



Faculty of Technology Management and Technopreneurship

**Quality Environment 5S Enhance Service Performance:
A Case Study In Malacca State Government**

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**Master of Business Administration
(Advanced Operation Management)**

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**QUALITY ENVIRONMENT 5S ENHANCE SERVICE PERFORMANCE :
A CASE STUDY IN MALACCA STATE GOVERNMENT**

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ABSTRACT

To be successful, organizations must look into the needs and wants of their customers. That is the reason why many researchers and academicians have continuously emphasized on the importance of customer satisfaction. Customer satisfaction is important because many researches have shown that customer satisfaction has a positive effect on an organization's reputation for non-profit organization. Due to this, the consequences of customer satisfaction and dissatisfaction must be considered. Quality Environment (5S) Practice is a concept which can be applied in the workplace by workers. It creates a more conducive, clean and tidy workplace. Customers will feel happy if they got comfortable feeling and safe during delivering services. If all workers implement Quality Environment 5S as a daily activity, work definitely become faster and easier. In sustaining 5S Practice as a work culture, the organization requires practical initiative to move their employees. This study carried out by researcher is to develop an understanding about the impact of Quality Environment 5S Enhance Service Performance in Malacca State Government. It shows on how organizations have successfully implement Quality Environment give impact to organization in productivity, cost, and delivery service related to enhance the Service Performance

DEDICATION

**To My Beloved Mom Who Always Say
“ Mak Mahu Tgk Hajar Konvo Tahun Ini”**

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DECLARATION

I declare that this thesis entitle Quality Environment 5S Enhance Service Performance: A Case Study in Malacca State Government is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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CHAPTER 1

INTRODUCTION

1.1 Background

For service businesses, the satisfaction experienced by managers may directly influence several aspects of the business, particularly front-line employees and customers. Many researchers have promoted in their studies that the effective use of all five 'S' can bring potential benefits associated with having better workplace environment in improving the operational performance by means of quality, productivity and safety (Khanna, 2009; Mohd Nizam et al., 2010), Quality Environment (5S) is one of the Total Quality Management (TQM) principles that brings a healthy, comfortable and productive life for everyone at work. 5S practice has to be practiced as a daily activity, which requires concentration, dedication and devotion for sustaining it and ultimately making it a company-wide culture.

Numerous empirical studies show a strong positive relationship between employee satisfaction and customer satisfaction (e.g., Band, 1988; George, 1990; Reynierse & Harker, 1992; Schmitt & Allscheid, 1995; Schneider & Bowen, 1985; Schneider, White, & Paul, 1998; Schneider, Ashworth, Higgs, & Carr, 1996 Johnson, 1996; Ulrich, Halbrook, Meder, Stuchlik, & Thorpe, 1991; Wiley, 1991). As suggested by this wealth of findings, positive changes in employee attitudes lead to positive changes in customer satisfaction. Vilares and Cohelo (2000) found that perceived employee satisfaction, perceived employee loyalty, and perceived employee commitment had a sizable impact on perceived product quality and on perceived service quality (see model below).

