

**EFFECT OF TOTAL QUALITY MANAGEMENT PRACTICES ON
OPERATIONAL EFFICIENCY OF CONTAINER DEPOTS IN MOMBASA
COUNTY**

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DECLARATION

The research project report is my original work and has not been submitted for the award of a degree at any other university.

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SIGNATURE.....

The research project report has been submitted for the examination with my approval as the University supervisor

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ABSTRACT

Total Quality Management requires that all members of the company to play a part in adding value in processes, products, services and culture in which they work. This can be attained by combining all quality-related functions and processes throughout the organization. TQM focuses on the overall quality aspects employed by an organization including managing quality design and development, quality control and maintenance, quality improvement, and quality assurance. The main objective of this research was to establish the effect of total quality management practices on operational efficiency of container depots in Mombasa County. The study adopted a descriptive design using cross-sectional data. The target population was 36 container depots in Mombasa County and since the population was small, a census survey was carried out on all the container depots in Mombasa County. A questionnaires were distributed to collect primary data. Out of the 40 research instruments distributed, 37 questionnaires were received and analyzed representing 81% response rate which was considered adequate. Data analysis was done using of SPSS which produced both descriptive and inferential statistics. The findings revealed that three elements of total quality management practices (top management commitment, training, teamwork and employee commitment, customer focus and quality focus) had a significant relationship with operational efficiency ($p < 0.05$). When individual total quality management practices were considered, top management commitment, training, teamwork and employee commitment, customer focus and quality focus also had a strong positive correlation with operational efficiency. The study therefore recommends that the container depots should concentrate on all aspects of total quality management practices since all the practices work in tandem to bring about superior operational efficiency.

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
FMM	Federation of Malaysian Manufacturers
GDP	Gross Domestic Product
KPA	Kenya Ports Authority
RBV	Resource-Based View
SPSS	Statistical Package for Social Scientists
TQM	Total Quality Management

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In the objective of achieving competitive advantage, the improvement of quality is one of the strategies that has become essential. It is observed as being essential to improve the quality of services and products offered by an organization in a global market that is expanding (Gharakhani, Rahmati, Farrokhi & Farahmandian, 2013; Sadikoglu & Olcay, 2014). The enhancement of quality of services and products including the aspect of satisfaction is one of the biggest challenges faced by organizations today (Gharakhani et al., 2013). Companies have initiated and adopted high quality concepts to the process of production so as to minimize costs and produce products of high quality. Overall, A philosophy that focuses continually on the improvement of quality of services/products through the expectation to achieve customer satisfaction and targeting of customer needs and organizational performances. The extent to which an organizational operation full fills the onjectives of cost, flexibility, dependability, speed, and eventually quality (Nigel, Stuart, and Robert, 2010).

The RBV theory proposes that competencies are a significant contributor to organizational performance (Bharadwaj, 2000; Teece, 2007; Tippins & Sohi, 2003). Competencies indicate that a firm is capable to accumulate,assimilate and utilize scarce resources (Amit & Schoemaker, 1993); resources comprise assets, skills, processes, companies' qualities, information and know how; and can be classified according to human, physical or organizational capital. Regarding competitive advantage theory, Porter argues that competitive advantage develops mainly out of the value an

organization which can be emerged from the benefit of its consumer which surpass company's production expenditure. Value is what consumers are comfortably and able to buy. Competitive advantage also refers to the best value by presenting cheaper exchange value of a product to be compared to other organizations in the same field for administering rare advantages that have high prices outweighed or equivalent gains.

Most of developed nations such as the United States, African countries Kenya included have had most of their container depots congested, and this has been mainly due to the export cargo in marine containers and the ever increasing imports volumes (Notteboom & Rodrigue, 2005; Iannone, 2008). Constant depot congestions have also limited the efficiency of operations whereby with the inception of the containerization aspect, time utilized by shippers or clearing agents in the making of their merchandise from the harbors covers a huge chunk of their business time (Levinson, 2006; Nyema, 2014). The Mombasa port operates inland container depots for containerized, non-containerized cargo and empty containers for handling and storage. This serves inland customers in a faster and more reliable way. The Kenya Port Authority owns and operates three inland container depots directly linked to the container terminals at the port of Mombasa. The inland depots are in Nairobi, Kisumu and Eldoret (KPA, 2016). The Mombasa port are near to the customers through the inland container depots and also eases congestion at the Mombasa port therefore, reducing dwell time and increasing container turnaround time. Improvements on operational efficiency in the depots directly affect organization's profit levels and efficient organizations are more cost effective. For the container depots, TQM is important and must be taken seriously by managements to earn stable and sustainable financial performance (Sufian, 2007).

1.1.1 Total Quality Management

TQM is a framework focused on managing people that target a steady rise in satisfying customers and continually lowering costs (Yildirim, 2012; Reed, Lemak & Mero, 2000). A fundamental part and comprehensive approach of the high level strategy is TQM; it is efficient across every staff member division thus stretching out in forward and revers to inculcate customer and supplier chains. TQM focuses on adaptation and learning to change that is progressive as being fundamental to organizational success (Evans & Dean, 2000). According to Lee and Chang (2006), a micromanagement philosophy that aims at incremental improvement in all organizational components thus relaying services or products in compliance with customer pre-requisites or customer requirements in a superior way which is a simpler route and more secure, quicker, and less costly when compared to other market players in conjunction with other departments working under the senior managements can also be used to define TQM.

An important and essential role is played in the performance and productivity of an organization through the utilization of TQM. It thus appears that there is an inherent need for quality practices for organizational continued survival. (Jaafreh & Al-abadallat, 2012; Choi & Eboch, 1998). The TQM practices that this study will be considering include: commitment for leadership and top management; learning organization; teamwork and employee commitment; employee training; role of the quality department; consumer emphasis; incremental improvement; innovation analysis and information and analysis; quality focus and quality management of supplier (Reed, 1996; Teece, 2010; Day, 1994; Yildirim, 2012; Reed, 2000; Govindarajan, Kopalle, & Danneels, 2011).

1.1.2 Operational Efficiency

Operational efficiency is a measure of information contained in an estimating equation defined using a result. Lon(1994) adds that operational efficiency measures the level of productivity, volume of service, thus helping to minimize the resources used in achieving objectives of an organization. Efficiency is also referred to as the level or the degree with which the process use up resources, time and money. Drunker (2011) defined efficiency as the right way of doing things. According to him, efficiency denoted the achievement of the organizational objective with minimum sacrifice of the available but scarce resources. According to Kalluru and Bhat (2009), the proficiency of the corporate to inhibit the unwelcome and reduce resources capabilities so as to deliver services to final consumers and products of quality is the definition of operational efficiency. Operational efficiency depends on factors including skilled workforce, up to date technology, return to the scale of the businesses and effective supply chain among others.

Efficiency scores obtained for the organization can be used to formulate the operational strategy to enable a firm to meet its business objectives and goals by enhancing allocation of available resources to maximize outputs of the company (Reid & Sanders, 2007).

Berger and Mester (1997) insist that efficient cost frontier tactics that are statistically based would be the most efficient to measure efficiency. What has received a significant amount of attention and has been the centre of academic researches is the operating performance of corporations.

This is essentially because operating efficiency interests managers with the objective of improving policy makers and financial firms performances tasked to analyse what influences performances in the market structures and thus act as a guard to the stability of

the financial system. If firms operate more efficiently, they might expect improved productivity and consequently profitability. Hence, the consumer could expect better and fair prices, quality service, better security and reliability of financial structures (Berger, Hunter & Timme, 1993)

1.1.3 Total Quality Management and Operational Efficiency

Proper TQM implementation directly increases satisfaction to customers with the service offering, lead the organization to change their way of performing activities to do away with inefficiency and achieve best results (Ozaki 2003). According to Sila (2007) TQM plays a big role in product quality, it also reduces scrap and need for rework, stabilizing production process to cater for the inherent need for buffer stock.

It was deduced that cost of product production time is reduced through the utilization of TQM. TQM enhance employees' training, information system management, relationship with suppliers (Khanna, Laroiya, & Sharma, 2010; Sadikoglu & Olcay, 2014; Sadikoglu & Zehir, 2010). Improvements on operational efficiency directly affect organization's profit levels and efficient organizations are more cost effective. For any business, operational efficiency is important and must be taken seriously by managements to earn stable and sustainable financial performance (Sufian, 2007).

