

A Review of the Quality Management, Environmental Management And Company Performance: Among Malaysia Food SMEs

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Abstract— Environmental management system(EMS) are important to the success in company performance. This is due to the customer response that they appreciate and willing to pay more for the product that get accredited in terms of environmental management. Many companies believe that by implementing EMS this will incur cost and reduce the profit of the company. Meanwhile, the literature shows that the EMS is one of the key factor that can increased the marketability of the products. However there are research gaps in terms of the implementation of EMS on small medium enterprises. The objectives of this study is to develop a conceptual framework in order to evaluate the relationship between EMS and company performance . The quality management approaches will be considered to identify the factors that influencing the success of company performances when they implement EMS.

Keywords—QM, SME, EMS, Malaysia, Food manufactures.

I. INTRODUCTION

IN Malaysia context, small and medium enterprise (SME) is the important contributor to the countries economy. According to SME Corp in 2010 the 90% of SME are from services sector followed by manufacturing 8.9% and agriculture, mining and construction 4.1%[1]. In 2020 it was forecasted that SME production contributed to 120 million[2]. The Government of Malaysia has shown full commitment to increase the social well being and country welfare. This includes by increasing the employment rate through the investment in SME. The Malaysian government have structured and plan strategies and policies to improve SME through the Second Industrial Master Plan, Third Industrial Master Plan and Vision 2020[3]. However many studies have encompass the problems facing by the SME's . The problems includes lacks of skills in management, financial, productivity , technology and experience(Wan 2003;Hayati et al. 2009).

EMS is a plan and strategies to protect the environment among cooperate sectors including SMEs . Companies that comply with EMS will get a certification from international

bodies and is called ISO14001[4]. A literature on EMS practices in around the world has shown a growth in the number of companies that gets the official certification which is ISO14001. This includes Ford Motor Company that has implement the EMS for all manufacturing plants in 1998. Other automobile manufactures is General Motors, Toyota also implement EMS and encourage their supplier to get the certification[5]. Meanwhile other sectors such as food and processing which is Sun Rise , Boca Food and Kellogs cereal[6,7], microelectronics and pharmaceutical companies in India[8].

Although EMS has received a wide concern among the companies in the whole world, however in Malaysia practices EMS shows a lack of research and data in this area. Study in Malaysia indicated that 36 out of 50 company reported the information on environmental management. Only 36% out of 36 company get ISO14001[9]. Therefore the reported of EMS information in Malaysia context is low. At this point it is interesting to study the linkage between EMS and company performance.

At the present in Malaysia, study on EMS is on the benefits of implementing the EMS. This includes that showed electronics, hotel, restaurants, plastic manufacturing and food manufacturing do agree at least 44% that they gain benefits from EMS[10]. The benefits includes better business control and improvement in company efficiency. Another study indicates the critical success factors(CSF) in implementing the EMS among electric and electronics company[11]. One of the important CSF is management approach. Meanwhile study has showed that company that get ISO14001 was positively correlated with the firm's performance among companies that get official certification [12].

II. LITERATURE REVIEW

EMS is a framework that has been developed and focusing on controlling the water, air emissions and waste disposal. Companies that fulfill the criteria of adopting environment management such as eliminating toxic waste by following certain guideline according to the regulation by international bodies can apply for the certification which is called ISO14001[13]. The industry now do concerns about the increase of awareness among the public regarding

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environment. The industry do see the benefits of cooperation with the government regulation regarding environment as it will lead to the success of the companies. The challenge to get ISO14001 shown that the companies put commitment in decision making process and environment in one of the main decision.

The success to adopt EMS depends on the training, management commitment, communication and social responsibility[14]. Another study in Malaysia indicated that the ISO14001 improve the company performance in the aspect of commitment by the management, marketability of the product and increase customer satisfaction[12]. The benefit of implementing EMS in Malaysia includes, improvement in company image, reputation, customer satisfaction , reduce risk management and success in operations[10].

TQM has contribute to the ideas of EMS . The quality management emphasis on the continous improvement in quality management practice and productivity. TQM has been effective in the improvement of company performance. TQM is a plan on how to obtain a closer customer relation, increase the profits , increase productivity will at a appropriate cost, reducing mistake in operations and using time wisely[15,16].

Previous study showed that TQM has influence the company performance. The benefits of TQM includes customer satisfaction, team work, communication and productivity[17]. However there was difficulty during the implementation of TQM which are attitude and leadership. A TQM can be applies to all companies including SMEs. However there are challenges in adopting TQM in SME includes leadership challenges[15]. Study in Malaysia indicated that in the beginning of the TQM the barriers to implement TQM was leadership commitment and attitudes[17]. Another barriers was the financial and training barriers[18], cultural[19].

Literature describe that SME has face challenges in adopting EMS. For example, leadership and attitudes [20], lack of knowledge and information[21] and financial problems to implement EMS[22]. Study has point out that the problems with EMS in Malaysia among company that get ISO14001 was EMS does not improve in terms of reducing costs and quality in management[12].