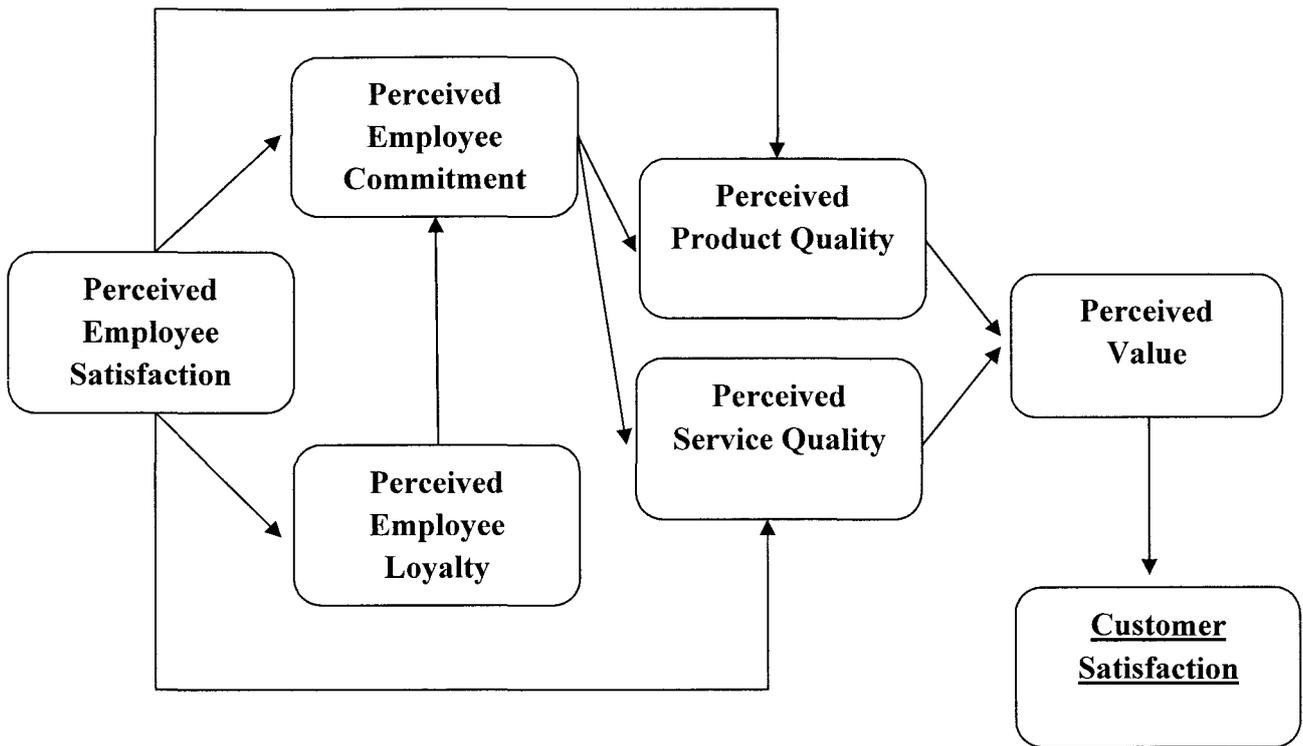


Figure 1.1: The diagram of impact on perceived product quality and service quality

This was achieved by conducting a survey to obtain new evidence that will enable to take a leadership role in making improvements in its members' work environments. Thus, organization should practices 5S continuously and systematically as effective way in order to motivate employees to become more responsible, discipline and innovative person. Organizational studies have found a weak to negative correlation between supervisor satisfaction and employee satisfaction (Campion 1991).

Total Quality Management (TQM) has been introduced by Dr. W. Edwards Deming (1900-1993). This is fundamental to productivity improvement of Quality Management System (QMS). When implemented successfully in a company, QE(5S) will bring about amazing changes. Quality Environment practices use 5S Concept as tools

towards achieving systematic organization, productive environment, and standardization in the workplace. Total Quality is a description of the culture, attitude and organization of a company that strives to provide customers with services that satisfy their needs.

In this study, it focuses on Quality Environment 5S enhance service performance: A case study in Malacca State Government. The underlying assumption of the study is that work environment improvements will benefit the organization system in a total. There are well-documented links between productivity, cost, and delivery services and service performance. This survey was conducted among employees at Malacca State Government Office.

1.1.1 Introduction Quality Environment (5S) Practices

5S abbreviated from the Japanese words *seiri, seito, seiso, seiketsu, shitsuke*, is not just a methodology; it is a culture that has to be built in to any organization which aims for spontaneous and continuous improvement of working environment and working conditions. It involves everyone in the organization from the top level to bottom. The Japanese developed this simple and easily understandable words religiously practiced the philosophy of 5S at every aspect of their life and have made it a worldwide recognizable system.

