

**ISO 9001 QUALITY MANAGEMENT SYSTEM CERTIFICATION AND
OPERATIONAL EFFICIENCY OF KENYA BUREAU OF STANDARDS
CERTIFIED ORGANISATIONS.**

BY

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DECLARATION

I declare that this research project is my original work and has never been submitted to any other University for assessment or award of a degree.

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This Project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

I dedicate this research work to my mom, my eight sisters, my brother and my daughters; Brianna and Shanice, my friends Grace Onyango and Grace Kimani for their constant encouragement throughout this journey. To all of you, I say thank you, it was all worth it.

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ABBREVIATIONS AND ACRONYMS

ISO	International Organization for Standardization
KEBS	Kenya Bureau of Standards
NSC	National Standards Council
PR	Public Relations
QMS	Quality Management System
RBV	Resource-Based View
SGS	Société Generale de Surveillance

ABSTRACT

The main purpose of this study was to establish the relationship between ISO 9001 Quality Management System certification and operational efficiency of Kenya Bureau of Standards organizations. Specifically, the study was to establish the implications of Quality Management System certification and operational efficiency. The studies that were reviewed indicated that despite the implementation of Quality Management System certification, they failed to establish the relationship QMS on operational performance. The study adopted a descriptive survey design whereby 175 organizations were targeted. Both primary and secondary data were collected; a questionnaire was employed as a data collection instrument. From the analysis of the findings, it was established that there exist a significant relationship between ISO Quality Management Systems certification and operational performance of organizations certified by Kenya Bureau of Standards. The findings of the study indicated that there was need for organizations to leverage QMS certification as a means to improving their operational efficiencies because by focusing on customers, organizations are able to offer products and services to different market niches through product and service customization. The study concludes that customer focus, employee training, and organizational leadership as QMS approaches influences operational efficiency of organizations certified by Kenya Bureau of Standards. The study recommends that organizations should train employees with a view to meeting the quality standards and expectations of the contemporary business world because skills and expertise define the efficiency of processes at Organizational level.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

This section sought to establish if there existed a relationship between quality management and operational efficiency of KEBS certified organizations. Further, the section explored resource based theory and institutional theory as the two theories that were applicable for the study. The chapter described in detail the research problem looking at both conceptual and empirical studies conducted and the value the study will contribute to both academicians and policy makers.

The rising competition in the business world occasioned by globalization implies that companies implement globally accepted quality standards developed by the International Organization for Standardization (ISO) as a means to meeting the expectations of the consumers (Ullah, Wei, & Xie, 2014). The timing for the adoption of ISO management standards determines the extent to which firms are able to realize competitive advantage. Quality standards enable firms to realize operational efficiency, as they are able to promote world trade and lower performance variability (Su, Dhanorkar, & Linderman, 2015). It is imperative to note that operational efficiency changes the future of firm performance, as organizations are able to deliver quality goods and service in a cost-effective manner (Gill et al., 2014). Accordingly, firms adopt internationally accepted quality and management standards as an approach to managing the various parts of their organizations in an endeavor to achieve the set objectives, whereby operational efficiency is one of the primary objectives.

Resource-based theory and institutional theory were used in the study of organizations offer meaningful insights on how businesses could leverage their resources and regulatory environment to achieve operational efficiency. According to the Resource-Based View (RBV), firms leverage resource capabilities as a means to achieving competitive advantage. Hoskisson et al. (2017) argue that organizations can remain competitive by using their intangible and tangible resources to remain afloat in the dynamic business world. Resource-Based View provides that firms can apply their dynamic capabilities as an approach to improving their performance (Lin & Wu, 2014). It is imperative to argue that the Resource-Based View approach enable companies to exploit their internal resources by leveraging contemporary business strategies, such as quality management systems to realize competitive advantage. According to the institutional theory, globalizations has increasingly changed the ways of doing business, and with increasing competition, firms are forced by external forces to implement strategic policies, such as adoption of ISO certification (Stam, Arzlanian, & Elfring, 2014).