1.1.4 Container Depots in Mombasa County

Container terminals are very important to part of chain of logistics. At the terminals, importers leave their empty containers and the exporters use them for shipment. For many shipping line companies, The Mombasa port operates as the empty container collection terminal for Kenya and East Africa thanks to its numerous container terminals

and high quality service (Nyema, 2014). Mombasa Port is the largest and the busiest in East Africa. Apart from its service to Kenya, the Mombasa port offer service to inland countries like Uganda, Rwanda, Democratic Republic of Congo, Ethiopia, Sudan and Somalia.

Transportation of goods is provided by road trucks and rail and selected retainer service operates from the port to inland container terminals (KPA, 2016). The Mombasa port operates inland container depots for containerized, non-containerized cargo and empty containers for handling and storage. This serves inland customers in a faster and more reliable way. The Kenya Port Authority owns and operates three inland container depots directly linked to the container terminals at the port of Mombasa. The inland depots are in Nairobi, Kisumu and Eldoret (KPA, 2016). The Mombasa port are near to the customers through the inland container depots and also eases congestion at the Mombasa port therefore, reducing dwell time and increasing container turnaround time.

Considering growth in the sea traffic and the ever changing maritime technology, the sea ports are bracing themselves for demands to update their systems with cutting edge technology and also improve their container terminals' efficiency to give comparative advantage to produce more traffic. some of the fundamental impediments terminal operators are cascading through or facing includes prevention of diversions to nearby ports and securing traffic flows including ensuring multi-model connections to the hinterland, enabling large storage capacities, reducing berth delays and times, providing more performance enabling and adequate equipments and handling cargos and containers more rapidly (Castro, 1999; Nyema, 2014).

On the other hand, the Mombasa port has exceeded expectations on its design and there are still expectations on it handling exports and imports that are incremental in nature. The operations at the port are at its maximized capacity for both loose and containerized cargo. The port operations are at its maximum capacity for both containerized and loose cargo. The eventual causal effect which may be an eventual downfall in operations efficiency unless both terminal and capacity efficiency issues are addressed urgently (KPA, 2010). Concerning capacity, container imports has gone down on average of ten per cent annually since 2014, despite relatively low GDP rates in 2015 and 2017. Regarding efficiency, both imports and exports key issues need to be addressed relating to the movement of cargo cargo movement by utilizing inefficiencies and the port influenced by unloading and loading management, inspection and duty collections.

The capacity for operational capacity cargo is essentially rare with the growing demand in cargo that is containerized cargo; the port entry in Mombasa faces fundamental capacity problems (KPA, 2010). The effects in the short-run is an increased delay on the vessel, slow movement through the port and port congestion surcharges when therefore causing unnecessary and serious cargo delays and increased importers costs. Some proposed punitive measures will be dished out to exporters with costs that are higher higher because of congestions at the port and movement that is slower through the port when congested therefore causing unnecessary and serious cargo delays at the port; consumers that would have based their own business on scheduled fixed delivery. The remaining fact is to be the issue capacity at the Mombasa port could act as an obstacle on the regional trade growth (KPA, 2010).

1.2 Research Problem

Responding to the world wide pressure from customers demand for high quality standards of goods and services, TQM and benchmarking are the main practices adopted by many organizations in the world. Container depots have faced challenges of dealing with scope global market place and its chain of supply while employing flexibility and speed, eliminating time, materials and effort wasted from all points in the chain of supply and meet customers' needs without holding high stock levels (Zu, 2009; Kaynak, 2003). In order to bring about such issues, these depots can make use of various tools and business philosophies to expedite improvements across business functions. TQM principle is one such business philosophy (Dean & Bowen). Kenya's transport infrastructure is under pressure from the rising levels of traffic both on rail and road. At the same time, container depots in Mombasa County are under immense pressure from the massive increase in imports and exports (Kenya Shippers Council, 2014). Hence, due to the above, container depots in Mombasa County must adapt to business improvement programs one of them being TQM.

Operational efficiency can be viewed as the right integration of manpower, technology and processes merge to improve productivity and worth of any business operations, whereas lowering the daily cost of operations to a more acceptable level. The outcome is that resources can be redirected to a new and value adding initiatives that bring additional capability to the organization rather than being used to manage operational tasks (Dhillon, 2012).

African countries Kenya included have realized the growing market for goods and services and this has called for increased transportation of products to other nations with

the help of water transport (Obeng, 2010). However, varying impediments and risks in mainland managing or sea ports that are deep, inland container depots included (Obeng, 2010). A symbolic sign of impediments is the congestion issue faced by most developing countries with sea ports. The undermining of business transaction fluidity and general ports operations is usually perpetuated by these congestions. The decline or reduction of competitive advantage of the aforementioned ports plus direct costs increases like surcharges or penalties and costs which are indirect like harbor users inventory costs (Oyatoye & Okoye, 2011). The past literature established contradicting outcomes; where some found TQM has favorable impact on operational efficiency of container depots. Others found it having no influence on operational efficiency of container depots. While it is generally an acceptable fact that TQM can result in operational efficiency that is sustainable, there is inadequate theory to reinforce this thinking. The container depot industry in Mombasa has been growing by the day. It started small as family businesses with a number of trucks and boosted by the growth and development of the Mombasa Port, it opened up ventures for more entrepreneurs to join in the growing business to satisfy the demand in the market. Developments proposed in the port of Mombasa for example construction of a third container terminal and new developments for oil and gas docks, imply need for logistics solutions, storage; IT based interventions, other solutions.

With the ever increasing changing technology and international sea traffic in the maritime industry, ports like the Mombasa port are adapting to increasing pressures to enhance and supply technology that is cutting edge in nature. Present studies have provided new insights and various methods from different perspectives into TQM practices.

Nevertheless, some inadequacies emerge from these studies on TQM that have been mainly conducted in manufacturing sector. There is still a gap for more studies on the subject to be undertaken in services industry especially transport and logistics firms (container depots). Locally, various studies have been done on TQM in other sectors and not transport and logistics sector. Ondiek, Kisombe and Magutu (2013) did a research on effect of TQM practices and operations performance of manufacturing industries in Kenya did not fully understand lean operation concepts and have therefore not reaped the full benefits of lean implementation. Wamweya (2013) studied TQM in the lift Industry and the research objective was to find out aspects that affect the adoption of TQM practices and their perceived performance in the lift firms in Kenya. The study concluded that TQM has a favorable impact on customer's repatronage motives indicating that satisfaction of customers and TQM have a critical part to play in the performance and continuity of any lift company in Kenya.

The relationship between operational efficiency and TQM practices has thus not been thoroughly explored. Notwithstanding some efforts in the area of applicability of TQM practices, there are some inadequacies of methodical empirical evidence in respect to the degree of TQM adoption in the transport and logistics sector and its effect on competitive advantage. This study analyzed the effect of TQM practices on operational efficiency of container depots in Mombasa County. The study focal point was on the following question: What is the impact of TQM practices on operational efficiency of container depots in Mombasa County?

1.3 Research Objectives

The primary objective of this study is to determine the effect of total quality management practices on operational efficiency. The specific objectives are:

- i. To determine the extent to which container depots in Mombasa County have adopted TQM practices.
- ii. To establish the effect of TQM practices adoption on the operational efficiency of container depots in Mombasa County.

1.4 Value of the Study

The research deductions are expected to generate understanding and knowledge of TQM and its influence on operational efficiency. It is specifically designed to assist the management of container depots to acknowledge the status of the plant concerning total quality management and thus aid them in decision-making processes. Managers would readily adopt TQM as a strategy for delivering quality products to customers to realize improved customer satisfaction, profitability, quality, employee participation and satisfaction, teamwork, working relationship, productivity and market share.

It will help to create a body of knowledge to be used by scholars and auditors on areas of TQM to include in their audits for effective auditing. The research will also be of significance to the world of academia as it is anticipated to impart additively to the body of knowledge that currently exists and the TQM understandings and the implementation and inculcation procedures on how to improve efficiency.

