OPERATIONS MANAGEMENT PRACTICES AND PERCEIVED SERVICE QUALITY A CASE STUDY OF KENYA SUGAR INDUSTRY

BY

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DECLARATION

This research project has been done by me and has never been submitted for exam in any college, University or any other institution of higher learning.

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This project has been submitted for examination with my approval as University Supervisor.

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DEDICATION

This work is dedicated to my beloved wife Gladys Byegon, my children Sharon, Victor and Precious. Their love, care and support encouraged me to keep on going until end of the research project.

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I thank Almighty God for good health and for bringing me this far. His grace is sufficient.

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LIST OF ABBREVIATIONS

C D F : Constituency Development Fund

KESMA : Kenya Sugar Manufacturers Associations

KSB : Kenya Sugar Board

WTO : World Trade Organization

COMESA : Common Market for East and Southern Africa

GOK : Government of Kenya

KESGA : Kenya Sugarcane Growers Association

ABSTRACT

Globalization and rapid technological developments have contributed to industries adopting new tools and techniques to produce goods and services through excellence in operations management practices, to compete and survive in the market. The most challenging factor is to deliver products and services at low cost, at the right time and good quality. Application of Operations management tools and techniques will influence the perceived service quality and address the issue of excellence in an organization. Sugar industry in Kenya is characterized by global competition and technological changes in business environment. This study sought to identify the operations management practices adopted in the Kenya Sugar Industry and establish their influence on perceived service quality. This study was a census survey covering five government-owned sugar companies in western Kenya and those which have been in operations for over five years. Data was collected from 45 management staff in all departments and 25 distributors/supply of cane in all five sugar companies using two structured questionnaires consisting mainly of closed-ended questions. The study identified to a large extent that Kenya Sugar companies in western Kenya have not fully adopted the operations management practices. It also indicates that organization for quality practices, people and job designs, and process and services designs practices influences the perceived service quality. The study concludes that sugar companies lack understanding that full adoption of the operations management tools influences achievement of perceived service quality. Recommendations made were that Kenya sugar industry needs to focus on operations management practices to enhance reliability, responsiveness, assurance, quality and standard to meet customers' expectations. The study established that people and job designs, facilities improvements, and process and service designs practices are at the centre stage of achieving perceived service quality.The paper has provided insights into the adoption of operations management practices using survey data and provide further evidence that these practices are significant in enhancing service quality in the Kenya sugar industry. The study recommends that another study should be conducted covering a different sector of the economy in Kenya to give a broader perspective and also identify operations management practices that are specific to companies in certain industries within manufacturing industries.

CHAPTER ONE: INTRODUCTION

1.1 Background of study

Over the years, operations management has become important in the manufacturing industry and its role has grown into a much more prominent purpose in the firm operation. Operations management is an area of management concerned with overseeing, designing and controlling the process of production and re-designing business operations in the production of goods and services (chase et al, 2006).Operations management is considered as the set of policies and practices defined and implemented by a company in order to produce and efficiently serve its markets. The complex business environment is continuously demanding that organizations appreciate concepts that were previously ignored. Apart from the strategy and existing conditions they also consider operational practices. According to (Waters, 2002) traditional view says that every organization has three central functions: Operations, Finance and marketing. According to (Johnston, 1999) there has been an emerging realization of the importance of the customer and a more customer oriented view of operations. Business are continuously experiencing as paradigm shift away from the internally focused efficiency view of operations and are trying to fit it with a strategic role in the firm. The focus of many organizations as pointed out by Muhamad et al, (2012), has been on increasing operational efficiency, reducing costs, enhancing quality levels, ensuring steady profits, and meeting customer needs.

Modern period saw new Japanese production techniques, such as Total Quality Management (TQM), just in-in-time (JIT), lean production, and Kaizen and employee involvement being developed and practiced elsewhere in the world, with mixed result. Manufacturers utilized just-in-time (JIT) and total quality management (TQM) strategies to improve quality and manufacturing efficiency. In a JIT production environment with little inventory to cushion scheduling and/or production problems, savvy manufacturers realized the potential benefits of strategic and cooperative buyer-supplier relationships. At operational level quite a number of decisions are made in order to achieve local outcomes that contributes to the achievement of the organization`s overall strategic goal (Russell, 2007).These operational decisions are design of products and services, Process design, facility and layout design, Human resources and job design, partnership with the suppliers,

inventory control, planning and control, and maintenance improvements among others. While various operations management practices share the common goal of continuous improvement to reduce waste and enhance competitive position, specific activities and practices have various influences on perceived service quality dimensions. Such influences is seen through indicators of perceived service quality dimensions such as; reliability, responsiveness, assurance, empathy and tangibles.

The Cost of producing sugar in Kenya is higher than those in other producing countries in East Africa and COMESA member states. The Kenya Sugar Industry Strategic plan (2010-2014) puts the cost of producing sugar in Kenya at 415-500 USD/tonne while that of Uganda 180-190 USD/tonne and Tanzania at 140-180 USD/tonne. The underlying issues that makes the cost of production in Kenya double that of its neighbors includes: irregular routine factory maintenance, low crushing capacity, low sugar extraction rates, slow adoption of new and appropriate technology, lack of industrial research, high cost of sugar production, narrow product base, dilapidated processing equipment, inefficient factory operations and wastage in cane yard.

1.1.1 Operations management practices

Operations management is considered as the set of policies and practices defined and implemented by a company in order to produce and efficiently serve its markets. Product value is increased at each stage leading to a high value of the output. (Russel, 2007) examined that operations are more than planning and controlling; it's doing, whether its superior quality, speed to market, customization or low cost, excellence in operations is critical to a firm's success. There are many activities that are interdependent and incorporated in operations management to attain the desired levels of efficiency and effectiveness depending on how well these factors are organized. These operations management practices include product and service design, process design, facility layout, inventory control, planning and control, people and job design, facilities improvements, organization for quality among others. These practices have different influences on perceived service quality of a manufacturing company.

In order to make the product or avail a service, a plant facility is required. The best process or set of processes have to be selected from the existing ones. Sound scheduling

programs put in place will facilitate the efforts of the other practices in driving the organization to achieve its goals. Skilled manpower means that right decisions will be made to produce products and services that meet the consumer's needs.

1.1.2 Perceived service quality

A service is an activity of a more or less intangible nature that normally(but not necessarily) take place in interaction between customer and service employee(s),and /or physical goods and/or systems of the service provider, which are provided as solutions to customer problems(Gronroos,1990).Service quality can be viewed as the difference between customer expectation and perceptions; expectations means service provider preference during deliverance of services whereas perception is measurement of service delivery by the service provider (Parasuramanet al 1985, 1988).Perceived service quality has multiple perspectives and has been defined differently under different conditions. Evans (2000) states that some of the best known proponents of the importance of quality are Deming (1950), Crosby(1970's), Feignbaum (1961),Ishikawa(1962) and Juran (1951).These researchers provided definitions of quality based on different attributes such as "Value", "Excellence", and "conformance to specifications" Evans and Lindsay (2004) provide a more comprehensive customer-based definition of quality that is "quality is meeting or exceeding customer expectations". This definition is most popular today and based on the phenomena that customers today are the ultimate judge of quality.