III. QUALITY MANAGEMENT PRACTICE

The total quality management (TQM) practices was apply to ensure the quality of the products and services to customer. Quality gurus such as [23] and [24] has highlighted the elements of practices in TQM. For example Saraph et al. has revealed 8 elements which is top management leadership, role of quality department, training, product design, supplier quality management, process management, quality data reporting and employee relations[23]. Furthermore another study [24] revealed 11 practices that includes the TQM practices by [23]and adding 3 elements which is quality policies, communication and customer satisfaction orientation.

The research regarding the quality management practice in Malaysia has been widely increasing in terms of the numbers of company that apply the process due to the competitiveness of the market. In most of the developed country the important component of the quality management was leadership, management, customer focus, information skills and good planning at management level[25]. The study was done among managers in manufacturing to find the relationship between total quality management and operational performance in Australia. The results of the study showed that leadership, human resource and customer focus was significantly related to the performance.

Study in Australian among 364 manufacturing and services companies studied TQM practices as quality reporting of data, supplier quality management, product design and process management. That study focusing on the relationship between TQM and operational performance. Operational performance was measured as inventory management and quality performance. The results indicated that there was positive relationship between process management and product design with performance[26]

a) Corporate planning

In order to make QM and EMS is a success in a company, the corporate planning was a crucial contribution. Corporate planning involving the strategies and planning that was design for the employees to achieve the goals of the company . For example the corporate planning will highlight the responsibilities to achieve the company targets. Study has suggested that the corporate planning requires technical and financial support from top management[22]

b) Human resource development

Training is a major source of improving employee ability to practice and implement the planning that has been set up for the company. EMS is new to some SME especially food industry. Therefore training is really recommended for every level of management to make every players in the company understand the policy, planning and do the procedure of EMS[11,27]

c) Customer focus

One of the aim of EMS is to increase the customer support to the company[10]. Nowadays customer are demanding that the company to apply green supply chain as to show their support towards environmental management. The EMS consulted appointed that the company that implement EMS was actually showing that they have social responsibilities to the nature. Meanwhile the companies in Europe adopt EMS to improve company image to the public [28]

d) Leadership and communication

A high commitment from top management was needed to adopt EMS in companies. Top management must have leadership and good communication skills to make their employees understand and know the important and impact of EMS towards the company mission[29]. The EMS is a referring to the planning and developing an environmental policy of the companies and requires high commitment from

every level from top to bottom management. Therefore leadership and two way communication will make the procedure easier to be adopted.

e) Financial support

The EMS was design to minimize waste and maximize productivity. However to established the EMS was costly due to the documentation. Before the documentation the company need to get advice or consulting a EMS consultant to know the programs that need to be done. Beside that the company need to monitor the process to ensure the success of the EMS programs. The company also need to appoint a leader or champion that can lead the EMS programs in the company [27]

TABLE I
CRITICAL SUCCESS FACTORS FOR QUALITY MANAGEMENT

Year	Author	Factors of TQM
1989	[23]	top management leadership, role of quality department, training, product design, supplier quality management, process management, quality data reporting and employee relations
1996	[30]	Strategic quality management, people and customer management, supplier partnerships, customer satisfaction, external interface management, teamwork , operational quality management, quality improvements, corporate quality culture
2002	[24]	top management leadership, role of quality department, training, product design, supplier quality management, process management, quality data reporting , employee relations quality policies, communication and customer satisfaction orientation.
2010	[31]	Top management support, employee involvement, employee encouragement, quality information , customer focus, training, continues improvement, benchmarking
2014	[32]	leadership, corporate planning, human resources management, customer focus, supplier focus, information management, process management and quality assurance

IV. CONSTRUCTS OF THE ENVIRONMENTAL MANAGEMENT(EM)

The success of the EMS depending on the organization planning in environment management. Previous study proposed the factors that contribute to the success of EMS adoption in the company. Study among 358 companies among European countries suggesting that cooperation between top and lower management level was the most important factors to the success of EMS. Beside cooperation the staff involve in EM should be given training to ensure they understand on how to plan and the documenting the process[22].

Study suggesting that the company should have good communication with other company such as suppliers and retailers and also policy makers as this would be a efficient cooperate planning to the success of EMS[33]. Another study

among the 286 Australia company found that the critical success factors of EM was top management commitment, good communication, allocation of resource and a company appoint a leader to lead the EM[27].