The research will also play an essential part in the policy formation of a basis for studies to be conducted in the future in the quality management field. The study will contribute to policy formulation through understanding the value of TQM implementation: its long-term benefits, moral to the employees, a great achievement to customers' total satisfaction, and most importantly as a cost reduction strategy. The study is deemed to aid KPA in formulating and enacting requisite measures that would govern quality operations at the industry's level

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter emphasized on the reviewing of the theoretical framework, conceptual framework, empirical review of literature, research gap and critique of existing literature.

2.2 Theoretical Foundation of the Study

The debate on the TQM concept and its impact on the firm's operations can be discussed in light of two theories in the subject is namely resource based view (RBV) and the theory focusing on competitive advantage (Market-based theory).

2.2.1 Resource-Based View

This theory proposes that competencies are a significant contributor to organizational performance (Bharadwaj, 2000; Teece, 2007; Tippins & Sohi, 2003). Competencies indicate that a firm is capable to accumulating, assimilating and utilizing scarce resources (Amit & Schoemaker, 1993): Resources comprise assets, skills, processes, companies' qualities, information and know how; and can be classified according to human, physical or organizational capital. RBV is an approach to strategy formulation aimed at attaining competitive advantage based on an organization's resources. Under this view, organizations look for competitive advantage within themselves as opposed to looking for competitive environments outside (Teece, 2007; Barney, 1991). The theory suggests that capabilities are a critical contributor to organizational performance (Tippins & Sohi, 2003). Capabilities ensure the organization utilizes scarce resource to improve organizational efficiencies.

Barney, Ketchen and Wright (2011) argue that RBV of the organization is the fundamental point at which performance and competitive advantage can be efficiently forecasted. How well resources are allocated to various activities so as to address the gaps in the market is an essentiality in the attainment of competitive advantage in this scenario. Harnessing resources is deduced as the main aim of RBV. These resources are observed as intangible human resources so as to attain competitive advantage over rival organizations.

This theory points to the need for container depots to consistently deduce means of increasing value to consumers or customers through reducing costs. This is the fundamental reason why Total Quality Management tendencies arise so as to increase effectiveness of service delivery while minimizing costs of delivering the goods or services (Fiol, 2010). TQM thus strive to ensure that competitive advantage is attained by the container depot organizations in Mombasa County so as to achieve eventual operational efficiency. The objective of the aforementioned theory is deduced to be intertwined with the objective of this research which is to ensure operational efficiency of container depots. They both suggest eventualities that are related, being achieving of operational efficiency by the depots through ensuring that all non-inhibitive facets or factors are put in place. This will ensure the eventual attainment of operational management and thus also enhance the practice of total quality management (Priem & Butler, 2010).

2.2.2 Market-Based Theory of Competitive Advantage

Porter (1998) in his book has indicated superiority as the core of a firm's performance, which shows that being superior to others, means operating at low costs or differentiating

products/services as compared to other players in the industry or market. He also argues that competitive advantage develops mainly out of the value an organization which can be emerged from the benefit of its consumer which surpass company's production expenditure. Value is what consumers are comfortably and able to buy. Competitive advantage also refers to the best value by presenting cheaper exchange value of a product to be compared to other organizations in the same field for administering rare advantages that have high prices outweighed or equivalent gains.

When products are utilized to achieve unique benefits through which higher prices are counterbalanced and also when products are priced at a lower rates than the competitors is when the value of products rises. Diversity/differentiation and cost control are the two main types of competitive advantage. This statement points to the need for KPA to consistently deduce means of increasing value to consumers or customers through reducing costs. This is the fundamental reason why Total Quality Management tendencies arise so as to increase effectiveness of service delivery while minimizing costs of delivering the goods or services.

2.3 Total Quality Management Practices

Practices There are combination of results that arise from the relationship between Total quality management and operational efficiency (Sadikoglu & Olcay, 2014; Kaynak, 2003). A positive effect on operational efficiency is the expectation placed on TQM. The research study will lay emphasis on the following specific variables:

2.3.1 Top Management Commitment

The organization executive are those who are involved in planning TQM aims and directing towards proper distribution of appropriate facility or resources by encouraging of quality innovation and enhancing TQM implementation and performance (Esam & Abdul, 2012). Pheng and Jasmine (2004) emphasizes that the level of assistance provided by senior management is very important to the success implementation of TQM. Full use of TQM in any organization is facilitated by top management. Leadership is precondition to implementing TQM therefore top management should resolutely believe in it in order the firm to perform better in the business world (Subburaj, 2005). Senior management in any firm needs to be very clear about what to expect and in their aptitude to balance between practice and novelty, concentration and decentralization. Organization without stiff governance can have hostile relations between functional parts and teams in charge of innovation (Govindarajan et al., 2011).

The success of TQM prefer that the senior management should direct junior employees to perform their duties well and maintain quality throughout their operations. Top management will be require to prioritize quality to the standard set by the organization and also provide adequate resources and appraise employees according to their performance and achievement. A lot of business firm have experience inappropriate TQM practice because of ignorance of senior management in delegating some work to their junior employees (Minjoon et al., 2006).

2.3.2 Training

Training and education refers to empowering employees by providing necessary skills that relate to the work they are supposed to do for the organization (Mondy & Mondy,

2013). Training and education increases workers productivity, by providing employees expertise and improve job satisfaction (Gagnon et al., 2013). Human resource is essential in promoting TQM prosperity, without proper human resource use of TQM may not be easy (Ahire & Dreyfus, 2000; Ang, Lee, Tan & Chong, 2011). It is the inherent duty of HRM to ensure that enough training is provided to the employees in order to put in place TQM. The achievement of TQM can be only made where there is a clear direction from the top management coordination. Training and education assist in preparing workers towards managing TQM procedure for firm procedure.

Training prepare workers to handle their duties in the most effective and efficient manner. It has been deduced that training is a fundamental building block of commerce in the attainment of eventual aims or objectives (Stahl, 1995; Mondy & Mondy, 2013). By training, employees strive to identify enhancement opportunities as ordered at providing the required and knowledge skills for all employees to be able to contribute to current quality process of improving quality of production.

2.3.3 Team work and Empowerment

According to Doorewaard (2002), collaboration has been defined as a workers requirement fulfilling process for their work environment control. A joint duty requiring action and interdependent tasks was demanded by it (Thompson, 2011). Subsequently, team work is an act of behavioural expertise gathered together by combining their effort to come up with better results (Hughes & Jones, 2011). Team work is the key element for any organization to propel its business ; it guides the firm to communicate with the objective and mission of the company, introducing new ideas, accessibility of data, generate trust, transparency and empowers staff (Al-Ettayem & Zu'bi, 2015).

Retaining competitive advantage during difficulties caused by international market places and also numerous world activities was deduced to be mainly achievable through team work. Teamwork and empowerment enhance commitment to quality and it is defined as, giving employees mandate to come up with their own decision based on what they considered to be right for them, have control on their taste, take risk and consider mistake as part of learning and encourage changes (Evans & Lindsay, 2008).

2.3.4 Customer Focus

There is a lot of concern exhibited by TQM on the inherent need of satisfying the customer. Firms endeavor to attain customer expectations in the future objective of the firm and day to day operations of the firm. Consumer focus plans, assist its clients of differing levels and produce the solutions (Kotler & Armstrong, 2009; Bose, 2012). A strategy that puts maximum attention on needs and requirements of an organization and particular consumer segment that first follows the aforementioned approach therefore emphasized consumer needs at the apex including the structure itself. The word customer focus itself provide a clear indication on the following.

It emphasises that customer is at the top of any organization planning in general and it is supposed to meet its need to the fullest level possible. Customer focus plans help in developing value chain management in the various capacities (Bose, 2012). Customer focused strategies enhance smooth flow of communications between organization and its customers and therefore the organization will understand better what the customer expect from them in order to satisfy their needs (Akao, 1990; Anderson et al., 1994) therefore any firm is able to generate its own value chain management that match clients demand and also be able to satisfy customers needs and expectations (Howaldt & Mitchell, 2007).

