANTATION			
		Importance (mean)	Practice (mean)	Diff. in mean	p-value
F1 : Top management Commitment and Leadership	8	4.28	3.77	0.515	*0.000
F2 : Human Resources Management	6	4.02	3.90	0.375	*0.000
F3 : Employee Satisfaction Management	7	3.95	3.48	0.474	*0.000
F4 : Policy & Strategic planning	8	4.17	3.66	0.513	*0.000
F5 : Employee Participation	7	4.21	3.70	0.510	*0.000
F6 : Customer Satisfaction Management	5	4.32	3.86	0.456	*0.000
F7 : Process and Innovation Management	6	4.29	3.92	0.375	*0.000
F8 : Business Performance	7	4.24	4.01	0.231	*0.000

Notes: N = 163 oil palm plantations; * Significant at level p < 0.05

Table 5: Paired Sample t- test for Mean importance and practice for palm oil mill

CSFs	NO. OF ITEMS	PALM OIL MILL			
		Importance (mean)	Practice (mean)	Diff. in mean	p-value
F1 : Top management Commitment & Leadership	8	4.14	3.51	0.635	*0.000
F2 : Human Resources Management	6	3.84	3.23	0.607	*0.000
F3 : Employee Satisfaction Management	7	3.86	3.15	0.711	*0.000
F4 : Policy and Strategic planning	8	3.96	3.34	0.626	*0.000
F5 : Employee Participation	7	3.98	3.29	0.691	*0.000
F6 : Customer Satisfaction Management	5	4.15	3.70	0.450	*0.000
F7 : Process and Innovation Management	6	4.02	3.44	0.578	*0.000
F8 : Business Performance	7	4.02	3.59	0.433	*0.000

Notes: N = 180 palm oil mills; * Significant at level p < 0.05

In the meantime, the absence of readiness to change or the change occurs rapidly may create the anxiety to the employees to fully participate in benchmarking implementation (Mahmud et al., 2012).

Findings also show that there is a need to emphasize and fully practice in balance of all eight CSFs in order to increase the success rate of benchmarking adoption in oil palm industry. For instance, the critical factors that need to be given attention in oil palm plantation and palm oil mill are the Policy and Strategic Planning, Employee Participation and Customer Satisfaction Management. By incorporating benchmarking in strategic planning process and clearly apprise the employee on organization vision and mission will increase their readiness to participate and institutionalize benchmarking implementation. Subsequently, this will lead to the enhancement of customer satisfaction management and increase the customer loyalty.

5. Conclusion

From the analyses, it is clearly seen that organization which desired to successfully implement benchmarking shall aware and practice the CSFs which had been identified in this paper. The authors strongly believed that this finding may be able to provide the richness of knowledge and guidance to oil palm managers and policy makers for implementing benchmarking. Since the survey was conducted and the analysis was performed separately between oil palm plantation and palm oil mill. This is in relation to the need to produce high quality and high rate of oil extraction from the mills relatively important for the oil palm plantation to produce high yield and high quality of fresh fruit bunch (FFB). This paper revealed that there is significance difference on the importance and actual practice of identified benchmarking CSFs in oil palm plantation and palm oil mill. By incorporating these findings in the benchmarking implementation process, it will help the benchmarking practitioners in oil palm industry to obtain full benefits from the benchmarking initiative and avoid failure during implementation. Future research could scrutinize the impact of the benchmarking CSFs practices towards company ownership and quality certified company.

References

Brah SA, Ong AL, and Rao BM (2000). Understanding the benchmarking process in Singapore. International Journal of Quality and Reliability Management, 17(3): 259-275.

Chin KS, Chan BL, and Lam PK (2008). Identifying and prioritizing critical success factors for coopetition strategy. Industrial Management and Data Systems, 108(4): 437-454.

Coakes SJ, Steed L, and Dzidic P (2006). SPSS version 13.0 for Windows: Analysis without anguish. John Wiley and Sons Australia Ltd, Queensland, Australia.

Dobbins JH and Donelly RG (1998). Summary research report on critical success factors in federal government program management. Acquisition Review Quarterly, 61-81. Available online at: http://www.dtic.mil/docs/citations/ADA487780

Fong PSW, Shen Q, and Cheng EWL (2001). A framework for benchmarking the value management process. Benchmarking: An International Journal, 8(4): 306-316.

Fryer KJ, Antony J, and Douglas A (2007). Critical success factors of continuous improvement in public sector: A literature review and some key findings. The TQM Magazine, 19(5): 497-517.

Fuller C (2000). Modelling continuous improvement and benchmarking processes through the use of benefit curves. Benchmarking: An International Journal, 7(1): 35-51.

Gadenne D and Sharma B (2009). An investigation of the hard and soft quality management factors of Australian SMEs and their association with firm performance. International Journal of Quality and Reliability Management, 26(9): 865-880.

Guimaraes T and Langley K (1994). Developing innovation benchmarks: an empirical study. Benchmarking for Quality Management and Technology, 1(3): 3-20.

Guven-Uslu P (2005). Benchmarking in health services. Benchmarking: An International Journal, 12(4): 293-309.

Hwang LJJ and Lockwood A (2006). Understanding the challenges of implementing best practices in hospitality and tourism SMEs. Benchmarking: An International Journal, 13(3): 337-354.

Kowalski KB and Swanson JA (2006). Critical success factors in developing teleworking programs. Benchmarking: An International Journal, 12(3): 236-249.

Kyriakidou O and Gore J (2005). Learning by example: Benchmarking organizational culture in hospitality, tourism and leisure SMEs. Benchmarking: An International Journal, 12(3): 192-206.

Lee YP, Zailani S, and Soh KL (2006). Understanding factors for benchmarking adoption: New evidence from Malaysia. Benchmarking: An International Journal, 13(5): 548-565.

Magd H and Curry A (2003). Benchmarking: Achieving best value in public-sector organisations. Benchmarking: An International Journal, 10(3): 261-286.

Mahmud F, Deros BM, Wahab DA, and Rahman MNA (2012). A Survey on The Barrier of Benchmarking in Malaysia oil palm industry. Jurnal Teknologi, 59(2): 47-54.

Meybodi MZ (2009). Benchmarking performance measures in traditional and just-in-time companies. Benchmarking: An International Journal, 16(1): 88-102.

Mohamed S (1996). Benchmarking and improving construction productivity. Benchmarking for Quality Management and Technology, 3(3): 50-58.

Rungasamy S, Antony F, and Ghosh S (2002). Critical success factors for SPC implementation in UK small and medium enterprises: Some key findings from a survey. The TQM Magazine, 14(4): 217-224.

Seetharaman A, Sreenivasan J, and Boon LP (2006). Critical success factors of total quality management. Quality and Quantity, 40(5): 675-695.

Sohal AS and Terziovski M (2000). TQM in australian manufacturing: Factors critical to success. International Journal of Quality and Reliability Management, 17(2): 158-167.

Thiagarajan T and Zairi M (1998). An empirical analysis of critical factors of TQM. Benchmarking for Quality Management and Technology, 5(4): 291-303.