(Kitchenroen, 2004) defines service as an identifiable, intangible activity that is the main objective of transaction that serves to meet the needs of customers. He views service quality as the activity of the organization to meet and exceeds customer's expectations.(Parasuramanet al, 1985) described service quality as the ability of an organization to meet or exceed customers' expectations.(Gronroos,1991) conceptualized that service quality as being made of three dimensions : the "Technical quality of the outcome ",the "Functional quality of the encounter "and the "company corporate image".(Lettinen,1982) also describe service quality in three dimensions: the "Physical quality in (products and/or services),the "corporate quality" (the company image),and "interactive quality" the interaction between the customer and the service organization).

Service quality is most often related to customer's perception and satisfaction. As the old adage, "beauty is in the eyes of the beholder", service quality is in the eye of the customer.

1.1.3 Operations management practices and perceived service quality

Transformational process is a series of activities along the value chain extending from the supplier to customer. Services enterprises are organizations that facilitate the production and distributions of goods, support other firms in meeting their goals and add value to personal lives. According to Rousseau, 1995; Tsui, et al, 1996; Miles, 1989, increasing global competition and technological innovation require firms to explore different modes in allocation of work to be efficient and flexible. The focus of operations management practices are on efficiency and effectiveness in work systems. Perceived service quality is achieved through a focused evaluation that reflects customer's perception of specific operations management practice in place. Adopting operations management practices such as product and services design, process design, partnership with suppliers, inventory control and facilities improvements, is an effective means by which companies can increase reliability, responsiveness, assurance by the customer as well as gain competitive advantage.

Turban et al, (2002), viewed customer service as a series of activities designed to enhance the level of customer satisfaction –that is, the feeling that a product or service has met the customer expectation. "Service delivery therefore refers to the implementation of the operations management activities or a process aimed at meeting customer's needs in a timely and in the way it is needed or better than needed. The service delivery can meet, surpass or fall below the customer expectations''. Measuring service quality is one of the most important activities to improve perceived service quality, make a difference, gain competitive advantage, and sustain profit levels. According to Parasuraman et al, (1988, 1991), "SERVQUAL is a concise multi-item scale with good reliability and validity that companies can use to better understand the service expectations and perceptions of customers, and as a result improve service".

1.1.4 Sugar Industry in Kenya

The Sugar sector in Kenya is highly dynamic and competitive with local and international players. There has been an influx of cheap sugar imports in the Kenyan market due to COMESA FTA which allows duty and quota free access of sugar. This competition requires the sugar industry to improve level of performance through operations improvements. The Kenya sugar industry is a major employer and contributor to the National economy (KSB strategic plan 2009-2014).Sugarcane is one of the most important crops in the economy alongside tea, coffee, horticultural products and maize. By far, the largest contribution of the sugarcane industry is its silent contribution to the fabric of communities and rural economies (Kenyasugar.co.ke).

Currently the industry supports approximately 250,000 small scale farmers who supply over 92%of the cane milled by the sugar companies. An estimated six million Kenyans derive their livelihoods directly and indirectly from the industry (KSB strategic plan 2009-2014). In addition, the industry saves Kenya in excess of USD250 million (about Ksh19.3 billion) in foreign exchange annually and contributes tax revenues to the exchequer (VAT, Corporate tax, Personal income tax), (Ministry of Agriculture). The sugar firms in Kenya which have been in operations for over five years include, Miwani (1922),Muhoroni(1966),Chemelil (1968),Mumias (1973),Nzoia (1978), South Nyanza (1979), west Kenya sugar (1981), Soin (2006), and Kibos and Allied sugar company(2007).The establishment of the Parastatals was driven by the National desire to accelerate social-economic development, address regional economic imbalances, increase Kenya citizen's participation in the economy, and promote indigenous entrepreneurs through joint ventures. This desire was expressed in the sessional paper no.10 of 1965 on African social and its' Application to planning in Kenya.

Despite these investments, self –sufficiency in sugar has remained elusive over the years as consumptions continue to outstrip supply. Total sugar production now is at 600,000tonnes per annum while consumption rate is at 860,000 tonnes per annum. The country on average imports approximately260, 000 tonnes of sugar per annum to bridge the deficit between domestic production and consumption (Kenya sugar Board statistics

yearbook 2014). The main objectives of the Government for the sugar industry were to achieve self-sufficiency with a surplus for export in a globally competitive market, generate gainful employment and create wealth for the Kenya population, supply raw materials for subsidiary industries and promote rural development through economic activities linked to the sugar industry.

In a concerted effort to sustain the development of the sugar industry, the government of Kenya in 1992, established the Sugar Development Fund (SDF).Since inception, approximately 11billion has been realized and applied to finance cane development, factory rehabilitation, research and infrastructure development. The fund offers considerable scope for mobilizing resources for self-financing and future investment in the industry. The main players in the sugar sub-sector are the Government of Kenya (GOK), Kenya sugar Board (KSB), the millers organized under the umbrella of Kenya Sugar Manufacturers Association (KESMA), the supplier of cane organized under the Kenya sugarcane Growers Association (KESGA) and customers.

Kenya is a signatory to the East African Community Customs Union, COMESA, Cotonou partnership Agreement (ACP-EU) arrangements, WTO Agreements. The East Africa Customs Union provides for common external tariffs, while the COMESAFTA allows duty and quota free access of commodities, sugar included. The Common Market for Eastern and Southern Africa (COMESA) granted Kenya's request for an extension of the special safeguard measures in December 2007, give local millers a four year reprieve against competition from cheap imported sugar. COMESA council of ministers unanimously agrees to extend the safeguard measures on condition that the country undertakes a raft of radical measures proposed by a technical team that inspected Kenya's sugar industry. Key demands in the COMESA technical teams report includes total elimination of state control of the industry through a speedy privatization program and government divestiture from Chemelil, Muhoroni, Miwani, Nzoia and South Nyanza Company(SONY).On 14thMay2015, Privatization commission through the Kenya Gazete notice, approved privatization strategy for each of the five sugar firms paving way for their transaction implementation.

1.2 Statement of the problem

The operations management practices of an organization have profound effect on the perceptions of service quality that is delivered to customer. The organizations today is faced with high degree of competition combined with effects of globalization, emergence of more knowledgeable customer and unique characteristics of service and these have become a predominant reality of their daily operations. In this light, organizations have acquired the principle of performance measurement in the service quality context so as to establish the customers' perceptions as well as the effectiveness and efficiency of their operational management practices. A survey of the sugar sector in Kenya done by Ondiek and Kisombe (2012) aimed to examine the extent to which lean manufacturing tools and techniques have been adopted by sugar processing companies in Kenya and their impact on factory time efficiency.