2.3.5 Quality Focus

Quality is an important and challenging component of an organizational strategy. Companies strive to improve quality while customers look for good quality thus quality can totally change the market. Quality is the key element of satisfying customers, improving profitability of the organization and economic advancement of a country (Golder, Mitra & Moorman, 2012). Quality is deduced to having roots in many disciplines and business tendencies including customer research, strategy, operations, engineering, management and marketing. Over the past thirty years, we have witnessed the evolving of TQM in business practices through inculcating programs like six sigma and baldrige awards. These programs have been observed to strive to achieve quality, especially in manufactured products (Deming 1982; Powell 1995).

The understanding of quality is also observed to have heavily relied on academic research. For example, our understanding of perceived quality has been enhanced by marketing explication of service quality satisfaction and consumer expectations. Quality is observed and deduced to relate to fulfillinf consumer needs according to this research study. A broader concept that encompasses not just the influences, but the quality of people and quality of process is observed as Total quality (Rohaizan& Tan, 2011). TQM is a way that a company is committed to meet customers expectation through the process of gradually improving the quality until customers satisfaction are fully met. TQM process is a way an organization target to meet customers needs and significantly lowering the operational costs resulting from sub-standard quality by enforcing improved management system (Juergensen, 2005).

2.4 Empirical Review

The theory and review of literature indicates that immense literature was written on TQM subject and specifically on its contribution towards operational efficiency. Several theories and empirical researches provided available set of information on the subject and TQM as a tool towards quality operational efficiency. However, the subject on the influences of Total Quality Management tendencies on operational efficiencies has not specifically been researched on to indicate the contribution of each specific variable in quality performance of a company.

According to Ang (2011), he carried out a research to analyse the effects of TQM tendencies on the learning organization and consumer orientation in the Malaysian service industry. The study focused on 600 small service firms chosen from FMM directory(2007). The authors used different analysis techniques and methods and deduced that senior management staff had a greater influence on consumer orientation when compared to various other TQM tendencies or practices. Other than the finding, the authors also discovered that top management is not one of the three element that are significantly related to organization training. First, this study was carried out in Malaysia and not Kenya. Second, this study was done in service sector whereas the current study targeted at container depots. Third, this study established a connection between TQM, customer orientation and learning organization while the present study looks at TQM and operational efficiency. This study did not identify the specific TQM practices that enhance efficiency a gap the present study sought to fill.

Sadique and Walob (2014) did a research on the impact of TQM on different measures of performance. In addition, the study came across several barriers and reasons of the TQM

implementation in Nigeria. The research established that various elements of TQM interfere with final result of the outcomes. The obstacles faced by firms in implementing TQM are the inadequate information and commitment by employees, insufficient employee involvement, insufficient of resources and inappropriate business structure. The conclusion was that firms should strive to improve on firm structure, staff involvement/commitment/awareness to TQM and make available enough facilities to eliminate the obstacles that hinder proper use of TQM practices. This research established the link between TQM and performance while the present research sought to determine the effect of TQM practices on operational efficiency. This study was also done in Turkey while the present study is carried out in Kenya.

2.5 Summary of Empirical Review and Research Gap

TQM is vital because it is intended to improve services, products or processes, which in turn improves competitive position by enhancing operational efficiency. Majority of the research cited in the literature were undertaken in developed nations whose strategic approach and economic performance is different from that of Kenya. Therefore most of the study experience lack of important information in the relationship between selected TQM practices and operational efficiency with which this study seeks to fill.

Several theories and empirical researches have been previously utilized on the subject matter and TQM as a tool towards quality operational efficiency. However, the subject on the influences of Total Quality Management tendencies on operational efficiencies has not specifically been researched on to indicate the contribution of each specific variable in quality performance of a company. There has been focus on studies by Ang (2011),

who carried out a research to analyse the effects of TQM tendencies on the learning organization and consumer orientation in the Malaysian service industry and Sadique and Walob (2014) who did a research on the impact of TQM on different measures of performance. They did not, however focus on enhancing operational efficiency through the proper utilization of total quality management practices.

2.6 Conceptual Framework

The study adopts and the variables are categorized as follows: quality focus, long-term supplier relationship, analysis and information, innovation, customer focus and employee commitment, employee involvement, learning organization and eventually senior and leadership management involvement.

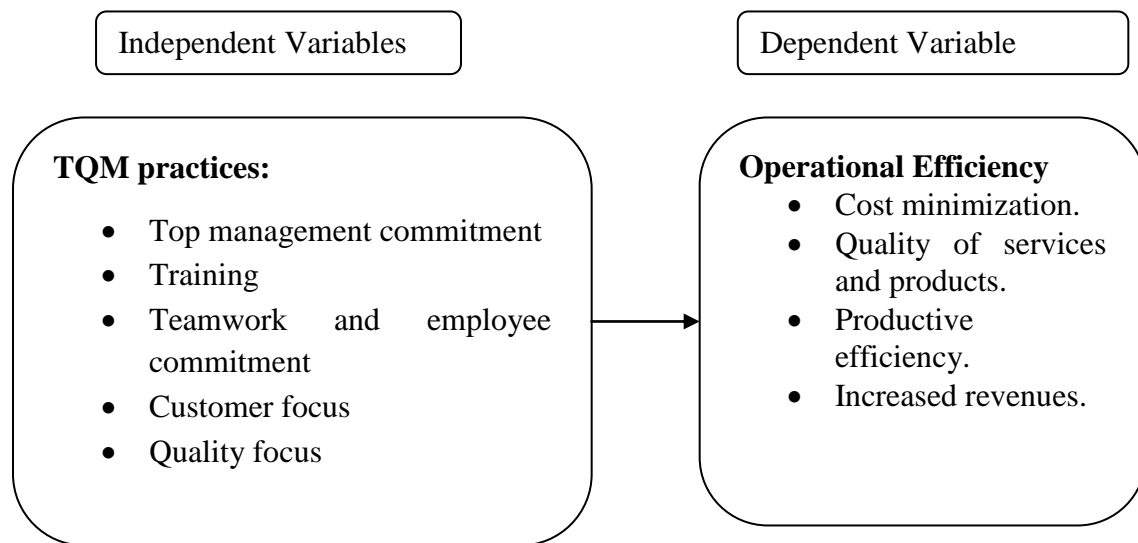


Figure 2.1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The fundamental target of this section is to provide the rationale for the study or research methodology that was utilized to analyse the study topic. The section provides facts of all information concerning the technique that was employed to investigate the research, data collection instrument and data analysis, the data collection procedure and the type of research design was utilized.

3.2 Research Design

The study utilized a cross-sectional descriptive survey. Cooper and Schindler (2007) defines a descriptive study design as focused on finding out the; who, what, where, when and how much. The design was deemed appropriate because the primary interest is to explore the viability effect of TQM practices on operational efficiency. Cooper and Schindler (2007) also noted that the descriptive survey design measures cause and effect relationships between variables. It gave room to the researcher to carry out extensive information gathering about the study population. There was an obvious preference for the aforementioned research design as it encouraged and enhanced the description aspects of the situation, thus ensuring that there is very little or no biases in the study process (Kothari, 2008). The descriptive research design reports the way things are (Cooper & Schindler, 2007). A census methodology was therefore used since the population of container depot organizations is low (36) in Mombasa County.

3.3 Population of the Study

The population of the study were the container depots in Mombasa County. Available data shows that there are 36 container depots in the Mombasa County (KPA, 2014). Due to the small size of this population, there was no sampling of the firms hence the study was a census survey of all the container depots.

3.4 Data Collection

The researcher used primary data that was gathered by the use of a questionnaire which was both closed and open ended and administered through drop and pick letter method. The questionnaires contained questions about TQM practices that influence operational efficiency. The questionnaire contained two sections (part A and B), with the first part mainly associated with demographics and respondents profile data while the second section was mainly associated with details regarding Total Quality Management practices. The target respondents were the COO's (Chief Operations Officer) at the aforementioned container depots in Mombasa County. According to Kathori (2004), primary data is the data gathered for the first time from the field of study while secondary data is the one that was already gathered and passed through a statistical process. The questions were judged on a 5 point Likert scale (1-5) although some questions required a Yes or No responses. According to Brace (2008), while trying to measure attitudes and perceptions, likert scale are a useful tool. In addition, questions were close ended to reduce variability and make data analysis easier (Dillman, 2009).

