A Study on Benchmarking Technique Understanding and Knowledge in Malaysia Palm Oil Milling Industry

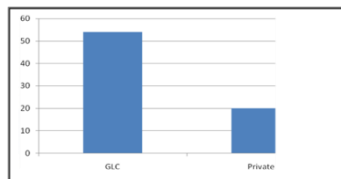Norashikin Rahman[a*], Baba Md.Deros[a], Mohd. Nizam Ab Rahman[a]

[a]Department of Mechanical & Materials Engineering, Faculty of Engineering & Built Environment, Universiti Kebangsaan Malaysia, 43600, UKM, Bangi, Malaysia

*Corresponding author: norashikin.r@gmail.com

Graphical abstract

Abstract

Benchmarking is a tool that can lead to broad improvements to an organization. It has been implemented in various industries such as manufacturing and services. The objective of this study is to identify the level of understanding and knowledge on benchmarking in palm oil milling industry. A survey instrument, tested for reliability and validity by experts and practitioner was developed to collect data from respondents involved the palm oil milling industry. Later, the survey questionnaire which comprise of two sections was distributed through postal mail and email to 230 respondents in different palm oil milling industry. Seventy four survey questionnaires were completed and returned, giving a response rate of 32.2%. Analysis of survey results shows that 18.9% of respondents are in good category, 71.6% are still in moderate category and 9.5% in low category. Thus, it can be concluded that 81.1% of survey respondents in palm oil milling industry is still lacking of knowledge and understanding in benchmarking concept. Further guidance, support and awareness are really needed to encourage more organisations in palm oil industry to use benchmarking in order to survive and remain competitive.

Keywords: Benchmarking; palm oil; study; understanding; knowledge

Abstrak

Penandaarasan ialah satu alat yang boleh membawa kepada peningkatan yang besar kepada sebuah organisasi. Ia telah dilaksanakan dalam pelbagai industri seperti pembuatan dan perkhidmatan. Objektif kajian ini ialah untuk mengenal pasti tahap pemahaman dan pengetahuan berkaitan topik penandaarasan di dalam industri pemprosesan minyak sawit. Satu peralatan tinjauan yang telah diuji untuk kebolehpercayaan dan kesahihan oleh pakar dan pengamal dibidang berkaitan telah dibangunkan untuk memperolehi data daripada responden yang terlibat di dalam industri pemprosesan minyak sawit. Soalan kaji selidik yang terbahagi kepada dua bahagian ini telah diagihkan melalui pos dan e-mel kepada 230 responden di dalam organisasi yang berbeza. Tujuh puluh empat soalan kaji selidik telah lengkap dijawab dan dikembalikan. Ini memberikan kadar maklum balas sebanyak 32.2%. Analisis daripada hasil kajian menunjukkan sebanyak 18.9% responden berada dalam kategori sangat baik, 71.6% masih di dalam kategori sederhana dan 9.5% di dalam kategori rendah. Oleh itu, ia boleh disimpulkan bahawa 81.1% responden kaji selidik dalam industri pemprosesan minyak sawit masih kekurangan pengetahuan dan kefahaman dalam konsep penandaarasan. Panduan, sokongan dan kesedaran benar-benar diperlukan untuk menggalakkan lebih banyak organisasi dalam industri pemprosesan sawit untuk menggunakan penandaarasan bagi terus kekal dan berdaya saing.

Kata kunci: Penandaarasan; kelapa sawit; kajian; pemahaman; pengetahuan

∎1.0 INTRODUCTION

In the age of globalization, in order to stay competitive, one need to be consistently maintain high quality and productivity. Malaysia palm oil industry has contributed significantly in the world market. Currently, Malaysia accounts for 39% of world's palm oil production and 44% of world exports. Malaysia also accounts for 27 % exports of oils and fats to the world and 12% from the other oils and fat produced in the country [1]. This industry provides job opportunity to more than half million people and livelihood to estimated one million people. Approximately, 4.49 million hectares of land in Malaysia are used for oil-palm cultivation. This will produce up to 17.773 tonnes palm oil and 2.13 tonnes palm kernel oil [1]. In Malaysia, there are 410 palm oil processing plants. Sabah a state in the Malaysian Federation has the highest number with 117 plants. Palm oil or the scientific

name, *Elaeis guineensis jacq* planted in Malaysia is a hybrid of *dura* and *pesifera* [2].

There are many factors that affect productivity of oil palm. Various improvement plans and tools were initiated and implemented to improve the productivity of palm oil processing industry. In recent years, awareness on product and process sustainability had led to the development and implementation of a wide range of instrument for measuring, evaluating and comparing the performance [3]. Benchmarking is the easiest improvement tool practiced by huge companies for its effectiveness, which dramatically improve the performance in various areas [4]. Knowledge and understanding on benchmarking technique is a prerequisite prior to implementing benchmarking initiative. Hence, it is important for an organisation to have sufficient knowledge and understanding on benchmarking technique before embarking to implement benchmarking at their respective oil palm milling plants. This is vital to ensure success of the benchmarking adoption. Thus, this paper aims to identify the level of understanding and knowledge on benchmarking in palm oil milling industry.