Total Quality Management (TQM) has been introduced by Dr. W. Edwards Deming (1900-1993). Total Quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs. This is fundamental to productivity improvement of Quality Management System (QMS). When implemented successfully in a company, 5S will bring about amazing changes. Quality Environment practices use 5S Concept as tools towards achieving systematic organization, productive environment, and standardization in the workplace. The driving force for 5S program comes from people. In this respect, Shitsuke

is critical to its success. Shitsuke is to train people accordingly so that they will follow good habit.

Masaaki Imai in his book *Gemba Kaizen*, has elaborated, “As a general rule of thumb, introducing good workplace organization reduces process defects by 50%.” This is why 5S is so important to companies to achieve overall lean production system. Here are some explanations about 5S. Figure 1.2 below show that each S is interrelated to each other;

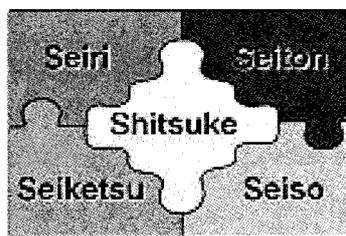


Figure 1.2: 5S Map

i) Sort (Seiri). The first step requires employees to sort and systematically discard items that are not needed in the workplace. Red tag strategy commonly employed in order to help company eliminate unnecessary items. Sorting is an excellent technique to transform a cluttered workplace layout into an effective area to improve efficiency and safety.

ii) Set in order (Seiton). Employee will organize and arrange necessary item in a neat and systematic manner so that they can be easily retrieved for use and to return after use. The second S reflects a very popular saying “a place for everything and everything in its place”. It emphasises safety, efficiency and effective storage and consequently improves the appearance of the workplace. The main benefit is the searching time will be reduced and there is no human energy waste or excess inventory.

iii) Shine (Seiso). It refers to clean and inspects the workplace thoroughly so that there is no dirt on the floor, machinery and equipment. This step emphasizes on

cleanliness in order to ensure a more comfortable and safe workplace, as well as better visibility, which reduces retrieval time and achieves higher quality work, Product or services.

iv) *Standardize (Seiketsu)*. Employee has to maintain a high standard of organization by keeping everything clean and orderly at all times. It can be achieved by establishing standard procedures in order to determine the best practices and at the same time ensuring everyone carries out their individual activity in the workplace.

v) *Sustain (Shitsuke)*. The last step is to train people to practice the 5S system continuously so that it becomes habitual and ingrained in the culture of organization. Self-discipline is required to maintain consistency of standards of quality, safety and cleanliness. (MPC, 2010)

1.1.2 Benefit QE Implementation

By doing the 5S program, overall workplace cleanliness, created by removing waste from work area, promotes internal organization and enhance visual communication. Besides that, by reducing wasted time and materials, productivity is increased along with safety and costs are reduced.

No	Subject	Explanation
1	Increases in Productivity	<ul style="list-style-type: none"> • Reduces lead times thereby improving product delivery times • Reduces equipment downtime, maintenance and cycle time • Improves daily and shift startup times and reduces changeover time

No	Subject	Explanation
		<ul style="list-style-type: none"> • Reduces the amount of time wasted searching for tools and equipment
2	Increases in Quality	<ul style="list-style-type: none"> • Improves quality by reducing the amount of errors/defects • Implements standardization thereby achieving output consistency • The pleasantries of the simplified work environment increases employee moral
3	Reduction in Cost	<ul style="list-style-type: none"> • Provides cost saving by reducing inventory, storage fees and space requirements • Improves safety thereby reducing the cost of worker injuries • Reduces the amount of scrap thereby reducing production cost

(Lori Williams)

The program as whole minimizes waste and improves efficiency by ensuring that employees are spending time doing productive task rather than looking for misplaced tools, sorting unnecessary through stack of waste material or rearranging the work environment at the change of shift.

From that, organization will enhance the performance and have a good of quality employees. Beside that many believe that 5S is a must have tool. For any of the tools in the toolkit for becoming lean such as quick change over, total productive maintenance, mistake pending and so on. The 5s program significantly helps in both the implementation and sustaining of improvement. The standard of 5s is that employee should be able to find anything in their own workplace in less than 30 second, anywhere else in the workplace in less than 5 minutes without talking to anyone, opening a book, turning on a computer. 5S is the foundation for successful lean implementation. 5S is the tool to begin, support and sustain the lean journey.