The motivation to undertake this study stemed from the need for organizations to adopt ISO 9001 Certification process, as it helps organizations to re-engineer management. Despite the essentials of quality management systems, the government continues to register fewer and fewer newly ISO certified firms every year and institutions that implement quality management system still do not perform as per the expectations of the customers in which they are required to satisfy. The purpose of the proposed study will be to establish the implications of ISO 9001 quality management system and its impact

on operational efficiency. Other certifying organizations include Bureau Veritas, Société Generale de Surveillance (SGS) among others.

1.1.1 Quality Management system Certifications

A Quality Management System (QMS) is a set of policies, process and procedures required for planning and execution of production/development/service) in the core business area of an organization and focuses on meeting customer satisfaction. Spiegel et al. (2007) contended that assessing the extent to which ISO 9000 certification's pre-established aims are realized should gauge the effectiveness of ISO 9001. As argued by McAdam and McKeown (1999); Stevenson and Barnes (2001), ISO 9000 benefit is best derived when companies take a long-term investment view of the standard, requiring continuous effort and not just as a temporary solution. Power, Sohal, and Terziovski (2003) contended that the quality system of a firm is influenced by applications, service, product, and objectives, which are unique to it and normally they are dissimilar from one firm to another.

Studies carried out by Psomas, Pantouvakis and Kafetzopoulos (2013); Singh, Feng and Smith (2006), amongst others, found out that adoption of ISO 9001:2008 QMS led to improvements in product/service quality and operational performance. In fact, consumers use the previous quality standards of a firm to predict the future and/or present quality of products and services. Similarly, business firms measure their quality standards by committing themselves to a regular investigation of their production process by an independent and officially authorized third party that awards the tested company or products with an official certificate.

1.1.2 ISO 9001 Certification

ISO certified means that a company has proven that it follows the standards developed by the International Organization of Standardization. It is also very close to a Greek word, isos, which means “equal”. An ISO certified company is one that complies with various international standards such as product quality, environmental friendliness, safety, reliability, and economical.

Organizations adopted Quality Management Systems and hence certification in order to enhance their management and synchronize operations through documentation of processes, clearing out ambiguities and clearly defining duties and responsibilities among employees. More importantly, quality certification introduced a preventive way of managing quality, focusing mainly on the prevention of errors (Gotzamani & Tsiotras, 2001). The expected outcome of the adoption of QMS was reduced defects and products that focused on satisfying customers.

Effective and efficient quality management system translated into increased productivity, lower operation costs, reduced wastes, efficient deliveries of goods and services and customer satisfaction resulting into increased revenue and profitability (Nigel, Stuart, & Robert, 2010). Certification may mean different things to different organizations; in fact, some businesses may want certification as a marketing tool, while others want to improve on their processes in order to satisfy the customer requirements and remain competitive. Either of these objectives can be mediating the standard implementation and profitability.

1.1.3 Operational Efficiency

As defined by Saghafian et al. (2015), operational efficiency refers to the capability of organizations to cost effectively avail high quality products and services. Simply put, operational efficiency hinges on the ability of firms to put quality first when delivering products & services and when faced with the need for cost savings, they traditionally prefer to drive down the costs of existing business operations rather than introduce change.

Hejna and Hosking (2004) conducted a study on operational efficiency and posited that firms can realize operational efficiency if they are able to formulate, integrate, plan, and execute sound change management policies. Tacit implementation of the said policies (planning, implementing, and change management) needs a highly effective approach, which has qualified and highly competent team.

Kortmann et al. (2014) posited that organizations are able to realize operational efficiency if they undertake to produce goods and services through a cost-effective approach while ensuring that the quality and after sale service of the said goods is not compromised. Further, Kortmann et al. (2014) suggested that business firms are able to realize operational efficiency through reforming and structuring their core processes in a manner that is consistent with the ever-dynamic business world while observing cost-effectiveness. One of the approaches through which organizations can achieve operational efficiency is avoidance of waste and redundancy and utilizing organizational resources, which include business processes, technology, and workforce.

Hussein (2014) argued that when organizations realize operational efficiency, they achieve better profits, which consequently empower the said organizations to realize competitive advantage and remain afloat in the ever-changing world. Accordingly, Operational efficiency is all about a firm's performance and capabilities, which means that for firms to realize it, they have to utilize available resources through cost-effective approaches aimed at delivering quality products and services to the customers. To this end, operational efficiency talks about how firms can utilize and maximize the available resources while minimizing wastes to realize better and/or improved profit margins.