3.5 Operationalization of Study Variables

The variables were operationalized as follows;

Table 3.1: Operationalization of variables

VARIABLES	SUB-VARIABLES	INDICATORS	INFORMING LITERATURE	LEVEL OF MEASUREMENT
<p>Independent variable TQM</p>	<p>Top management commitment</p>	<ul style="list-style-type: none"> • Plan (drive , direct) • Do (deploy, support, participate) • Check(review) • Act (recognize, communicate) • Senior managers encourage change 	<p>Antonaros, (2010); Reed et al 2000; Kaynak,(2003);</p>	<p>Ordinal Lickert scale.</p>
	<p>Training</p>	<ul style="list-style-type: none"> • Training and education. • Statistical methods to measure and monitor quality training. • Management training in quality principles. 	<p>Yusuf (2007); Bon & Mustafa (2003);</p>	<p>Ordinal Lickert scale</p>

	Team work and employes empowerment	<ul style="list-style-type: none"> • Training • Suggestion scheme • Measurement and recognition • Excellence team • Feedback on their quality performance 	Powell (1995); Yildrim (2012);	Ordinal Lickert scale.
	Customer focus	<ul style="list-style-type: none"> • Seek customer input and ideas. • Identify their need and expectation. • Customer involvement in the product and services design process. • Resolving customer complaint quickly. • Market segmentation. • Listen to customer for research. • Demand driven rather than supply driven. • Improving product and service quality 	Reed 2000; kaynak (2003); Bon & Mustafa (2013) Hendricks & Singhal 2000; Cravens & Piercy (2013);	Ordinal Lickert scale.
	Quality focus	Meeting the need	Bon & Mustafa	Ordinal Lickert scale

		and expectations of customers	(2013); Chong & Rundus (2003).	
Dependent Variable	Operational Efficiency	<ul style="list-style-type: none"> • Cost minimization. • Quality of services and products. • Productive efficiency. • Increased revenues 	Bon & Mustafa 2013	Ordinal Lickert scale.

3.6 Reliability and Validity

The degree to which measurements are taken by a device on what it intended to measure is what validity symbolizes. A distinction is made between external and internal validity. Whether the hypothesized cause produces the given effect in the research is internal validity. The range to which generalization of research results is carried out is external validity.

Through the utilization of Cronbach's Alpha, the reliability of the questionnaires were measured statistically. It can also be deduced that through utilizing Cronbach's Alpha, internal inconsistency techniques were applied. An increase in value in this instance causes an increase in reliability with the alpha value ranging between 0 and 1. A commonly accepted rule of thumb is coefficient of 0.6 to 0.7 which symbolizes reliability that is acceptable and good reliability is symbolized by a value of 0.8 or higher (Mugenda & Mugenda, 2010).

Reliability refers to soundness dependability and the authenticity of the research instrument. It is the measure of the extent to which an instrument of research yields a homogeneous result of data after repeated trials (Meyers, Gamst & Guarino, 2006). The researcher conducted a pilot test so as to test the instrument validity. The researcher sought expert opinion in the field of study (especially the supervisor) and this was so as to establish validity of the research. The validity of the collected data was improved because of the aforementioned practice.

3.7 Data Analysis

The collected data was coded, then entered and cleaned using SPSS. The presentation of data was carried out through the utilization of percentages, standard deviations and mean scores on the essential (key) variables of the study. Various inferential statistics reported and interpreted.

Data was presented in tables.

Hence the main methodology through which collected data was analyzed was through utilizing descriptive statistics (measures of variability and measures of central tendencies). After the data collected, the questionnaires were edited for completeness, consistency and accuracy.

To test whether total quality management practices has an impact on operational efficiency of container depots in mombasa county, regression analysis was used in the data analysis process using the regression model. The determination of the essentiality of each variable in relation to the improvement of operational efficiency in Mombasa County container depots was more clearly enumerated through the utilization of multiple regression model.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$$

Y= Operational Efficiency.

β_0 =Coefficient of regression.

$\beta_1 X_1$ =Top management commitment

$\beta_2 X_2 = \text{Training}$

$\beta_3 X_3 = \text{Team work and employee commitment}$

$\beta_4 X_4 = \text{Customer focus}$

$\beta_5 X_5 = \text{Quality focus}$

$\varepsilon = \text{error term.}$

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter reveals the findings of the study. The chapter begins by looking at the response rate. This is followed by a section that looks at the respondents demographic characteristics. Thereafter the extent of adoption of TQM is discussed. The chapter ends by looking at the relationship between TQM and operations efficiency.

4.2 Response Rate

The study was targeting 36 firm but 29 chief operations officer answer back questionnaires. This is equivalent to 81% therefore indicate a significant respondent rate for the research study conducted.

4.3 Respondent Demographic

This section delved into the respondent characteristics laying emphasis on the academic qualifications of the respondents, the length of service of the respondents and eventually how long the organizations they represent had been in operation.

4.3.1 Academic Qualifications of Respondents

The presentation of academic qualification by the respondents was a requirement posted to the respondents. Table 4.1 is a clear presentation of the results.

Table 4.1: Academic Qualifications

	Frequency	Percentage
Certificate	0	0
Diploma	0	0
Bachelor Degree	9	31.0
Master degree	20	69.0
PhD	0	0
Total	29	100.0

Source: Research data (2017)

From table 4.1, it can be seen that a large percentage of the respondents (69%) had a masters degree. The rest, constituting 31%, had a bachelor's degree. This means that all the respondents had attained at least a bachelor's degree. This indicates that the respondents had adequate qualifications and thus had sufficient knowledge on TQM practices.

4.3.2 Length of Service

The respondents were also required to indicate the amount of time they had been with the organization. Table 4.2 shows the results.

Table 4.2: Length of Service

	Frequency	Percent
2 to 5 years	3	10.3
6 to 10 years	18	62.1
over 10 years	8	27.6
Total	29	100.0

Source: Research data (2017).

From table 4.2, it can be seen that 3 respondents representing 10.3% had been with the organization for 2 to 5 years. 62.1% had worked with the organization for 6 to 10 years

and 27.1% had an experience of over 10 years with the organization. This indicates that the respondents had been with their organizations long enough to understand their processes and change that had taken place over the years.

4.3.3 Length of Company Existence

Finally, the time duration or years (time) that the company had been in existence was a requirement the respondents were to answer. Table 4.3 shows the results.

Table 4.3: Length of Service

	Frequency	Percent
5 to 10 years	5	17.2
10 to 15 years	18	62.1
15 years and above	6	20.7
Total	29	100.0

Source: Research data (2017)

From table 4.3, the results show that the most of the organizations had been in existence for 10 to 15 years with a frequency of 18 and a percentage of 62.1%. 6 respondents had been in existence for 15 years and above with a percentage of 20.7% while 5 respondents with a percentage of 17.2% indicate that their organizations had been in existence for 5 to 10 years. From the findings, it can be inferred that most organizations had been in existence for long to consider implementing TQM practices.

4.4 Extent of Adoption of Total Quality Management Practices

The number one objective of the research was to establish the extent to which TQM practices had been put in place in the container depots. Indication on a Likert scale on the extent to which total quality management practices had been adopted by the respondents

was a requirement. 1 represents not at all and 5 represents to a very great extent. The following sub-section clearly elaborate on the results.

4.4.1 Top management commitment

The first TQM practices that the respondents were required to respond to is top Management commitment. The results are displayed in the table 4.4.

Table 4.4: Top Management Commitment

	Mean	Std. Deviation	Rank
Plan (drive, direct)	4.90	0.310	1
Check (review)	4.90	0.310	1
Do (deploy, support, participate)	4.79	0.412	3
Act (recognize, communicate, revise)	4.66	0.484	4
Senior managers actively encourage change	4.52	0.634	5
Leadership proactively pursue continuous improvement	4.52	0.634	5
Top management clearly understands the fundamental spirits and principles of quality management	4.41	0.682	9
The departmental heads accept responsibility for quality of goods	4.45	0.506	8
The company's plan always incorporates external customers, suppliers and other stakeholders	4.24	0.786	10
Management views activities in our organization as a whole in order to create synergy,	4/52	0.574	5
interdependence and interconnections			
Overall mean	4.58	0.34158	

Source: Research data (2017).