1.2 Problem Statements

Customer satisfaction is mainly derived from the physiological response with the perceptual difference gap between expectation before consumption and practical experience after consumption of service or products. It implies an accumulated temporary and sensory response. Therefore, under such a specific consumption setting, it frequently influences the overall attitude and decision-making when customers deliver the service (Lee et al., 2010). Understanding customer satisfaction will facilitate companies to maintain customer satisfaction to products or services. As such, inferior products or services can be improved to allow customers with wonderful impression (Anderson and Srinivasan, 2003).

Malacca State Government is an organization that is very consistent in adopting the 5S culture in the workplace. It about 38 offices get the certificate from MPC for implementation the Quality Environment in their office within 10 years back. Best Practices of Quality Environment (QE) or 5S can provide a positive impact on the organization either directly or indirectly. In addition, in Malaysia context, research is

rarely done towards government agency. Since, 5s culture often has done in the private sector.

In this study, researcher wants to analyze 5s is effective practice in Malacca State Government office are attuned to change from within for such quality systems for the improvement of their productivity, cost, and delivery. Example as, without implementation 5S in the office, it might be create waste in productivity by time looking and preparing documents. In waste of cost, the organization will waste cost in term of make more copying job will spend money on copy paper, ink cartridges and copy machine maintenance. In waste of delivery, before implementing 5S, its always have a lot of unnecessary waste is caused of poor communication and vague delegation because employee demotivate in work.

Recently, Quality Environment (5S) culture practiced in many organizations in a systematic and sustained effort. Environmental Quality by definition, (Rapoport, 1977); the first deals with the physical environment, while the second deals with the perceived environment. While the second, and more sophisticated meaning is the qualities, material and immaterial, of natural and man-made built environment which support, or not, the social and cultural structures and institutions of a specific group of people and hence, give them satisfaction, or dissatisfaction, with the physical settings provided (Rapoport and Hardie,1991)

1.3 Research Objectives

This research is objectively seeks to:

1. The relationship between the Productivity on enhance service performance
2. The relationship between the Cost on enhance service performance
3. The relationship between the Delivery Service on Enhance service performance
4. To recommend the efficient of competitive priorities on enhance service performance

1.4 Research Questions

This study mainly focuses on four research questions;

1. Do the Quality Environment 5S give impact on productivity?
2. What are benefit on cost while implement Quality Environment 5S?
3. What the advantage on delivery services if organization implement Quality Environment 5S?
4. What the efficiency of competitiveness priorities on enhance service performance in Malacca State Office?

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

In this chapter, literature review was used as the basis of conducting the study. It will discuss the topic on study on impact of implementation the best practice of Quality Environment (QE) with four selected independent variable which are productivity, quality, cost, and delivery as a positive impact from best practice of QE(5S) among employees. This literature review will give a clear view on what is this study all about.

2.1 Productivity

Every organization wishes improved their productivity, as it increases overall return on investment. The removal of unnecessary items and maximization of workspace efficiency alone can help to actualize improved productivity by limit the amount of time wasted. The less time spent searching through unnecessary items or moving through poorly organized workspace means more time spent. In addition, 5S practices to accelerate its implementation through innovative methods and 5S practices able to create physical environment and social environment. (Book of Kaizen, Imai, 1986).

Service productivity has been sparsely treated in the literature with a few exceptions (Gummesson, 1992a; Lovelock and Young, 1979; McLaughlin and Coffey, 1990). Productivity is a ratio between output and input. The more organization can reduce the input keeping up output, the better is our productivity. Productivity also can be increased by increasing output at a faster rate than input and consequently offer improved profitability at the same time as cost goes up.