1.1.4 KEBS Certified Organizations

The Kenya Bureau of Standards (KEBS) is a statutory body established under the standards Act (CAP 496) of the laws of Kenya. KEBS commenced its operations in July 1974. The KEBS Board of Directors is known as the National Standards Council (NSC). It is the policy-making body for supervising and controlling the administration and financial management of the Bureau.

The Kenya Bureau of Standards Certification body aspires to be a global leader in provision of certification services that deliver quality and confidence by promoting industrial competitiveness and providing internationally recognized conformity assessment services.

Certification is a third party attestation of products, processes, systems or processes. Certification results in the issue of statement based on a decision following review, that fulfillment of specified requirements have been demonstrated. There are over one hundred and seventy five (175) ISO 9001 Kenya Bureau of Standards certified

organizations (KEBS, 2017). The central obligation for KEBS is to certify organizations with a view to ensuring that their members maintain high quality standards.

The Government of Kenya continues to express dissatisfaction with the performance of the state corporations (Mwanaongoro & Guchu, 2012). In the government quest to increase the number of state corporations seeking to be ISO certified, the government directed that all state owed institutions be ISO certified to form part of their operational performance evaluation in the contract between themselves and the government (Nyaoga et al., 2010). This was meant to increase their performance, help them become more efficient, create competitive advantage in the public service, enhance their performance, and benchmark their operations with the best international practices.

1.1 Research Problem

The essentials of QMS certification cannot be overstated as firms leverage quality of products and services as a means to remaining afloat in the changing business world. However, statistics from KEBS indicate that quite a number of firms have not received certification, meaning that their operational efficiency experiences ineffectiveness. Various studies have focused on concepts of quality management systems and organizational performance (Su, Dhanorkar, & Linderman, 2015), effect of operational efficiency and performance (Gill et al., 2014), ISO certification and firm performance (Ullah, Wei, & Xie, 2014), and the effects of quality and environmental management on competitive advantage (Molina-Azorín et al., 2015). Other studies considered quality management approaches and their impact on firms' financial performance (O'Neill, Sohal, & Teng, 2016), quality management systems and performance of manufacturing

firms (Kafetzopoulos, Psomas, & Gotzamani, 2015). Other scholars laid emphasis on ISO 9000 quality system certification and its impact on product and process innovation performance (Terziovski & Guerrero, 2014). Aba, Badar, and Hayden (2016) focused on the impact of ISO 9001 certification on firms' financial operating performance. The conceptual gap that this study will bridge from the previously mentioned studies is the relationship between adoption of ISO 9001 quality management certification and operational efficiency of KEBS certified organizations, as the scholars negated the concept of operational efficiency and only dwelled on quality management system certification.

Methodologically some studies have either been conceptual (O'Neill, Sohal, & Teng, 2016) or used selected measures for the variables (Kortmann et al., 2014; Oluoch, 2010; Mwanaongoro & Guchu, 2012). While these studies (Arumugam, Ooi, & Fong, 2008; Feng, Terziovski, & Samson, 2007; Kafetzopoulos et al., 2015; Gill et al., 2014) had performance as the dependent variable their independent, moderating, and intervening variables were different. This study will fill the methodological gap by focusing on quality management systems as the independent variable and operational efficiency as dependent variable. Looking at the empirical studies on operational efficiency, implication of quality management systems and operational efficiency has been inconclusive.

Empirical studies in Kenya have considered ISO quality management system implementation for small to medium manufacturing firms (Mwanaongoro & Guchu, 2012), and how small and medium companies could leverage quality management systems to boost performance. Other studies have concentrated mainly on the quality

management practices in Kenyan educational institutions (Nyaoga et al., 2010). The studies focused on different sectors, thus a very varied focus which can inhibit generalization. International empirical studies focused on safety management systems in the UK (Mensah & Julien, 2011), TQM practices and quality management performance of Malaysian firms (Arumugam, Ooi, & Fong, 2008), and the relationship of ISO 9001:2000 quality system certification with operational and business performance in Australia and New Zealand-based manufacturing and service companies (Feng, Terziowski, & Samson, 2007). This study fills the contextual gap of Kenyan and international empirical studies that have not conducted research on the influence of ISO 9001 quality management systems certification in operational efficiency of Kenya Bureau of Standards certified organizations. This prompts the need to conduct this research on the implication of ISO quality management systems on operational efficiency for KEBS certified organisations. What is the implication of ISO 9001 quality management systems certification on operational efficiency of Kenya bureau of standards certified organizations?