From table 4.4, it can be observed that the most adopted top management commitment practices are plan (drive, direct) and Do (deploy, support, participate) both with means of 4.90. This was followed by Check (review) with a mean of 4.79 and Act (recognize, communicate, revise) with a mean of 4.66. The least adopted practice was 'the

company's plan always incorporate external customers and suppliers and other stakeholders with a mean of 4.24. The overall mean of adoption of top management commitment practice was 4.59 indicating that the container depots adopted the practices to a very large extent.

4.4.2 Training

The second TQM practice that the respondents were required to respond to is Training.

The results are displayed in table 4.5.

Table 4.5: Training.

	Mean	Std. Deviation	Rank
The company encourages training and education to employees	4.79	.412	1
Statistical methods to measure and monitor quality training	4.34	.721	4
Management training in quality principles	4.69	.471	3
Training and education	4.76	.435	2
Overall mean	4.6466	.31705	

Source: Research data (2017)

From table 4.5, it can be seen that the most adopted Training practice is 'the company encourages training and education to employees' with a mean of 4.72 followed by 'training and education' with a mean of 4.65. The least adopted training practice is 'statistical methods to measure and monitor quality training' with a mean of 4.34. The overall mean of adoption of training was 4.65 indicating that the container depots adopted the practice to a large extent.

4.4.3 Teamwork and Employee Empowerment

The third TQM practice that the respondents were required to respond to is Teamwork and employee empowerment. The results are displayed in table 4.6.

Table 4.6: Teamwork and Employee Empowerment

	Mean	Std. Deviation	Rank
The employees are provided with feedback on their quality performance (effective top-down and bottom-up communication)	4.52	.509	4
All employees believe that quality is their responsibility	4.62	.561	2
Employee satisfaction is formally and regularly measured	4.41	.628	7
Employee flexibility, multi-skilling and training are actively used	4.55	.572	3
Employees are involved in design and planning	4.52	.574	4
Measurement and recognition	4.66	.484	1
Feedback on their quality performance	4.52	.574	4
Overall mean.	4.540	.38442	

Source: Research data (2017).

From table 4.6, it can clearly be seen that the most adopted teamwork and employee empowerment practice is measurement and recognition with a mean of 4.6 followed by ‘all employees believe that quality is their responsibility with a mean of 4.62, then ‘employees flexibility, multi skilling and training are actively used’ with a mean of 4.55. The least adopted practice is ‘employee satisfaction is formally and regularly measured’ with a mean of 4.41. The overall mean of adoption is 4.5 indicating that the container depots adopted the practice to a great extent.

4.4.4 Customer Focus

The fourth TQM practice that the respondents were required to respond to is customer focus. The results are as shown in table 4.7.

Table 4.7: Customer Focus

	Mean	Std. Deviation	Rank
The company actively and regularly seek customer input to identify their needs and expectations	4.41	.628	8
Customers are involved in product and service design process	4.38	.728	9
The company has effective process for resolving customer complaints	4.59	.568	3
Customer complaints and grievances are used to improve on product and service quality	4.59	.568	3
Market segmentation has enhanced operational efficiency	4.48	.634	7
Listen to customers and research	4.31	.891	10
Demand driven rather than supply driven	4.55	.686	5
Seek customer input to identify their needs and expectations	4.55	.686	5
Seek customer input to identify their needs and expectations	4.55	.686	5
Resolving customer complaints quickly	4.69	.541	2
Improve on product and service quality	4.76	.435	1
Overall mean	4.5310	.42519	

Source: Research data (2017).

From table 4.7, it can be seen that the most adopted practice is ‘improve on product and service quality with a mean of 4.76, followed by ‘resolving customer complaints quickly’ with a mean of 4.69. The company has effective process for solving customer complain and customer complaints and grievances are used to improve on product and service quality both with a mean of 4.59. The least adopted practice is ‘listening to customer and research’ with a mean of 4.31. The overall mean of adoption is 4.53 indicating that the container depots adopted the practice to a very large extent.

4.4.5 Quality Focus

The fifth and last TQM practice that the respondents were required to respond to is Quality Focus. The results are displayed in table 4.8.

Table 4.8: Quality Focus

	Mean	Std. Deviation	Rank
Customer requirements are effectively disseminated and understood throughout the workforce	4.69	.541	2
Products and services produced meet the customer demands effectively	4.62	.494	3
Meeting the needs and expectations of customers	4.72	.455	1
Overall mean	4.6790	.42221	

Source: Research data (2017).

From table 4.8, it is shown that the most adopted practice is customer satisfaction with a mean of 4.72 followed by customer requirements are effectively disseminated and understood throughout the work force with a mean of 4.69. The least adopted practice is product and services produced meet the customer demand effectively with a mean of 4.62. The overall mean is 4.68 indicating that the container depots adopted the practice to a very large extent.

4.5 Operational Efficiency

The dependent variable of the study has four indicators that are shown in table 4.9.

Table 4.9: Operational Efficiency

	Mean	Std. Deviation	Rank
We are able to offer prices as low or lower than our competitors due to cost minimization	4.62	.561	4
We are able to compete based on quality of services and products	4.76	.435	2
Productive efficiency (utilizing all of its resources efficiently, producing most output from least input	4.72	.455	3
Increased revenues	4.93	.258	1
Overall mean	4.7586	.30239	

Source: Research data (2017)

From table 4.9, it is shown that the most experienced benefit from adopting TQM practices with a mean of 4.93 followed by ‘we are able to compete based on quality of services and products with a mean of 4.76, product efficiency (utilizing of its resources efficiently producing most output from the least input) with a mean of 4.72. The least experienced enefit is ‘we are able to offer prices as low or lower than our competitors with a mean of 4.62. The overall mean of operational efficiency that has resulted from adoption of TQM practices by the container depots is 4.78.

4.6 Effect of TQM Practices on Operational Efficiency

Inorder to establish the effect of TQM on operational Effeciency the data in table 4.10 was used.

Table 4.10: Effect of TQM Practices on Operational Efficiency

SNO	COMPANY	X ₁	X ₂	X ₃	X ₄	X ₅	Y
1	TRANSAMI EAST AFRICA	4.40	4.50	4.00	4.60	4.00	5.00
2	LOGISTIC SOLUTION LIMITED	4.90	4.75	5.00	4.80	5.00	5.00
3	EAST AFRICAN CONTAINER DEPOT	4.60	4.75	4.43	4.90	5.00	5.00
4	FORTUNE CONTAINER DEPOT LTD	4.60	4.75	4.29	4.50	5.00	5.00
5	BASH HAULIERS CONTAINER DEPOT	4.80	5.00	4.71	4.70	5.00	5.00
6	INLAND CONTAINER DEPOT	5.00	5.00	4.86	4.70	5.00	4.50
7	MULTIPLE ICD KENYA LTD	4.90	4.75	5.00	4.90	4.67	4.75
8	YALFA HAULIER	4.90	5.00	4.71	4.80	5.00	4.75
9	GREAT LAKES PORT DEPOT	4.80	5.00	4.86	4.80	4.67	5.00
10	HAKIKA CONTAINER DEPOT	4.10	4.25	3.86	3.60	4.00	4.25
11	EMPTY CONTAINER DEPOT	4.70	4.50	4.71	4.70	5.00	4.75
12	ACMC CONTAINER LIMITED	4.80	4.75	4.71	4.80	4.67	4.75
13	MOMBASA ISLAND CARGO TERMINAL	4.70	4.75	4.71	4.60	5.00	5.00
14	PORT LINK LOGISTIC LIMITED	4.70	5.00	4.71	4.90	4.67	5.00
15	MAKUPA TRANSIT SHADE	4.50	4.00	3.71	3.70	4.00	4.75
16	COMPACT FREIGHT	4.70	4.75	4.71	4.70	5.00	5.00
17	PEPE LIMITED	4.00	4.50	4.14	4.00	4.00	5.00
18	FOCUS CONTAINER FREIGHT	3.80	3.75	4.00	3.90	4.00	5.00
19	KIPEVU ISLAND CONTAINER DEPOT	4.80	4.75	4.57	4.50	5.00	4.75
20	MITCHELL COTTS FREIGHT KENYA LTD	4.70	4.75	4.86	4.90	5.00	4.75
21	BOSS FREIGHT TERMINAL	4.90	5.00	4.86	4.70	5.00	5.00
22	WESTOM LOGISTIC LIMITED	3.80	4.25	3.57	3.70	3.67	4.00
23	DODWELL & CO. (EA) LIMITED	4.80	4.75	4.86	4.80	4.67	5.00
24	CONSOLBASE TERMINAL	4.70	4.50	4.57	4.80	5.00	4.50
25	LOGISTIC CONTAINER CENTRE MOMBASA	4.50	4.75	4.57	4.70	4.67	4.50
26	KENCONT TERMINAL	4.80	4.50	4.71	4.60	5.00	4.50
27	INTERPEL CONTAINER FREIGHT SERVICES	3.90	4.25	4.57	3.60	4.67	4.00
28	MVITA CONTAINER DEPOT	4.60	4.50	4.71	4.80	4.33	4.50
29	PORT SIDE LIMITED	4.70	5.00	4.71	4.70	5.00	5.00