■2.0 LITERATURE REVIEW

In this modern and rapid changing world, ability for companies to be more competitive will determine their position in the market place. Many initiatives were taken to improve companies' performance. In order to have an advantage over their competitors, it is not sufficient or good enough for a company to increase its productivity. Consistent implementation of quality improvement tools and performance will give a great impact to a company. Total Quality Management (TQM) is a philosophy that can bring a significant performance improvement and minimize cost to the company which practising it [5]. According to Dale & Cooper [6], TQM is a philosophy and a set of principles that could be used as a guide to manage an organisation, based on basic understanding that improvement needs to be made continuously and comprehensively.

Benchmarking is a systematic method to measure and evaluate products, services and best practices of the market leader to determine the level it can be used to assess current performance and adopt best practices to achieve market leader processing performance and improved product quality [7]. It also recognised as an important tool for continuous improvement of quality [8]. According to Zairi [9], benchmarking technique was originated from Japan. In middle of 1980s, Rank Xerox was the pioneer of this technique in Western countries. Modern benchmarking emerged as a powerful management technique in 1979 and early 1980s [10; 11]. In 1990s, about 500 large organisations had implemented benchmarking initiative. However, due to lack of knowledge and understanding in benchmarking technique, not all organizations had implemented it successfully [12]. Although many organizations realized that continuous effort is crucial in knowing and implementing best practices in order to stay competitive, most of them are still determined in achieving its effectiveness [12].

Implementing benchmarking is not only for the sake of making changes. It is about adding values to the current products or services. Organizations will not be making changes if the changes does not bring any profit or benefit to them [13]. Kumar & Chandra [12] believed that benchmarking could give better understanding towards the strengths and weaknesses in processes, improving cycle time, supply chain management and production cost. Benchmarking could also assist organisation in achieving and maintaining competitive advantage and striving for the world class performance [11].

At present, vegetable oil markets have increased competition. Palm oil processing industry should have the ability to compete locally in terms of price and quality in order to develop, survive and continue to grow, [14, 15, 16 & 17]. As the world leading palm oil producer, it is very important for Malaysia palm oil industry to stay competitive and always strive for improving current performance. Benchmarking is the process of identifying, understanding and adapting outstanding practices from within the organization or from other businesses to help improve performance. It assists organizations to focus on the external environment and to improve process efficiency [17]. Benchmarking should be a continuous ongoing process and integrated into basic processes throughout the organisation [17]. Several factors that lead to failure in benchmarking implementation, including lack of benchmarking metric, synchronization of best practices, no strategy and check list, and lack of benchmarking definition and understanding as well as feedback to targeted business plan [4, 19]. It is crucial for an organization to understand and have sufficient knowledge before embarking on benchmarking initiatives in their respective plant.

■3.0 METHODOLOGY

In this study, survey questionnaires were sent out to 230 respondents involved in palm oil milling industry. The questionnaires were distributed randomly via postal and email to all the states in Malaysia, including Sabah and Sarawak. Out of these 230 respondents, 74 respondents had returned the questionnaires with complete answers. This gives a response rate of 32.2%, which the authors felt is acceptable in this type of survey and quite high compared to previous study [20, 21 & 22]. Reply-paid and self-addressed envelope was included while sending the questionnaire to the respondents to encourage them to answer and reply.

This questionnaire consists of two sections: first section comprise of general information while second section for benchmarking opinion. Second section of questionnaires consists of seventeen parameters to collect data with respect to respondents' level of understanding and knowledge on benchmarking techniques. For this study, Likert scale of six-points was employed. The scale is from 0 to 5, with meaning of (0) "unsure", (1) "strongly disagree", (2) "disagree", (3) "neutral", (4) "agree" and (5) "strongly agree".

The respondents of this survey comprise of managers, assistant managers and engineers. Implementation and achievement of benchmarking technique is much dependent on the respondents' awareness, desire to change; adequate and correct knowledge and understanding on benchmarking technique. In palm oil milling plant, these respondents have sufficient knowledge in improvement tools and involved directly to the processes, as well as to initiate improvement plans for their plant.

■4.0 RESULT AND DISCUSSION

4.1 Reliability and Validity Test

The questionnaire was validated by experts (academicians and practitioners), pilot tested and finalised before the actual study took place. Most of the suggestions and comment by experts were analysed and some modifications were made to improve the questionnaire. For reliability of survey instrument, internal consistency of the parameters was assessed using SPSS Version 18 reliability analysis procedure. For this study, Cronbach's alpha

value is 0.88 and the survey instrument proved for high consistency [21, 22 & 23].

4.2 General Background Information

Referring to Table 1, it shows the number of respondent with respect of years of working experience. From this survey result, more than half of the respondents are having more than 10 years of experiences of working in palm oil industry. It means these respondents have a broad knowledge and understanding on practices, operation and nature of palm oil processing industry. While 22% are having experiences for six to ten years and 17% with less than six years of experiences in palm oil industry.