1.3 Research Objective

The overall objective of the study was to examine the relationship between ISO 9001 quality management systems certification and operational efficiency of Kenya bureau of standards certified organizations.

1.4 Value of the study

The findings of the study would enable government and policy makers to design and legislate policies vis-à-vis quality management systems and operational efficiency. Policy development may involve enhancing resources and capabilities in relation to the

environmental turbulences that organizations face. For example, manufacturing firms can recruit talent based on opportunities and threats that exist and reconfigure available resources in line with these environmental changes.

The study would add value to the practice of operational efficiency and how its enhancement from the perspective of quality management systems. In other words, managers and other interested industry players would benefit from the current study, as the researcher would demonstrate how quality certification enables organizations to produce quality goods in a cost effective way.

This study adds value in the areas of theory. From the theoretical perspective, the study will enhance the resource based theory and institutional theory and specifically the quality certification perspective thus making it more acceptable. The findings of the study will be essential and significant to scholars and academicians, as individuals interested in carrying out similar studies will find materials for reference. This research has importance to students and researchers who may wish to carry out further studies in the field. The ISO 9000 standards are a worldwide phenomenon and their application varies from one economy to another.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section reviewed literature in relation to the specific objectives of the study. Further, the section reviewed relevant theories and used a conceptual framework as an approach to describing the relationship between the dependent and independent variables. The chapter described in detail the summary of the reviewed literature with a view to pointing out knowledge gaps.

2.2 Theoretical Framework

This section detailed the review of relevant theories. The study applied the institutional and resource-based view as the main theories in the study. The review of the theories laid a theoretical foundation for the study.

2.2.1 Resource Based View Theory

The term Resource Based Theory (RBV) perspective was first expounded by Barney (1991) as argued by Newbert (2007) into a comprehensive theoretical framework, while clarifying the comprehension of the influence or effect of the environment where an organization operates vis-à-vis performance. As argued by Wernerfelt (1984), resources encompass organizational attributes, knowledge, capabilities, assets, and information that makes it possible for firms to formulate strategies and policies aimed at enhancing efficacy and effectiveness. Newbert (2007) observed that Resource-Based View centers on the ability of firms to employ resources, either tangible or intangible, whereby the resources ought to be inimitable for firms to achieve competitive advantage.

Resource-Based View was relevant to this study as it detailed how firms could realize operational efficiency, they have to employ business strategies, which would enhance the said firms to exploit their organizational competencies and be able to replicate these processes time-to-time (Barney, 1991). Further, Hart (1995) pointed out that Resource-Based View is all about firms exploiting their internal environment competencies through environmental capabilities and one of the approaches is prevention of environmental degradation.

Sharma and Vredenburg (1998); Russo and Fouts (1997) argued that for business firms to achieve sustained competencies, such as application of QMS, firms ought time-to-time to strive to enhance investing on labor compared to capital and that these firms have to progressively improve and enhance their internal operations. As argued by Christmann (2000), business firms cannot be able to realize competitive advantage notwithstanding the fact that they have adopted the best QMS strategies; rather, firms must invest in primary level competencies, such as having the best workforce.

Christmann (2000) gave an example of early adopters of environmental strategies, whereby the understanding was the firms could have been the best in the market. However, due to inadequate investment in basic-level competencies, these firms were unable to break-through and received damaging publicity because of their incompetence to effectively take care of their environmental issues. Accordingly, lack of investing in environmentally friendly strategies labelled the earlier adopters the dirtiest in the industry by the cleaner peers.

The RBV theory has been criticized to be static in nature and lacking in empirical scrutiny (Priem & Butler, 2001). To address this discrepancy several scholars have suggested links between resource possession and exploitation (Mahoney & Pandian, 1992). They argued that a firm might achieve rents not because it has better resources, but rather that the firm's distinctive competence involves making better use of its resources.