For more than a decade, researchers have advocated that organizations view service customers as “partial” employees (e.g. Bowen, 1986; Mills and Morris, 1986; Mills, Chase and Margulies, 1983). This perception expands the boundaries of the service organization to incorporate service recipients as temporary members or participants. It recognizes that customers contribute inputs, much like employees, which impact the organization’s productivity both via the quantity and quality of those inputs and the resulting quality of output generated (Mills et al., 1983).

There is considerable disagreement concerning the nature of the relationship between customer satisfaction and productivity (Huff et al. 1996). In operations research and production management, it is common to argue that this relationship is positive. The firm that achieves supreme levels of customer satisfaction needs to devote fewer resources to handling returns, rework, warranties, and complaint management, thus lowering costs and improving productivity (Crosby 1979, Deming 1982, Juran 1988).

As the context of this study is the overall performance of the firm, it is natural to focus on customer satisfaction as an overall evaluation of a firm’s product or services, rather than a particular individual’s evaluation of a specific transaction (Boulding et al. 1993, Johnson and Fornell 1992, LaBarbera and Mazursky 1983, Oliver 1980, Oliver and Swan 1989, Yi 1991). Through increasing loyalty, it is argued, customer satisfaction helps to secure future revenues (Fornell 1992, Rust et al. 1994, 1995), reduce the costs of future transactions (Reichheld and Sasser 1990), and minimize the likelihood customers will defect if quality falters (Anderson and Sullivan, 1993). Internally, improving quality and customer satisfaction reduces costs associated with defective goods, and handling/managing complaints (Crosby 1979, Fornell and Wernerfelt 1988, Garvin 1988, Gilly and Gelb 1982, TARP 1979, 1981). Finally, empirical work suggests that firms

providing superior quality enjoy higher economic returns (Aaker and Jacobson 1994, Anderson et al. 1994, Capon et al. 1990, Nelson et al. 1992).

2.4 Cost of Waste

This is a major superiority and advantage to companies that use the 5s principles. Cost savings become possible through a reduction in space requirements, storage fees and inventories. It promotes safety in the workplace, and this in turn helps to reduce the number of accidents and worker injuries. It directly affects overall production costs through a reduction in company waste. The practice of 5S is initially concentrates on the improvement of industrial workplace environment in the pursuit for high quality, low cost and fast delivery of products. The theory of 5S is simple and could be transferred into practice towards continual improvement (Ho et al., 1995; Mohd Nizam et al., 2010).

Researchers agreed that 5S is very powerful tool, feasible to implement and incurred less investment (Rose et al., 2011) in improving the organizational performances on the aspects of economic opportunities and environmental sustainability that include the benefits of quality, cost, safety, productivity, workplace environment and waste reduction (Mohd Nizam et al., 2009; Ho, 2010; Mohd Nizam et al., 2010). Sustainability could also be incorporated into design in manufacturing environment through the adoption of design for environment (DfE) (Rosen & Kishawy, 2012) towards achieving employee productivity improvement, reduction in operating cost, and increase market share (Fiksel, 1996).

Currently, 5S becomes one of the most popular business improvement tools in several organizations (Mohd Azman et al., 2011). The benefits that could be gained from 5S implementation are in accordance to 3Ps (people, planet and profit), a well-known marketing principle which having strong relationship with sustainability (Crals & Vereeck, 2005). In short, the practice of 5S would generate benefits for people (e.g., health, safety

and discipline), planet (e.g., waste, pollution, and energy), and profit (e.g., quality, productivity and operational cost). All aspects of 3Ps need to be fulfilled in order to become sustainable organizations (Tsai & Chou, 2009).

Key competitive business strategies include both achieving lower cost and adding value through differentiation (Porter 1980). One important way in which competitive performance may be achieved is through quality improvement. This strategy can be used both to differentiate products and services and to obtain lower costs through enhanced productivity and the elimination of waste. An important question for managers is ‘what is the most appropriate way to improve?’ Both incremental improvement and innovation are valuable operational strategies to gain and maintain competitive advantage in the global market (Hammer 2005; Prajogo & Sohal 2001; Hamel 2001; Swinehart et al. 2000).