The Kenya sugar industry distributors and suppliers have frequently complained of communication bureaucracies within the sugar firms structure, unavailability of sugar in the firms stores, long duration to receive stocks of sugar, cane suppliers/farmers payments delay, frequent breakdown of the factory equipments, time spent on queue waiting to load and delay cane delivery for crushing. Recently, Nzoia Sugar Company acquired modern packaging machinery to increase trust and dependency from their distributors. Most distributors, mainly supermarkets have been branding sugar as their own denying the manufacturer their identity. In Kenya various researchers have studied and documented some aspect of operations management practices. Owale (1999) discussed why sugar firms are failing to compete effectively in the liberalized trading environment in Kenya by government-owned sugar firms. This study concentrated on factors undermining the competitiveness of the local sugar firms and what managers and other stakeholders considered as important measures to be undertaken to enhance their competitiveness.

Magori (2012) did a study on perceptions of customers on quality at KCB. The study revealed that KCB customers have an average perception of service quality on services it offers. The study concluded that the Bank needs to strive to deliver excellent quality and focus on research on expected services of quality by the customer. Nzoka (2013) studied the influence of operational excellence on performance of Kenol Kobil Group in Foreign Market (Rwandan). Muthoni (2010) studied enhancement of operational excellence in the

retail service workshop processes in General Motors East Africa Limited, Nyagweso, (2013) studied supply chain management and organizations performance in the sugar industry. Other operations management practices associated with quality improvement mirror those embodied in the evaluation criteria for awards such as the Baldrige and Deming awards (Black and Porter, 2006).However, none of the studies concentrated on the relationship between operations management practices and perceived service quality in the sugar Industry. Informed by this knowledge gap, the research question will be does operations management practices in the sugar industry affect perceptions of service quality?

1.3 Objective of the study

The objectives of this research are:-

1) To identify the operations management practices adopted in the Kenya sugar industry

2) To establish the relationship between operations management practices and perceived service quality.

1.4 Value of the study

This study will not only be helpful to the entrepreneurs but also valuable to other stakeholders such as public, government, donors and international organizations. They may use the findings to appreciate which operations management practice to emphasize under different circumstances to achieve perceived service quality.

The study will enable current and future entrepreneurs to know which operations management practice influence perceived service quality, and products and services that meet customers' requirements and eventual growth of the industry. Researchers in the area of operations management will equally benefit from the findings of this study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Operations concerns with creating, operating and controlling a transformation process which uses inputs to produce outputs of goods and services that are needed by the customers. Operations are what a firm does every day in order to meet its goals. The operations activities include design of products and services, quality improvements, process design, location design, people and job design, supply chain management, inventory management, planning and controlling, and facilities improvements. According to (Robert, 1996), the ever changing and dynamic environments presents new demands and problems whether it is in terms of scarce resources, high cost of production, new customer requirements or new policies introduced by other players in the industry.

2.2 Operations management practices

The implementation of operational management practices involves execution of the operations concepts that can be used on a regular basis to help a company pursue operational and process excellence.(Russell, 2007) argued that at operational level, hundreds of decisions are made in order to achieve local outcomes that are significant to the company's strategic goal. These decisions are discussed below.

2.2.1 Products and services design

Superior supplier capability often leads to exceptional quality, cost-effective design choices, innovation in process and material technology, and rapid integration of the latest technological breakthroughs in new product design and development (Monczka et al., 1994, Ragatz et al., 1997). Services can be deeds, processes or performances without a tangible experiences (Zenithal et al, 2003) .Service enterprises are organizations that facilitate the production and distribution of goods, support other firms in meeting their goals, and add value to our personal lives.(Fitzsimmons, 2006).

Turban et al, (2002)," viewed customer service as a series of activities designed to enhance the level of customer satisfaction- that is the feeling that a product or service has

met the customer expectation". Service delivery refers to implementation of activities or processes aimed at meeting customer needs in a timely and in the way it is needed. (Silvestro et al, (1990) emphasized on the importance of measuring service quality as it achieves the important goal of judging the external perceptions and internal effectiveness of an organizations operations. Service quality is most often related to customer's perception and satisfaction. As the old adage, 'beauty is in the eyes of the beholder", service quality is in the eye of the customer.

2.2.2 Process design

Process management is the concern of quality of conformance. One important matter in process management is to ensure that process capability can meet production requirements (Zhang et al, 2000).Increasing stability and reliability as it applies to systems of routines is an intended outcome of process management practices (Harry and Schroeder,2000).

The critical decision on process while producing a product should involves what process to use ,what type of technology and its application ,human capital involved, quality and maintenance services that determines its basic cost structure. Understanding how services are designed from conception through development and designing tools and techniques until their consumption will go a long way in ensuring the processes in place support the goals in place of proving quality services.

Slack et al, (2007) defines capacity as maximum level of value added activity that an operation or facility is capable of attaining over a period of time. Brown et al, (2000) define capacity as the potential output of a system that may be produced in a specific time, determine by the size, scale and configuration of the systems transformational inputs.

2.2.3 Facility Layout

According to (Russell, 2007), facility layout refers to the arrangements of machines, departments, workstations, storage areas and aisles within the facility. Layout decisions have a real impact on the ability of the organization to meet future demands. The main types of layouts are; product layout and it refers to arranging activities according to the sequence of operations that required to assemble a product, process layout refers to

grouping similar activities in work centers while fixed position layout are typical projects in which products produced is too fragile, heavy and bulky.

2.2.4 Location selection

In recent years, intensive global competition has forced many firms to examine how the manage location strategy as they seek to enhance their competitiveness. While location selection efforts at some sugar firms have resulted in improved competitiveness, similar results in other sugar firms have remained elusive. Unlike the fact that location is determined by market accessibility, in sugar firms, the case is opposite. In most sugar firms, being near to the supplier of raw materials is Key in determining cost effectiveness and consistent delivery of cane supply. This is evident in the sugar firms locating their weighbridges near the cane growing zones. The essence of this phenomenon is that cane is available in the factory when needed and at all times. In Kenya, sugar firms have been locating their weighbridges away from the factories, but near cane growing zones in order to ensure continued cane supply hence crushing capacity is achieved. For example, Kibos Sugar Company has built a weighbridge in Awasi Market in order to be near the cane growing zones to ensure continued cane supply. Construction costs tend to be less important, although rent or leasing costs can be high (Russel et al, 2007).

2.2.5. Partnership with Suppliers

Competing in the 21st century will require firms to rely on their supplier (Monczana et al, 2011).For a firm to deliver maximum value to its customers, it must receive maximum value from all its suppliers in the supply chain (Moore et al, 2002).Commercial firms are increasingly finding out that, working in isolation will not lead to lowest costs, best quality or shortest cycle times in their firms if their suppliers do not get involved.