2.2.2 Institutional Theory

Meyer and Rowan (1977) explicated the institutional theory and argued that many formal organizational structures arise as reflections of rationalized institutional rules. The elaboration of such rules in modern states and societies accounts in part for the expansion and increased complexity of formal organizational structures. Institutional rules function as myths, which organizations incorporate, gaining legitimacy, resources, stability, and enhanced survival prospects. Glover et al. (2014) contend that institutional theory enables firms to understand the policy requirements in their areas of operation.

Darnall (2003) while presenting the institutional theory argued that business firms are constrained by external forces to adopt or formulate given policies, which ought to be strategic. For instance, the adoption of ISO certification is due to external forces, such as from industry regulators, who put pressure on firms to achieve and operate under quality standards. The understanding is that business firms that are unable to adopt ISO quality practices face the prospects of being penalized and/or sanctioned as may be deemed appropriate by the industry regulators.

There is distress among firms because of the consequences of not adopting the required quality standards and as such, firms have choice but to adhere to the rules. Further, pressure from regulators ensures that firms are environmentally responsive in their settings. As argued by Keohane and Martin (2014), due to the formal industry rules, business firms voluntarily strive to adhere to the regulations as a means to realizing rapport with the industry regulators.

Institutional theory is relevant to this study as it describes how companies strive for certification, as this is one of the surest approaches that firms can indicate to the regulators that they are committed to adhering to ISO quality practices. In fact, Darnall (2003) suggested that market forces are one of the reasons that persuade companies to adopt ISO 9001 because customers tend to shop or rather do business with firms that comply with quality regulations.

Institutional theory has been criticized on the basis that there is a danger that the theory has been stretched far beyond its core purpose in terms of understanding how organizational structures and processes acquire meaning and continuity beyond their technical goals (Suddaby, 2010). In fact, Mohamed (2017) observes that institutional theory has several significant theoretical/methodological issues, which limit its applicability and effectiveness. The most important issues include static institutional explanations, and difficulty while calculating some institutional variables. Meyer & Hollerer (2014) negates/refutes the claims of many researchers, who stated that the institutional theory is rich in concepts and has advanced to warrant more formal models and codification.

2.3 ISO Certification and Organizations

The choice of implementing ISO 9000 Quality Management Standards encouraged a firm to make internal improvements and strategic reimbursements related with the quality program (Glover et al., 2014). Firms make internal improves as a way of realizing efficiency and the said improvements encompass three-way circle of activities, which include planning, documentation, and control. It is imperative to note that documentation leads enable firms to realize enhanced quality awareness, efficiency, and higher efficiency. On the other hand, external improvements enhance the capability of firms to offer better and/or improved customer care, improve on the perceived quality of products and services and as such, be able to realize competitive advantage. Adherence to external and internal improvements and adhering to the cycle activities (planning, control, and documentation) coupled with confirming to the quality standards will make it possible for firms to measure their success and adjust accordingly. Hussein (2014) contended that the main goal of ISO 9001 is to scuttle the shipment of products that are deemed by the regulators not to have met the quality standards and by doing this, there are reduced supply and/or return of products from the buyers to the suppliers.

Available information about ISO 9000 certification indicate that close to more than one million firms have ISO 9000 quality certification. Notwithstanding these statistics, firms have reported a wide array of challenges faced before ISO 9000 certification. It is imperative to point out that the challenges faced before certification have been known to affect firm performance. Against this backdrop, these challenges can be grouped into

three categories as argued by Durai and Balakrishnan (2011), which include strategy related issues, Leadership related issues, and quality system related issues.

Challenges related to strategy issues included; strategy mapping and planning, vision, mission, and organizational values. In terms of leadership issues, the challenges included inadequate recognition, motivation, and top management commitment. In terms of quality system issues, the challenges faced included excessive paperwork, generic system, Weak Plan-Do- Check-Act cycle, none in depth internal audit etc. According to Taylor (1995) business firms pursue ISO 9000 because of the desire to realize improved operational productivity, development of high quality products, customer pressures, marketing and brand management. Naroola and Connell (1996) argued that firms accept to use or apply ISO 9000 because the approach enables them to lower the frequency of inspection from the regulators and as such, these firms can gain strategic benefits. Anderson et al. (1999) observed that firms are forced by external factors to adopt ISO 9000 because of the need to realize continuous improvement, customer satisfaction, and for the purposes of marketing strategies.