Table 1 Experience background for respondents

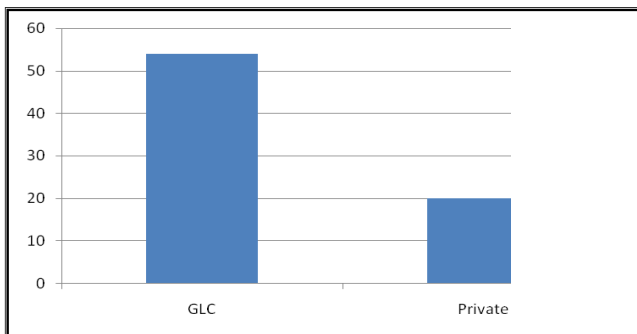| Years of experience	Number of respondents	Percentage, %
More than ten	45	61
Six to ten	16	22
Less than six	13	17

Figure 1 Type of business ownership

Figure 1 shows the number of companies with respect to the type of ownership. Fifty four companies are government-linked companies (GLC), while 20 companies belong to private. From these 54 GLC, 48 of them are certified with at least one quality certification. While for private ownership companies, 16 out of 20 obtained quality certification.

4.3 Level of Understanding and Knowledge in Benchamrking

For level of understanding and knowledge in benchmarking, Table 2 shows the mean score of each statement. From Table 2, it can be seen that majority of respondents seem to understand and agree that:

- Benchmarking implementation is a technique that allows us to learn from others. (4.41) [24]
- Respondents also believed that benchmarking could improve their organizations performance. (4.33)[25]

- Benchmarking could identify weak areas that need to be improved. (4.31)[26]
- Through benchmarking, respondents understand that it could raise their awareness about current performance. (4.18)[8]

Table 2 Mean value for each statement

Parameter	Mean Value
Improve performance	4.33
Improve creativity and innovation	4.06
Raise awareness about current performance	4.18
Learn from others	4.41
Have greater involvement of staff	3.78
Increase willingness to share solutions to common problems	4.12
Better understand the 'big picture'	4.10
Identify weak areas that needs to be improve	4.31
Create an atmosphere conducive to continuous improvement	4.12
Challenge operational complacency	3.76
Create a readiness for action	3.91
Accelerate and manage change	3.94
Understand world-class performance	3.81
Do not make better-informed decisions	3.74
Create greater openness about your strengths and weaknesses	3.59
Have greater confidence in applying new approaches	3.83
Gain a narrow perspective of the factors (or enablers) that facilitate implementation of good practices	3.09

Also from Table 2, it can be seen some statements have low mean score compared to others. Some respondents still have doubt that benchmarking implementation could assist them to know the factors that facilitate implementation of good practices. This might be the result from lack of improvements plans or initiatives in the plants. However, these statements are crucial to achieve successful benchmarking and TQM implementation in the organization. In order to avoid careless answers, which lead to invalid response to the questionnaires, statements 14 and 17 were designed using negative statements.

These 17 parameters were used as 'score' for each respondent company in order to discover the level of understanding and knowledge on benchmarking. Higher score is explained having better understanding and knowledge compared to others [8, 27]. Table 3 shows the scores obtained from survey questionnaire. The maximum score for these 17 statements is 85. In this study, the authors had classified respondents into three different categories [27]. This is to segregate them into three different categories, such as: good (Category I), moderate (Category II) and low (Category III).

The mean score for this study was 66 points and one standard deviation (SD) above the mean gives a score of 74. Respondents scoring above this score were assumed to have 'good' understanding and knowledge of benchmarking. Respondents that scored from 58 to 74 inclusive (± 1SD from the mean) have 'moderate' understanding and knowledge while for those scoring below 58 was assumed to have low understanding and knowledge [27].

For this study, about 18.9.5% of respondents had high understanding and knowledge. Meanwhile, for category II, about 71.6% of respondents scored from 58 to 74 points, which shows

moderate understanding and knowledge on benchmarking topics. While low understanding and knowledge on benchmarking topic was classified into category III, and about 9.5% of respondents scored below 58 points.

Table 3 Respondents group according to the 'score'

Score	Understanding & knowledge group	No. of respondent	Percentage	Cumulative percentage
<58	III	7	9.5	9.5
58-74	II	53	71.6	81.1
75-85	I	14	18.9	100

∎5.0 CONCLUSION

As a conclusion, for demographic data analysis, it illustrates that majority (73%) of respondents are form GLC and another 27% from private company. Regardless of type of ownership, not all GLC or private company obtain quality certification.

The respondents had been classified into three distinct groups; with fourteen companies have good understanding and knowledge in benchmarking. Meanwhile, 53 companies have moderate understanding and knowledge in benchmarking. From the study, it can be concluded that about 71.6% of respondent companies are still in moderate category, 9.5 % in low category and 18.9 % are in the good category. Although this survey shows that more than half of the respondents have moderate and good understanding of benchmarking, it is important to give more exposure and provide further training to encourage benchmarking initiative and implementation in palm oil industry. Lack of exposure, awareness and knowledge might lead to failure in adopting benchmarking in their respective organisation. Hence, it resulted in decreasing business process efficiency and ability to provide competitive advantage in the market place. Sufficient understanding and knowledge is crucial prior to embark benchmarking initiative.

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