The aim for supply chain management is to unify the chain and remove any wasteful activities from the system. Sometimes this involves completely removing middle men, almost always it depends on the integration of communication and database systems to reduce inventories and remove knowledge gaps in the chain. Deming taught that quality product is impossible without quality raw materials and that the customer cannot be

delighted if the manufacturer/producer does not know what the customer wants and needs, or cannot provides it quickly. Deming, (1986) continually stressed the importance of both the "upstream" relationship with suppliers as well as the "downstream" relationship with consumers.

2.2.6 Inventory control

Just-in-time is based on the concept that inventories are not valuable and should be regarded as waste; accordingly, units should be available only when required. It involves having the right items with the right quality and quantity in the right place at the right time (Paneru, 2011).

Singhal, (2009) defines inventory as a list of movable terms required for manufacturing a product and to maintain the plant facilities in working condition. Advantages of effective inventory control are better capacity utilization, better recovery, reduction in maintenance cost and reduction in inventory cost. Production of goods are important to manufacturers because they may have to keep raw materials, in progress work, order and final goods while services is not critical as it is directly produced and consumed simultaneously. (Henzer, 2004).In the Kenya sugar industry, cane deliveries are organized such that the required number of tones of cane supply is crushed per day as per crashing capacity. This is dictated by the crashing capacity of the factory crushing equipment.

2.2.7 Planning and control

Planning involves establishing suitable goals, anticipating what actions must be performed to accomplish the goals, and determining what actions must be initiated so there will be sufficient lead time for the activities to be accomplished smoothly and efficiently. Scheduling refers to the time or date at which activities are carried out. Such fixing determines the way in which the resources move through the operating system. The objective of scheduling is to manage labor utilization, overtime; customers demand and reduce response time among others. According to (Russell, 2007) scheduling is significant when labor, equipment and facilities are needed to produce a product or provide a service. To monitor the production process, manufacturers have a production department whose functions includes ensuring the availability of raw materials, machine turnaround time and

labor and overall progress of each job until it is completed. In manufacturing industry, schedules are formal and geared to meet customers demand. Employee scheduling can be managed through automating the processes and this will improve customer's response time as well as perceived service quality.

2.2.8 Facilities improvements

According to Qui and Lee (2007, issue 6) the objective of maintenance management strategies is to increase device reliability, reduce production downtime, increase the throughput, increase life expectancy of assets, improve safety and quality conditions and optimize the use of available funds, personnel, inventory(materials, spares),and facilities. There are various operations management tools and techniques practices employed by organization such as the following; 5Ss, total quality management, just in time, Kaizen and Kanban among others.

5S is a productivity method whose name is derived from the five first letters of Japanese words: Seiri, Seiton, Seiso, Seiketsu and Shitsuke. The method was originally intended to organize a workspace for efficiency (Parker, 2012). The 5S has the following meaning according (Parker, 2012). Seiri means sorting**.** Keep the necessary in work area, dispose or keep in a distant storage area less frequently used items, discard unneeded items while Seiton is to arranging neatly and identifying things for ease of use. Seiso means always clean up, maintain tidiness and cleanliness and to clean your workplace thoroughly. Seiketsu means standardizing. Work practices should be consistent and standardized. Work stations for a particular job should be identical. Finally Shitsuke means Sustaining all the 4 s above. Maintain focus on this new way and do not allow a gradual decline back to the old ways.

Total Quality Management (TQM) is a structured and comprehensive approach to organizational management that seeks to improve quality and performance through ongoing refinements which will meet or exceed customer expectations. TQM looks at the overall quality measures used by a company including managing quality design and development, quality control and maintenance, quality improvement, and quality assurance Parker (2012).

Kanban simply means “signboard” in Japanese. According to Kumar and Panneerselvam, (2007) Kanban is basically a plastic card containing all the information required for production/assembly of a product at each stage and details of its path of completion. The Kanban system is a multistage production scheduling and inventory control system. Bednar et al., (2012) explains that application of KANBAN supports decreasing of production batches. They further point out that lower production batches mean fewer semi-products in production. This minimizes the requirement for space (warehouse).

Kaizen is method and a word that was created in Japan after World War II. The word Kaizen means continuous improvement. The method and the word have become part of the Toyota Production System (TPS), where it means small, continuous improvements on everyone’s part. However, in lean manufacturing, quality circles provide an opportunity for workers to actively participate in process improvement (Salem et al., 2006). Kaizen involves setting standards and then continually improving those standards. According to Parker (2012), in order to support higher standards, Kaizen also involves providing the training, materials and supervision that is needed for employees to achieve the higher standards and maintain their ability to meet those standards on an on-going basis.

In manufacturing industry, main activities which go on in maintenance operations are repair, replacement, service and modification. To determine a competitive edge and provide good customer service, companies must have reliable equipment that will respond to customers demand when needed. Preventive measures consist of activities performed before equipment breaks down to keep it in operation. Service maintenance consists of efforts to restore facilities and equipment to acceptable operating condition after break down.

In the sugar industry, Periodic maintenance is carried out when the condition of the evaporators is not able to support the cane crushed by the milling plant. Annual maintenance is carried out during high rainfall months when accessing the cane field by haulage tractors is difficult and tractors would likely destroy the cane fields. This is a period when the sugar factory is stopped for three months or more to carry out major overhaul and refurbishment.

2.2.9 Human Resources and Job design

Involving all employees in the decision-making processes encourages teamwork, higher productivity and enhances motivation which will ultimately improve perceived services of quality. The people function should be arranged in consistent with the flow chart of an organization so as to ensure high levels of service. Operational managers must understand the key service operational competencies and how to match them with the jobs. Decisions on work analysis, worker analysis and environmental analysis enhance worker productivity.

2.2.10 Organization for quality

Quality is usually slippery concept; many people may have a problem defining quality but recognize it when they see it in goods without defects and services without mistakes (Kettunen, 2008).Quality means different things to different people. This is the argument put forward by various students of quality. For instance, Lysonns and Gillingham, (2003), points out that there are numerous definitions of quality. According to the American Society for quality control, (1999), quality is a matter of relationship management. The society defines quality as the ongoing process of building and sustaining relationships by assessing, anticipating and fulfilling stated and implied needs. In the face of changing competitive conditions, many firms are pursuing quality management practices to regain their competitive edge (Victor et al, 2000).The dimension of quality for manufactured products that a consumer looks for include performance, features, reliability, conformance, durability, serviceability and safety. Quality management significantly alters ways jobs are designed requiring new behaviors, roles, and responsibilities for all organizational members (Koike, 1988).Organizations must set a quality, standard and operating procedures to meet customer's expectations. This can be achieved through improved processes and the result will be low cost, high quality product.