According to Jones et al. (1997), firms adopt ISO 9000 because of reasons, which the author categorized into four and they include, key clients pushing for certification, none developmental reasons, the need to avoid missing future tendering processes, ISO 9000 becoming a business requirement, ISO 9000 becoming a PR and marketing tool etc. The developmental reasons why firms adopt ISO 9000 certification include the need for firms to improve internal processes, and the need to improve the general performance so that

they are competent. The mixed reasons for adopting ISO 9000 certification include the advantages of adopting none developmental and developmental explanations.

Huang et al. (1999) examined the implications of ISO 9001 adoption in Taiwan firms, and found out that external factors were dominant when firms sought to implement and realize quality standards, while Vloeberghs and Bellens (1996) pegged adoption of ISO 9001 by firms on the need for them to realize general firm performance. The confluence of the factors above as argued by Anderson et al. (1999) precipitate business firms to adopt ISO 9000, as the certification forms one of the resource firm capabilities.

Van der Wiele and Brown (1997) conducted a study on the implications of adopting ISO 9000 by collecting data from 160 Australian firms and method of survey. The findings of the study established that firms adopt ISO 9000 as a means of meeting customer preferences, use of ISO 9000 as a basis of demanding quality, internal efficiency, and marketing purposes. On the other hand, Mwihi (2006) argued that ISO 9001 that more and more business firms are willing to adopt ISO 9001 because of the need to realize customer satisfaction, competitive advantage, and business strategy to compete at international scale, and improvement of quality of goods and services offered. As argued by Rayner and Porter (1991), firms seek to adopt ISO 9001 because of external forces and this includes but not limited to better advertisement, customer pressures, competitive pressures, and the pressing need to enter and compete at international markets.

2.4 ISO 9001 certification and operational efficiency

In a longitudinal empirical study on the effect of certification with the ISO 9000 Quality Management Standards, Terlaak and Kings (2006) finds that ISO 9000 certified organizations grow faster and that operational performance does not account for the growth. The study was conducted in North America private sector manufacturing facilities and focused on finding out whether certification with the ISO 9000 quality management standards can generate a competitive advantage and improve operational performance. The authors argue that certification communicate about the desirable organizational attributes to parties that cannot observe them directly hence provides a competitive advantage since the certification acts a market signal, signaling quality to the customers.

Terlaak and Kings (2006) undertook robust tests to find out whether changes in operational performance could have caused the facility growth and analyzed the effect of ISO 9000 on operation performance but the results did not provide evidence that certification has significant effect in the facility's operational performance. Due to the geographical gap and since the study was conducted in a private sector; it cannot be assumed that the findings of the study can apply in all sectors in Kenya.

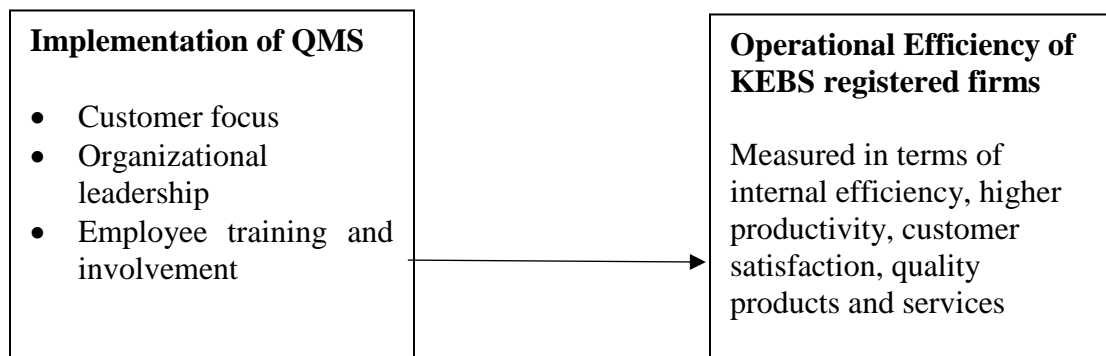
The study by Terlaak and Kings (2006) supports the finding by Heras et al. (2002) who carried out an empirical study on European manufacturing and service organizations. Using analysis of operation performance for 400 organizations before and after accreditation, the latter established that although the performance of the 400-certified

organization was much superior to the uncertified organizations, there was no evidence of improved performance after certification.