The data was subjected to regression and correlation analysis. The variable in the table are $X_1 = 4.58$, $X_2 = 4.65$, $X_3 = 4.54$, $X_4 = 4.53$, $X_5 = 4.68$ and $Y = 4.68$.

4.6.1 Correlation Analysis

The results from the table 4.11 show that top management commitment, training and customer focus have significant relationship with operational efficiency with p values of 0.011, 0.015 and 0.002 respectively. teamwork and employee commitment and quality focus have insignificant relationship with operational efficiency with p values of 0.058 and 0.056 respectively.

Table 4.11: Coefficient of Correlation

		Operational Efficiency
Top management commitment	Pearson Correlation	.424 [*]
	Sig. (1-tailed)	.011
	N	29
Training	Pearson Correlation	.405 [*]
	Sig. (1-tailed)	.015
	N	29
Team work and employee commitment	Pearson Correlation	.299
	Sig. (1-tailed)	.058
	N	29
Customer focus	Pearson Correlation	.512 ^{**}
	Sig. (1-tailed)	.002
	N	29
Quality focus	Pearson Correlation	.301
	Sig. (1-tailed)	.056
	N	29

Source: Research data (2017)

4.6.2 Multiple Regression Analysis

Table 4.12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.547 ^a	.299	.146	.27938	1.588

From Table 4.12, the coefficient of correlation, $r = 0.547$. This shows that there is a positive relationship between the TQM practices in the model (Top management commitment, training, teamwork and employee commitment, customer focus and quality focus) and operational efficiency. This coefficient of correlation was tested for significance as follows:

Step 1: Stating the hypotheses

$H_0: r = 0$ (the relationship between TQM practices and operational efficiency is not significant).

$H_1: r \neq 0$ (the relationship between TQM practices and operational efficiency is significant).

Step 2: Level of significance

Significance $\alpha = 0.05$ and this is a two tailed test.

Step 3: Decision rule

Degrees of freedom = $n - 2 = 29 - 2 = 27$; Therefore, $t_{0.05, 29} = 2.045$

The decision rule will therefore be, reject the null hypothesis if the computed t does not fall in the region: $-2.045 \leq t \leq 2.045$

Step 4: Test statistic

$$t = r \sqrt{\frac{n-2}{1-r^2}} = 0.448 \sqrt{\frac{29-2}{1-0.299}} = 6.206$$

Step 5: Conclusion

Since the computed t (6.206) falls in the rejection region, the null hypothesis is rejected implying that the relationship between the TQM practices and operational efficiency is not significant.

4.6.3 ANOVA

To test the overall significance of the model, ANOVA was done. The results of ANOVA are:

Table 4.13: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	.765	5	.153	1.960	.123 ^b
Residual	1.795	23	.078		
Total	2.560	28			

From table 4.13, it can be observed that the p value (0.123) is more than the level of significance (0.05) implying that the overall model insignificant. The next step involved testing the significance of individual parameters. From table 4.14, it can be seen that all the parameters in the model are not significant as indicated by their p-values of 0.846,

0.748, 0.348, 0.092 and 0.996 which are all more than 0.05. This implies that their inclusion in the regression model is not justified.

4.6.4 Coefficients

Table 4.14: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	3.164	.825		3.833	.001		
Top management commitment	.065	.331	.073	.196	.846	.218	4.580
Training	.094	.290	.099	.325	.748	.330	3.033
Team work and employee commitment	-.268	.280	-.341	-.957	.348	.240	4.163
customer focus	.457	.260	.643	1.756	.092	.227	4.397
Quality focus	.001	.232	.002	.005	.996	.290	3.451

a. Dependent Variable: operations efficiency

$$Y = 3.164 + 0.065X_1 + 0.094X_2 + -0.268X_3 + 0.457X_4 + 0.001X_5$$

From the above regression model, Top management commitment, Training, Team work and employee commitment, customer focus and quality focus were to be held constant; the operational efficiency would stand at 3.164. It was established that a unit increase in

top management factor; the operational efficiency would change by 0.065. A unit increase in training would trigger a change in operational efficiency by 0.094. A unit increase in team work and employee commitment would trigger a change in operational efficiency by -0.268. A unit increase in customer focus would trigger a change in operational efficiency by 0.475. Similarly, an A unit increase in quality focus would account for a change in the operational efficiency by 0.001 respectively. The study also established an insignificant relationship between operational efficiency and the independent variables; top management commitment ($p=0.846>0.05$), Training ($p=0.748>0.05$), team work and employee commitment ($p= 0.348>0.05$), customer focus ($p= 0.92>0.05$) and quality focus ($p= 0.996>0.05$).

($p=0.001<0.05$) as shown by the p values.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter reveals the conclusions and recommendations of the study. The determination of TQM practices on operational efficiency of Mombasa County container depots was the main aim of this study. This chapter summarises the findings of the study as presented in the previous chapter in line with literature review, concludes the study and gives policy recommendations.

5.2 Summary of the Findings

This section summarizes the findings of the study in line with the results in chapter four. The research was intended to ascertain the effect of TQM practices on operational efficiency of container depots in Mombasa County. The results were measured on 5 point likert scale ranging from 1 which represents very low extent to 5 which represent a very great extent. The study revealed that quality focus is the mostly adopted TQM practice with an overall mean of 4.68 followed by training with an overall mean of 4.65. Top management commitment comes third as the most adopted practice with a mean of 4.59 while teamwork and employee commitment and customer focus come fourth and five with a mean of 4.54 and 4.53 respectively.

Pearson correlation also revealed that the independent variables (the TQM practices) had a positive correlation with operational efficiency. This relationship shows that as the

TQM practices change, operational efficiency changes in the same direction but at varying degrees.

The results revealed that there a positive coefficient of correlation between the TQM practices and operational efficiency. Top management commitment has a positive coefficient of $r = .424$, training with $r = .405$, teamwork and employee commitment with $r = .299$, customer focus with $r = .512$ and finally quality focus with $r = .301$. In the multiple regression model all the TQM practices in this study had an insignificant relationship with operational efficiency since they were all greater than 0.05.

Overall, the consistency in the results show that, container depots in Mombasa County have experienced and will continue to experience tangible benefits when TQM practices are applied continuously. The mere fact that 81% responses received in this in this study had implemented TQM practices in one way or another proves that TQM practices enhances operational efficiency.

5.3 Conclusions of the Study

The essentiality of TQM practices to the enhancement of operational efficiency in Mombasa County container depots cannot be understated. This is because the lack of engaging in these techniques may eventually be detrimental to the Mombasa County maritime sector (container depots). If these container depots are impeded through the lack of implementation of the TQM practices, there would be a “trickle down” effect whereby the economy of the County would be severely hampered and dilapidated.

From this study, we can therefore make conclusion that total quality management practices do indeed help Mombasa County container depot companies in a multi-faceted way that is; through ensuring that there are organizational processes related to the aforementioned practice implemented successfully so as to enhance operational efficiency, through arming the container depot companies with the tools that would eventually ensure that they gain competitive advantages related to the implementation of the aforementioned practices and through acting as an indicator for enhanced organizational processes in the sub-sector.