2.3 Perceived Service quality

Many authors have suggested that perceived service quality originates from a comparison of different individual expectations with different company's performance perception. Perceived service quality is a focused evaluation that reflects the customers' perception of specific dimensions of service. These dimensions are reliability, responsiveness, assurance, empathy and tangibles (Zeithamal and Bitner, 2003).

Service quality is generally defined as the difference between expected service and perceived service (Parasuramanetal, 1998, 1991).Perceived service quality has been defined as the customer's overall assessment of the superiority of a firm's service with respect to its service interactions and the subsequent outcomes.

As argued by Zeithmal, (1985), organizations' ability to delivering superior service quality has been established as a prerequisite for success and survival in the current business world. And this success is said to be dependent on customer satisfaction through a set of quality of service delivered (Cronin and Taylor, 1994). A related generally acceptable standard that service quality is a perception of judgments about the superiority of a service rendered by an organization, but till now the exact nature of this attitude or perception has not been globally agreed (Mohr, 1988). Many authors have suggested that perceived service quality originates from a comparison of different individual expectations with different company's perceptions or disconfirmation of expectations (Parasuraman, et al, 1988).

The conceptualization of service quality has its roots in the expectancy disconfirmation theory (collier and Bienstock,2006),so the evaluation of service quality results from comparing the perception of the service received to prior expectations of what that service should produce(Choi et al, 2004).

Globalization, competition strengthened by information technology and the increasing demands of the sophisticated customers have challenged organizations to shift their focus strategically and try to understand how to measure service quality and consequently offer high levels of quality service as a tool to attain efficiency.

Theoretical constructs for measuring quality have been suggested by Zeithmal et al, (1988) Parasuraman et al (1988,1991,1994a) further proposed and tested a multi-item instrument, known as SERVQUAL, to evaluate service quality from the customers point of view. According to Parasuraman et al, (1988, 1991), the SERVQUAL model measures five dimensions namely tangibles, reliability, responsiveness, assurance and empathy. The model focus on five service Gaps namely; positioning gap, specification gap, delivery gap, communication gap and perception gap. Based on SERVQUAL model the parameters for measuring service quality include in Kenya sugar firms;

Factor one is tangibles. It refers to the appearance of the physical facilities. The facility should be modernized, provision of visually attractive offices, equipments and materials. Employee should be well dressed and appear neat. The general physical environment of the service points should be clean. Factor Two is Reliability. Reliability involves the ability of the organization to provide services as promise and exercising dependability in handling customers' service problems (Kang et al, 2002). It refers to the consistency and dependability of performance .It entails performing the service right the first time, every time and honoring promises. Factor Three is Assurance. It involves engagement of employees who instill confidence in the customer based on their level of knowledge, skills and expertise. Maylor, (2003) suggests that the specific measures of assurance would include an evaluation of whether a customer can trust the worker and feel safe in dealing with the employees. Its sub-dimension involves speed and timeliness of providing the service. Factor Four is Responsiveness. Chowdhary and Chowdhary, (2005) hold that responsiveness entails keeping customers informed about when services will be performed, delivery of prompt services to the customers, high levels of willingness to help customers and readiness to respond to customers queries and complaints. Last factor Five is Empathy. Kang et al, (2002) observes that service quality entails the act of employees dealing with customers in a caring fashion and the organization ensuring that its services are offered during hours and days that are convenient to the customer. Empathy must be incorporated in the service offerings by ensuring that the business operates within convenient business hours, concern and understanding of the customers' needs and complaints. Others include credibility and level of trustworthiness of the service providers,

security and as concern with the freedom from danger, risk or doubt when engaging the service provider.

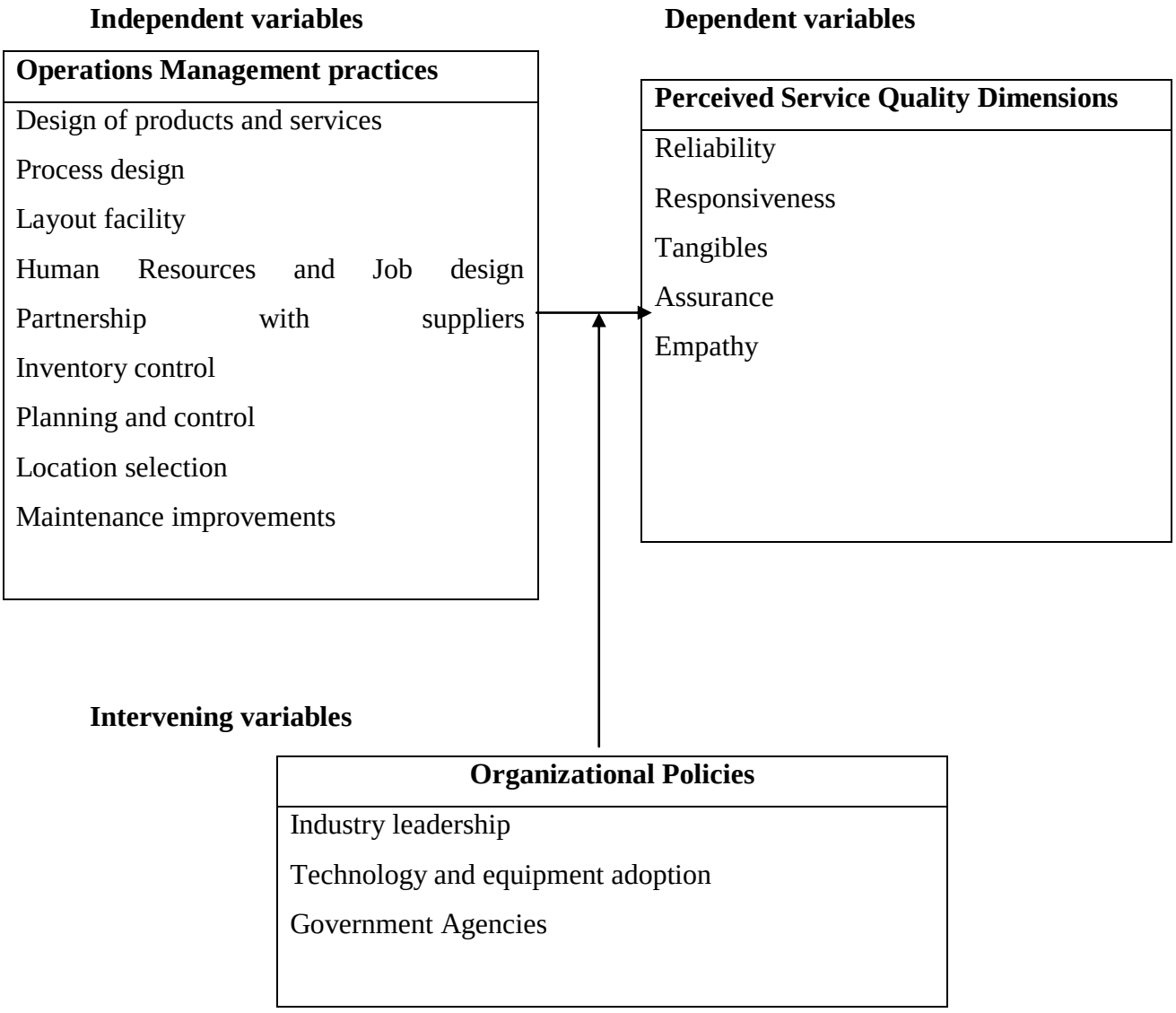
According to Ondiek and Kisombe (2012) factory time efficiency in the context of the sugar industries in Kenya is the index that measures the ability of a factory to sustain operations throughout the year without interruptions. This is the time taken from when customers make an order to the time they receive their order.