TABLE II
CONSTRUCTS PROPOSED BY LITERATURE ON THE IMPLEMENTATION OF THE EMS

Constructs	Related Constructs
Resources	Technical and financial support [22]; financial support [27],[33]; Operating cost [35];; Optimization of resources(water, electricity) [22] ; increase efficiency by reducing cost[36]; operating cost[10]
Human resource management	Training initiatives[22],[35],[36]; Training [11];Avoidance of personality clashes [22] 2004); consistent training[36] ;
Customer focus	Customer satisfaction[10], [12]; External and social aspects, market pressure, customer requirement, employee relation[11], awareness of suppliers and stake holders[27]
Leadership	Commitment[12] Management commitment [11];top management commitment[27].Top management commitment[29]; commitment [35] ; Corporation and communication [22];
Social responsibility	social aspects[11] ; social pressures [38] ; social responsibilities[34] ; social responsibilities[11] ; social responsibilities [36] ;
Regulations	Government legislation[11]; environmental regulation [37]; environmental compliance [38]
Company image	Company reputation and image [10],[11];; green image [36]; company image [22]) ; business image[35] ;
Environmental conservation (forest, ecosystem)	Environmental conservation [47] ; energy conservation [34];environmental impact [35]; recycling of solid waste [36]

V. PERFORMANCE MEASURES FROM PREVIOUS STUDY

a) Management commitment

Many studies have shown that commitment from top management contributed to the success of a company. Leadership is the crucial factors to ensure the success of the EMS implementation in the company. Study indicates that the top management commitment will increase the customer satisfaction, market position and economy performance[12]. Study among manufacturing that get accredited by ISO14001 indicates that the success of EMS depending on the leadership from the top management[11]

b) Organizational performance

Literatures has suggested many indicators of performance. For example study in Malaysia indicates that the success of EMS can be measured by business and operation performance especially among company that has been accredited[42]. Furthermore another study claimed that there was positive impact of the EMS towards the economic performance of company among electronic manufacturing industry in Malaysia[12]. Another study on food SME has chosen business and operation performance as the indicator of performance in implementing quality management in food industry in Malaysia[32]. In this study two outcome of performance was proposed which is business and operation

performance following [32] and [42].

TABLE III

CONSTRUCTS PROPOSED BY LITERATURE ON THE COMPANY PERFORMANCE

Authors	Measures	Variables
[12]	Management commitment	Customer satisfaction; Market position ; perceived economy
[41]	Organizational cost	Financial performance
[44]	Organizational performance	Financial performance; shared vision; stakeholder management; strategic proactive.
[45]	Cooperate performance	Annual reported sales; formal EMS and certified
[46]	Environmental commitment	Competitive performance; stakeholder satisfaction
[37]	Organizational performance	Business performance;resources and capabilities
[42]	Organizational performance	Operation performance and business performance

VI. CONCLUSION

Many studies has highlighted the importance of EMS in company performance. EMS has been implemented successfully in the manufacturing company especially automotive. However study on EMS among food industry is still left way behind. This is due to the challenging and barriers to implement EMS among food industry. The major waste that was produced by food industry was water, electric and packaging. For a long period of time this can affect the ecosystem and surrounding areas of the industry. In Malaysia context the number of company that implement EMS was still low. The model that was developed will give an information and idea to the food industry on how to practice QM,EM in relation to performance.

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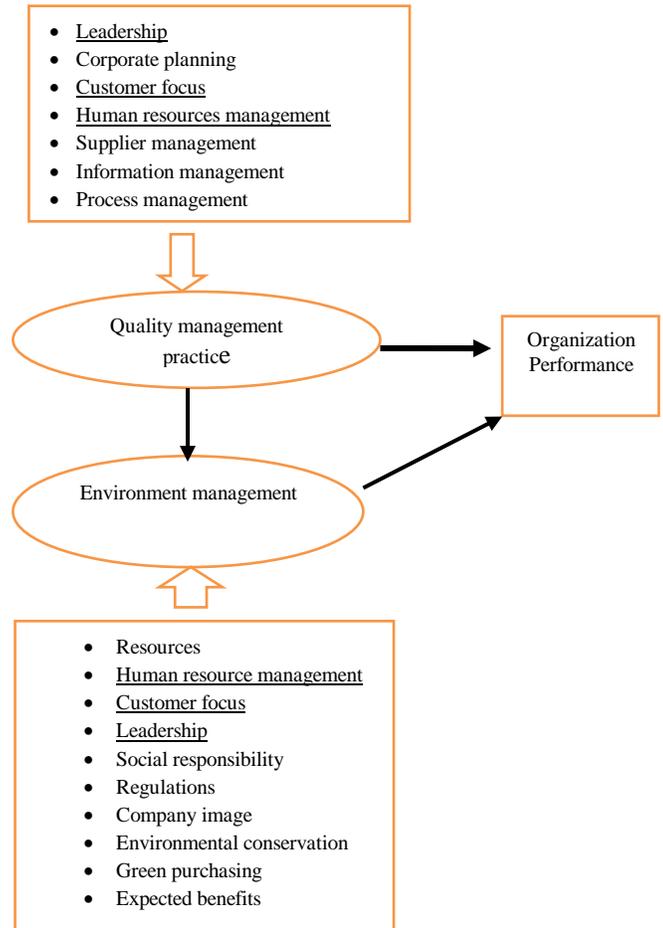


Fig. 1 The Proposed Conceptual Framework