Knowledge sharing in the actualization of TQM practices is also an essentiality for the container depot firms in Mombasa County to effectively thrive.

5.4 Recommendations

The study findings assured the conceptual model and recommended several managerial actions. The total quality management practice of quality focus was firstly observed to be significant and positive in enhancing operational efficiency. There was thus an inherent need by depot company managers to invest and encourage quality focus to enable the harvesting of long-term fruits of gaining TQM practices in place to encourage the tendencies of operational efficiency.

The management of container depots in Mombasa County was found to be influenced by operational efficiency in a positive and significant manner. This was clearly highlighted and espoused through delving deeper into the top management commitment variable. This signified that the management needed to arm people with the required training,

resources and freedom to behave with accountability and responsibility so as to ensure improvement in operational efficiency and performance. Trust in the top management by shareholders of the container depot company should be exhibited more to inhibit fear in the top management and encourage commitment to enable the management establish a vision that is clear for the company therefore enabling the strategizing for eventual operational efficiency improvement.

The container depots in the County of Mombasa and their operational efficiency were deduced to be influenced positively by the variable of customer focus. The variable was deduced to be essential to a company's gaining superiority and success. linkages of organizational objectives to the needs of customers or clients and their expectations should be implemented by the management. This is so because the organization depend on their clients and thus should exhibit enthusiasm in understanding future and current customer needs. They should endeavor to exceed customer expectations and also strive to meet customer needs thus ensuring eventual improvement on operational efficiency.

In the endeavor to improve operational efficiency, the increasing of certification through continous improvement can be achieved by the management through internal quality auditors. Process-based auditing systems should be the main point of focus so as to examine the way processes are managed so as to improve on performance and attain the required results,ensure the determination of whether these results consider the needs of any other interested parties and those of the customer and the system endeavors to attain the results the company wishes to achieve.

Government of Kenya should design policies to ensure that the firms that have adopted TQM practices receive support during the period and after ISO certification for continuous improvement.

5.5 Suggestions for Further Studies

A cross-sectional survey was the mode that this study laid emphasis on. Interpretations in future studies, it is hoped, will be validated through the utilization of a longitudinal survey. The impacts of an organization's operational efficiency, company capacity and the eventual impacts of TQM practices should be carried out in the future researches. Through the undertaking of researches that are replicative in nature (the researches should be carried out in other sectors in Kenya), validation of conclusions and results of the current research for future research. The moderating role of other variables on the relationship between operational efficiency and TQM should be investigated so as to implement future research.

5.6 Limitations of the Study

The study was limited in scope in this way; the study focused on the effect of TQM practices on operational efficiency container depots, but was only done in Mombasa County. The other limitation of the study was some of the respondents were not cooperative in answering and returning the questionnaire. This limited the study to 29 respondents out of 36. Lastly, time was also limited for this study. The time taken to complete the whole research was short.

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APPENDICES

Appendix I: Research Questionnaire

22nd November, 2017

Omar Abubakar Mohamed.

P.O. Box 85139-80100

Mombasa.

Dear Respondent,

RE: RESEARCH QUESTIONNAIRE

The attached questionnaire is designed to collect information on the effects of total quality management practices on the operational efficiency of container depots in Mombasa County. This research is being undertaken for a management research paper as a requirement in partial fulfillment of the Masters' of Business Administration in Operation management at the University of Nairobi.

Kindly note that this is solely an academic purposes towards the achievement of the above objective. You are hereby guaranteed that all the information you will provide will be managed with the strictest confidence. Your co-operation will be highly appreciated.

Thank you.

Yours Sincerely,

Omar Abubakar Mohamed.

Appendix II: Questionnaire

PART A: Demographic and Respondents Profile

1. Name of the respondent (optional)
.....
2. Name of your organization
(optional).....
3. What is your highest academic qualification? (Tick as applicable).
 - a) Certificate []
 - b) Diploma []
 - c) Bachelor's Degree []
 - d) Master's Degree []
 - e) PhD []
4. Length of continuous service with the company?
 - a) Less than two years []
 - b) 2-5 years []
 - c) 6- 10 years []
 - d) Over 10 years []
5. For how long has your company been in existence?
 - a) Under 5 years []
 - b) 5 to 10 years []
 - c) 10 to 15 years []
 - d) 15 years and above []

Part B: Total Quality Management practices

6. To what extent has the following total quality management practices been implemented in your company? Use **1) Strongly disagree; 2) Disagree; 3) Neutral 4) Agree; 5) Strongly Agree**

	Top management commitment	1	2	3	4	5
1	Plan (drive, direct)					
2	Do (deploy, support, participate)					
3	Check (review)					
4	Act (recognize, communicate, revise)					
5	Senior managers actively encourage change					
6	Leadership proactively pursue continuous improvement					

7	Top management clearly understands the fundamental spirits and principles of quality management					
8	The departmental heads accept responsibility for quality of goods					
9	The company's plan always incorporates external customers, suppliers and other stakeholders					
10	Management views activities in our organization as a whole in order to create synergy, interdependence and interconnections					
	Training	1	2	3	4	5
1	The company encourages training and education to employees					
2	Statistical methods to measure and monitor quality training					
3	Management training in quality principles					
4	Training and education					
	Teamwork and Employee Commitment	1	2	3	4	5
1	The employees are provided with feedback on their quality performance (effective top-down and bottom-up communication)					
2	All employees believe that quality is their responsibility					
3	Employee satisfaction is formally and regularly measured					
4	Employee flexibility, multi-skilling and training are actively used					
5	Employees are involved in design and planning					
9	Measurement and recognition					
10	Feedback on their quality performance					
	Customer Focus	1	2	3	4	5
1	The company actively and regularly seek customer input to identify their needs and expectations					
2	Customers are involved in product and service design process					
3	The company has effective process for resolving customer complaints					
4	Customer complaints and grievances are used to improve on product and service quality					
5	Market segmentation has enhanced operational efficiency					
6	Listen to customers and research					
7	Demand driven rather than supply driven					
8	Seek customer input to identify their needs and expectations					
10	Resolving customer complaints quickly					
11	Improve on product and service quality					

	Quality Focus	1	2	3	4	5
1	Customer requirements are effectively disseminated and understood throughout the workforce					
2	Products and services produced meet the customer demands effectively					
3	Meeting the needs and expectations of customers					

Part C: Operational Efficiency

To what extent has your company experienced the following outcomes as a result of practicing TQM? Use (1 Very low extent; 2 Low extents; 3 Moderate extents; 4 Great extents; 5 Very great extents)

	Operational Efficiency	1	2	3	4	5
1	We are able to offer prices as low or lower than our competitors due to cost minimization					
2	We are able to compete based on quality of services and products					
3	Productive efficiency (utilizing all of its resources efficiently, producing most output from least input)					
4	Increased revenues					

Thank you very much for your cooperation.

Appendix III: List of Container depots in Mombasa County.

1. Mitchell Cotts Freight Kenya Limited
2. Dodwell & CO. East Africa Limited
3. Multiple ICD Kenya Limited
4. Multiple Hauliers
5. Ken Freight
6. Logistic Solution Limited
7. APMC Container Limited
8. Mvita Container Depot
9. Kipevu Island Container Depot
10. Mombasa Island Cargo Terminal
11. Fortune Container Depot Limited
12. Kilindini Harbour Container Depot
13. Almar Container East Africa Limited
14. Bash Hauliers Container Depot
15. Kencont Terminals
16. Pepe Limited
17. Interpel Container Freight Services
18. Great Lakes Port Depot
19. Focus Container Freight
20. Boss Freight Terminals
21. Consolbase Limited
22. Compact freight
23. Port side Logistic Limited
24. Awanad Enterprise Limited
25. Port Link Logistic Limited
26. Westom Logistic Limited
27. Makupa Transit Shade
28. Auto Logistic Limited
29. Yalfa Hauliers
30. Kengen Depot
31. Empty Container Depot
32. Inland Container Depot
33. East African Commercial Limited
34. Transami East Africa
35. Hakika Container Depot
36. Logistic Container Centre Mombasa Limited

Source: Primary data and secondary data; listed by KPA 2016.