2.4 Conceptual Framework

The conceptual framework is intended to develop awareness and understanding of the situation under scrutiny and communicate this effectively.

The schematic diagram (Fig 1.0) below will not only guide the study but will also show the interrelationship of operations practices as independent variables, which is a variable that influences or explains the dependent variable either in a positive or negative way and perceptions of service quality as dependent variables which is a variable or construct the researcher hopes to understand, explain and/or predict during the study, and sugar sector organizations' policies as intervening variables.

Figure 1.0 Schematic diagram showing variables relationships



Source: Author

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that was use to carry out the survey, what informed the selection of the research design, the target population, sampling method, and data collection instrument and how data was analyzed and presented.

3.2 Research Design

The research design used in this study is descriptive. A similar research design was used by Oganda, (2012).The design refers to a set of methods and procedures that describes variables. It involves gathering data that describe events and then organizes, tabulates, depicts and describes the data. The researcher used this research design to describe the operations practices as they are and the perceived service quality as it is received in the Kenya sugar industry. It also involves issues like opinions, attitudes and perceptions towards processes, trends and events in the subject of study.

3.3 Target Population

The specific population consisted of all the five sugar companies in Western Kenya thus the reason of using census study. The population of interest in this study was selected from head of departments and other departmental managers since they are better placed to understand the operations of the company as well as their suppliers and distributors. There are nine departments in each sugar company. This implies 5 head of departments,4 Managers in middle level management, suppliers of cane, and distributors of sugar who have actually received a service from the Kenya sugar industry.

3.4 Data Collection

The researcher used primary data. The study will comprise of two questionnaires to collect the primary data (See appendix ii and iii). The first questionnaire (appendix ii) sought to describe the operations management practices being applied by the sugar companies in their daily operations and the second sought to establish the perceived service quality delivered in the sugar industry.

According to Sproul,(2000), a self-administered questionnaire is the only way to elicit self-report on people's opinion, attitude, beliefs and values. Primary data was obtained through self-administered questionnaire with both closed and open-ended questions. The questionnaires included structured and unstructured questions and was administered through drop and pick method to respondents who are five Heads of departments and four middle-level managers. A total of 45 questionnaires were distributed to five sugar companies in western Kenya.

The closed-ended questions enabled the researcher to collect data using a Liker scale format of five points. They were drop at the respondent offices and collected after a day so as to allow respondent ample time to respond to the questionnaire.

3.5 Data Analysis

The collected data was thoroughly examined and checked for completeness and comprehensively. The data was organized, coded and tabulated. The data was presented through percentages, means, standard deviations and frequencies. Tables and other graphs were used to illustrate the findings for ease of understanding and analysis.

For each operations management practice and perceived service quality an average was calculated and was used to indicate the extent of application of the operations management practices and the effect on perceived service quality.

3.6 Reliability and Validity

Instrument validity is the degree to which research results obtained from the analysis of the data actually represent the phenomenon under study (Mugenda&Mugenda, 2008).The self-administered questionnaires were tested through content validity. Content validity refers to a measure of the degree to which data collected using a particular instrument represent a specific domain of indicators or content of a particular concept.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data analysis results, as well as interpretation and discussion of findings. The research questions were summarized using tables, graphs, mean, standard deviation and frequencies.

The purpose of this research project was to examine the extent to which operations management practices have been adopted in Kenya sugar industry and establish their relationship with perceived service quality. A survey questionnaire was used to identify operations management practices namely; products and services design, process design, facility layout, partnership with suppliers, facilities improvements, people and job design among others, and perceived service quality questionnaire to measure dimensions of service quality. A total of 45 questionnaires were distributed to all heads of departments in the five sugar companies in western Kenya and 35 were filled returning a response rate of 77.8%.Descriptive statistics were used to analyse data collected and statistical package for Social Sciences(SPSS 17.0) was used for this purpose.

4.1.1 Response Rate

The study targeted five government-owned sugar factories in western Kenya. The table below presents the response rate.

Table 1Response Rate

	Target	Received	Response Rate
Respondents	45	35	77.8%

Source: Research data (2015)

4.2 Operations management practices used by Sugar companies in western Kenya

This section covers findings from specific questions posed to the respondent to establish the most predominant operations management practices in use in the sugar industry. The likert scale items in the questionnaires were summed together to measure a single variable for the 10 key operations management practices .For the ten operations management practices, a summary of percentages, mean, standard deviation and frequencies for responses were computed.

4.2.1 Products and services design management practices

86.5% of the respondents concurred that from agree to strongly agree this products and services operations management practice was evidently used in Sugar industries in Western Kenya. 6% of the respondents did not find the practice to be dominant in sugar Companies operations management practices.

Table 2

Products _and _services_ Design					
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	.6%	12.9%	41.8%	44.7%	100.0%

Source: primary data

4.2.2 Process design management practices

57.1% of the respondents were unanimous that the process design practices affects the operations management practices in use at sugar companies in western Kenya.31.3% were undecided whether the process capability met production requirements. The processes in place should be tailored to be in consistent with the desired output. These include the type of technology and its application, quality and the process in use among others.

Table 3

Process _Design					
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	11.6%	31.3%	37.4%	19.7%	100.0%

Source: primary data

4.2.3 Facility layout management practices

78.7% of the respondents agreed that layout operations management practice was in use in the sugar companies in western Kenya. The respondents believed that layout decisions like arrangements of machines, departments, and storage areas affected the ability of the sugar companies to meet future demands.

Table 4

Layout_ facility					
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	3.6%	17.7%	49.5%	29.2%	100.0%

Source: primary data

4.2.4 Partnership with Suppliers operations management practices

Table 5 shows that 60.7% of the respondents agreed that partnership with Suppliers operations management practices are used in sugar companies in western Kenya. Respondents were asked whether suppliers were involved in materials requirement planning and whether the sugar industry provides technical assistance to them. Considering the sugar sector in Kenya little technical assistance is provided and supplier is bound to be constraint in supplying the right material. Quality supplier materials rely on close relationship with the suppliers. 28% were undecided whether the practice was prevalent in the Sugar industry in western Kenya.