Berhardt, Donthu, and Kennett (2000) measured the relationship between employee satisfaction, customer satisfaction, and profit longitudinally showing that, although the effects of employee satisfaction and customer satisfaction on business profit at a given point in time might not be traced, they become prominent over time. Specifically, these researchers found a positive linkage between change in customer satisfaction and change in profit/sales, a positive relationship between change in employee satisfaction and change in business profit, and a strong relationship between employee satisfaction and customer satisfaction at any point in time. Many researchers frequently considered the issue for 5S implementation is not new. However, given the ability to improve the operational performance in parallel with reduction of environmental impact within limited investment budget, the successful implementation of 5S should be considerably significant to be the foundation of a framework to help organization to

pursuit for sustainable economy and environment [National SME Development Council], 2011).

2.3 Delivery of Services

Many organizations invest a considerable amount of capital and resources, implementing new techniques to improve their operating performance. Many approaches and techniques are available. New fashionable methods tend to displace older approaches, which may still have value. An effective strategy for selecting and implementing improvement initiatives is an important issue to ensure customer satisfaction (Natcha Thawesaengkulthai, BEng, MSc., 2007). Thinking of its customers in these ways will lead the organization to ask what types of information and education it may need to share with its customers, and how it might develop approaches for training and rewarding its customers for effective participation (Bowen, 1986; Goodwin and Radford, 1993; Kelley, Donnelly and Skinner, 1990).

In Japan, 'Kaizen' or Continuous Improvement was introduced to many countries outside of Japan, by the book Kaizen (Imai 1986). Kaizen became known as a successful feature of the Japanese management style. The improvements under Kaizen are typically small and incremental changes that involve everyone, entail relatively little expense, and focus on continued improvement efforts. 5S practices important to reduce customer complaints. The organization need to ensure all customers facing staff is trained to deal with or spot any discontent. This will enable where possible a 'right first time approach' leaving the customer feeling that one way or another their issue will be dealt with as quickly and efficiently as possible. In the context of Kaizen, management has two major functions: maintenance and improvement. Improvement according to Imai (1997, pp.3-4) is classified as either Kaizen or innovation. Imai (1986) also suggest that Kaizen strategy begins and ends with people (people-oriented), results can only be improved when first

improving the process (process-oriented) and no improvement occurs without standards (standards-oriented). In government sector, QE/5S practice can ensure the delivery time of documents and can be done more quickly and effectively.

Many industries are paying greater attention to service quality and customer satisfaction, for reasons such as increased competition and deregulation (Reichheld & Sasser, 1990; Schlesinger & Heskett, 1991). Academics have also been studying quality and satisfaction to understand determinants and processes of customer evaluations (Bitner & Hubbert, 1993; Boulding, Staelin, Kalra, & Zeithaml, 1993; Cadotte, Woodruff, & Jenkins, 1987; Churchill & Surprenant, 1982; Fornell, 1992).

Service experiences are the result of interactions between organizations, related systems/processes, service employees and customers. Considerable research in marketing and management has examined customer satisfaction with service experiences (e.g. Arnold and Price, 1993; Bitner, Booms and Mohr, 1994; Bitner, Booms and Tetreault, 1990; Keaveney, 1995; Ostrom and Iacobucci, 1995; Surprenant and Solomon, 1987; Zeithaml, Parasuraman and Berry, 1990).

2.4 Service Quality

Theoretically, 5S is a series of simple steps to continual improvement. Originally, it is a workplace housekeeping technique based on five Japanese acronyms (Ho et al., 1995). Much of literature still declares 5S as housekeeping (Becker, 2001; da Silveira, 2006) or a lean tool (Pavnaskar et al., 2003; Hines et al., 2004). Others recognize 5S as a problem-solving tool (Hyland et al., 2000) and as well as environmental improvement tool (O'hEocha, 2000). Although, some quality experts have used different words for 5S, however they carry the same meaning and objective to establish and maintain quality environment in an organization (Mohd Nizam et al., 2009; Ho, 2010). 5S practice can