Table 5

Partnership _with_ suppliers					
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
2.0%	9.3%	28.0%	36.7%	24.0%	100.0%

Source: primary data

4.2.5 Planning and control management practices

35.2% of the respondents were undecided that planning and control affects the operations management practices of the sugar companies in western Kenya.12.6% strongly believed that the practice was benefitting the Sugar Companies in western Kenya.

Table 6

Planning _and_ controlling					
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
3.8%	14.8%	35.2%	33.5%	12.6%	100.0%

Source: primary data

4.2.6 Inventory control management practice

51.1% of the respondents were undecided. They believed that Sugar was produced without corresponding demand from the market. 35.5% of the respondents found the practice to be dominant in the sugar companies in western Kenya. This is probably because of the nature of sugar production processes which are arranged according to similar product. They agreed that wastes that occur in the process of producing Sugar are identified and remedial action instituted.

Table 7

Inventory_ Control					
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	13.5%	51.1%	21.3%	14.2%	100.0%

Source: primary data

4.2.7 People and job design management practices

Table 8 shows that 58.8% of the respondents agreed that the people and job design operations management practices affect the operations of the sugar companies in western Kenya. Only 9.8% did not consider this practice prevalent.

Table 8

People _and _job _Design					
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	9.8%	31.4%	40.4%	18.4%	100.0%

Source: primary data

4.2.8 Facilities improvements Management practices

About 38.9% of the respondents strongly agreed that the sugar company have adopted facilities improvement operations management practices. 20.4% were undecided or did know what improvement tools and techniques have been put in place. The companies seems to be using the traditional maintenance practices where the plant is put on shut down for months to allow for maintenance.

Table 9

Facilities _Improvements					
Strongly Disagree	Disagree	Neither Agree or is Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.9%	8.0%	20.4%	31.9%	38.9%	100.0%

Source: primary data

4.2.9 Location selection practices

82.6% of the respondents were unanimous that location selection management practices affect the operations management in use in the sugar companies in western Kenya. About 5% did not believe that this practice was in use in the sugar industry. Location selection efforts at some sugar companies have resulted in improved competitiveness while similar results in other sugar companies have remained elusive.

Table 10

Location_ selection					
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
1.1%	4.9%	11.4%	44.6%	38.0%	100.0%

Source: primary data

4.2.10 Organization for quality management practices

Table 11 indicates that 71.9% of the respondents concurred that from Agree to a strongly Agree the organization for quality operations management practice was evidently used in Sugar companies in western Kenya. About 23.8% were undecided whether the organization for quality operations management practices was dominant in the sugar industry.

Table 11

Organization _for _quality					
Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	4.3%	23.8%	40.0%	31.9%	100.0%

Source: primary data

4.3Perceived service quality levels

This questionnaire sought to establish the extent to which various operations management practices have influence the perceived service quality of the sugar companies

4.3.1Tangibles Perceived Service quality dimensions

Table 12 shows that 37.8% of the respondents neither agreed or disagreed that the tangibles dimension of perceived service quality affected the level of service quality in the sugar industry. More than 40% agreed that the tangibles played a vital role in how the sugar industry offered their services.

Table 12

Measure _of_ Tangibility					
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	20.0%	37.8%	23.3%	18.9%	100.0%

Source: primary data

4.3.2 Reliability Perceived Service quality dimensions

About 44.6% of the respondents found the service they were offered to be reliable to their respective needs in the sugar companies in western Kenya while 47.3% did not find the service reliable.

Table 13

Measure_ of_ reliability					
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	8.0%	47.3%	20.5%	24.1%	100.0%

Source: primary data

4.3.3 Responsiveness Perceived Service quality dimensions

36.8% of the respondents seemed undecided on the degree of the responsiveness on the services offered in the sugar companies in western Kenya. About 44.1% of the respondents did agree that the services they were offered were responsive to their needs.

Table 14

Measure _of_ Responsiveness					
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	19.1%	36.8%	25.0%	19.1%	100.0%

Source: primary data

4.3.4 Assurance Perceived Service quality dimensions

37.7% of the respondents found the services they received to be assuring while about 46.7% were seemed undecided while 5.6% disagreed that they were assured.

Table 15

Measure _of_ Assurance					
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	5.6%	46.7%	33.3%	14.4%	100.0%

Source: primary data

4.3.5 Empathy Perceived Service quality dimensions

More than half of the respondents found the service offered to be accompanied with empathy.15.6% did not acknowledge that they were served with empathy while 33.3% seemed undecided on the degree of empathy that accompanied their service.

Table 16

Measure_ of _Empathy					
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	Total
Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
.0%	15.6%	33.3%	36.7%	14.4%	100.0%

Source: primary data

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction.

The main focus of this chapter is to summarize the findings of the study and also discuss them in relation to the study. The chapter also provides limitations, conclusion and recommendations that will be used for policy making and practice.

5.2 Summary of the findings

The study had two objectives: To identify the operations management practices adopted in the Kenya sugar industry and to establish the relationship between operations management practices and perceived service quality. It was revealed that operations management practices being used have a weak relationship with perceived service quality rendered in Kenya Sugar Industry.

The operations management practices found to be predominantly used were process and service design, processes, people and job design and facilities improvements. On the other hand the perceived service quality measures found to be of great emphasis were responsiveness followed by assurance while the rest were rated fairly.

5.3 Conclusions

The study concludes that despite several initiatives and efforts geared towards improving perceived service quality in Kenyan Sugar Industry, not many efforts have a connection with the operations management practices adopted. There is lack of general understanding of operations management practices and the sugar companies have not employed a systematic approach in their use.

5.4 Limitation of study

The study was limited to sugar industries in western Kenya. Therefore, the findings may not be representative of other organizations outside this scope. The researcher however expects hindrances while conducting the study. The researcher anticipated low generalizability of the finding, where the findings could be used to present a general picture of state of all organizations in Kenya. However, to mitigate this, the study selected

adequate sample that is scientific, conforms to law of large numbers and central limit theorem whereby a sample of 30 cases is considered normally distributed.

The scope and depth of the study was limited by the time factor and financial resource constraint. The unwillingness of the respondents to complete the questionnaires promptly and the due protocol to be followed in the sugar companies contributed to delaying the data analysis.

5.5 Recommendation for policy and practice

The study established that operations management practices are at the centre stage of achieving perceived service quality through excellence. Therefore sugar companies should employ operations management practices to reap its benefits through continuous improvements and attaining high levels of service quality. The study recommends that these sugar companies should fully adopt operations management practices in order to offer efficient and effective products and services. This study indicated a weak correlation between the existing operations management practices and perceived service quality delivered.

5.6 Suggestions for Further Studies

This study was conducted on selected Sugar Companies in western Kenya. Due to the challenge of generalizability, and to augment this study finding, another study should be conducted covering manufacturing companies in Kenya. Such a study will not only give an insight from a broader perspective but also identify operations management practices that are specific to firms in certain industries within manufacturing industries to facilitate their goal of attaining perceived service quality.

Appendix I: Sugar firms in Kenya

1. Mumias sugar company
2. Nzoia sugar company
3. Sony sugar company
4. Muhoroni sugar company
5. Chemelil sugar company
6. Kibos and Allied sugar company
7. Butali sugar company
8. Soin sugar company
9. West Kenya sugar company
10. Transmara sugar company
11. Kwale international sugar company

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APPENDIX II: OPERATIONS MANAGEMENT QUESTIONNAIRE

This questionnaire intends to elicit information on the operations management practices used by the Kenya sugar firms and level of service quality delivered to the customers/suppliers of sugar the firms.

Kindly answer the following questions by ticking in the appropriate box or filling the spaces provided.

Part A: General Information

1 Respondents name (optional)…….

2 Gender Male ( ) Female ( )

3 Name of sugar Firm……

Part B: Operations management practices

Mark appropriately with X the spaces provided in the table, which signify to what extent you agree with the operations management practices where 5=Strongly Agree, 4=Agree, 3=Neither Agree or Disagree, 2=Disagree, 1=Strongly Disagree.

Table 1; Operations management practices used by Kenya Sugar industry

A. Products and services design	5	4	3	2	1
Make products easily acceptable in the market					
Make products appealing to the customers					
Services offered by the sugar industry are tailored to meet customer's needs and wants					

Sugar industry balance between the standards (of quality, speed, reliability) geared to meet customer's needs					
Services offered by sugar industry are continuously improved basing on customers feedback and recommendations					

B; Layout facility	5	4	3	2	1
The departments are organized based on similarities of duties					
Divisions are grouped according to their contributions to the sugar industry					
Each department/division is designed for future expansion and improvement					
Proper utilization of space available and ensure safety of employees					
It is easy for employees to communicate with one another					

C: Process design	5	4	3	2	1
The sugar industry has appropriate tools applicable to establish the most efficient operating levels					
The industry is able to respond to changes in supply of cane/demand for sugar quickly					
The sugar industry is able to forecast demand accurately					
Control measures are in place to ensure standardization of services offered by the employees					

D: Planning and Scheduling	5	4	3	2	1
Service provisions activities are scheduled to ensure consistency and efficient service delivery					
Sugar industry is consistent to meet production and supply levels					
Service quality models and resource capacity utilization are in place to match capacity strategies					
Employee work overtime more often to clear backlog					
Increasing or decreasing working hours depending on demand					

E: Facilities improvements	5	4	3	2	1
Maintenance services are done when there is work or when equipment breakdown					
Sugar industry regularly inspects its facilities and products					
Maintenance services are done periodically					

F: People and job design	5	4	3	2	1
There is a strong team spirit in the sugar industry					
Employees are well equipped with skills, knowledge and experience to fully understand the goals, policies and objectives of the company					
Line managers provide feedback to employees on their performance					
Employees are accessible to all the training need					
Jobs in the sugar industry are designed to match the peoples' skills and experience					
Existing good working conditions, adequate incentives and employee safety at work ensures that employees offer quality service					
There is a system of collecting employees' opinions					

G: Inventory control	5	4	3	2	1
The sugar industry uses computer software to manage its inventory					
Sugar industry orders at specific times in the year					
Cost determines the amount of goods to be ordered					
The sugar industry orders are placed depending on prior arrangements with suppliers					

H: Partnership with suppliers	5	4	3	2	1
Suppliers operate as separate entities with their own objectives					
Sugar firms deals with a few prequalified suppliers					
The sugar industry provide technical assistance to suppliers, distributors and customers					
The sugar industry can locate and track movements of goods/items					

I: Location selection	5	4	3	2	1
Sugar industry facilities and offices are located in accessible areas (road, available transport & communication)					
Distribution, Transportation and other utilities are accessible					
Labor is easily available					
Location is close to cane growing zones					
Sugar industry weighbridge is built near the cane growing zones					

J: Organization for quality	5	4	3	2	1
The sugar industry has a quality management system in place					
The sugar industry has established the circumstances and conditions that					

accompany the best operating levels of efficiency					
Sugar industry relies on recommendation of Kenya Sugar Research Institute for quality cane seeds					
Sugar industry treats customers as their centre of business					
Employees are accessible to training and educated on quality aspects.					

APPENDIX III; PERCEIVED SERVICE QUALITY QUESTIONNAIRE

This questionnaire intends to elicit the service characteristics you have actually received from the sugar industry. Kindly give your actual perceived service quality from this sugar industry on a scale of 1—5 ranging from 5=Strongly Agree, 4=Agree, 3=Neither Agree or Disagree, 2=Disagree to 1=Strongly Disagree.

Choose the number which satisfies your perceptions and mark appropriately with X the spaces provided in the table.

SECTION A: Background Information

1. **Gender** : Male ☐ Female ☐
2. **Sugar industry:** …… …… ……

SECTION B: Perceived Service Quality received from the Kenya Sugar industry

Table 2: Service quality Measures

Measures of Tangibility	**5**	**4**	**3**	**2**	**1**
The sugar firm uses up to date equipments and instruments facilities					
The sugar firm offers automated services					
Sugar firms' physical facilities and offices are appealing					

Neatness and professionalism of employees					

Measures of reliability	**5**	**4**	**3**	**2**	**1**
The sugar firm offers convenient services					
The sugar firm employees keeps its service promises					
The sugar firm provide its services at the time they promise to do so					
Employees offer right services ,first time every time					
The sugar firm keeps its records accurately					

Measures of responsiveness	**5**	**4**	**3**	**2**	**1**
The sugar firm employees work with speed to help and give solutions to customers' problems					
The staff promptly respond to customers' problems offering special care to special clients					
Replying to all queries from customers					

Measures of Assurance	**5**	**4**	**3**	**2**	**1**
The sugar firm has polite staff					
The sugar firm employees are knowledgeable and experience to handle all queries					
Employees of the sugar firm appear confident of the services they offer					
Trustworthiness of employees by customers					

Measures of Empathy	**5**	**4**	**3**	**2**	**1**
The staff in this sugar firm offer individual attention to clients					
The sugar firm provides fitting and flexible operating hours					
The staff understand their clients' issues and own them					
The sugar firm provides adequate support to employees to ensure they do their jobs well					

Richard B Kiprotich,

P.O Box 2841-00200,

NAIROBI.

To

The CEO,

Chemelil Sugar Company

Dear Respondent,

RE: Research questionnaire

The questionnaires (attached) are designed to gather information on the relationship between operations management practices and its effect on perceived service quality of the sugar industry based in western Kenya.

The study is being carried out for a management project paper as required in partial fulfillment for award for the Degree the master of Business Administration, University of Nairobi.

Please note that this is strictly an academic exercise towards the attainment of the above purpose. You are hereby assured that the information will be treated with strict confidence. You cooperation will be highly appreciated.

Thank you for your anticipated kind response.

Yours sincerely,

Richard B Kiprotich