Heras et al. (2002)'s study is not in tandem with an exploratory study carried out by Nabulsi and Magd (2007) who conducted a study on the challenges and benefits of implementing ISO 9000 certification in Asia. Findings of Nabulsi and Magd (2007) indicated that adoption of ISO 9000 certification had marketing and operational related benefits, whereby the benefits according to Nabulsi and Magd (2007) are either external or internal benefits. Internal benefits are those advantages, which are related to the internal functioning of firms. These benefits include but not limited to improved internal communication, enhanced analysis of information to inform better decision-making, improved identification of organizational drawbacks and approaches to countering them, enhancement of productivity on the part of employees, reduction of costs, increasing internal efficiency, and improving employee competencies etc. External benefits include those advantages that firms acquire from the environments that they operate. As such, these benefits include higher customer satisfaction, better supplier relationship, better customer service, improved firm reputation, and reliability, better market share, and increased business.

2.5 Conceptual Framework

The researcher will use a conceptual framework to detail the relationship between the independent and dependent variables, whereby the former will be manipulated as an approach to studying its effect on the latter. The independent variable for this study will be implementation of QMS through customer focus, organizational leadership and employee training and involvement, and while the dependent variable will be operational efficiency.



Independent Variables

Dependent Variable

Figure 2.1: Conceptual Framework

2.6 Summary of Literature and Knowledge Gaps

Mwihaki (2006) contend that adoption of QMS enhances customer satisfaction, competitive advantage, business strategy to compete at international scale, and improvement of quality of goods and services offered. Porter (1991) suggested that certified organization have superior quality compared to uncertified organizations, while there was no evidence of improved performance after certification. The aforementioned

studies concentrated on firm performance as opposed to operational efficiency, which the current study seeks to establish.

Anderson et al. (1999) argues that companies adopt quality management systems because of external factors, such as the need to meet customers' tastes and preferences, continuous improvement, and because of marketing strategies. However, the authors negated other essential firm reasons that precipitate companies to adopt QMS. Jones et al. (1997) argues that firms adopt ISO 9000 because of key clients pushing for certification, none developmental reasons, the need to avoid missing future tendering processes, ISO 9000 becoming a business requirement, ISO 9000 becoming a PR and marketing tool. To this end, the authors did not detail the implications of quality management systems that the current study seeks to find out.

Vloeberghs and Bellens (1996) argued that companies adopt quality management practices as a means to enhancing their performance. However, the current study seeks to examine adoption of QMS and its effect on operational efficiency. Van der Wiele and Brown (1997) contend that firms adopt ISO 9000 as a means to meeting customer preferences, use of ISO 9000 as a basis of demanding quality, internal efficiency, and marketing purposes. However, the authors negated the aspect of operational efficiency vis-à-vis adoption of ISO 9001 certification.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter detailed the methodology of the study, which will cover the overall approach to conducting the study, that is, from data collection to data analysis. It is divided into the following sections: research design, population, sample design data collection, data analysis. In addition, the section would cover ethical considerations for the study.

3.2 Research Design

The study adopted a descriptive survey research design. This design is used to obtain information concerning the status of the phenomena to describe what exists with respect to variables or conditions in a situation (Kothari (2004). A descriptive study is one in which the problem is clearly defined and the variables known. This is supported by Cooper and Schindler (2008) who agree that the problem is structured and well understood. The basic characteristics of a descriptive research are that it provides a descriptive analysis of a given population or sample in a qualitative, quantitative or a combination of both. In addition, both types of data (qualitative and quantitative) can be presented and broad research questions used. Polit, et al (2001) assert that descriptive methods are utilized when the study attempts to define, observe and document naturally occurring phenomenon which is not easily possible to be described in an objective value. Therefore, descriptive study attempts to expound what things are like and define links between them but do not forecast the links between these variables. This justified the use of this design in that it enables the researcher to analytically explain the findings of the research based on the variables tested.

3.3 Population of the Study

According to Blumberg, Cooper, and Schindler (2008) target population refers to the entire group of units from which the researcher expects to gather data for generalizing. The target population were all 175 ISO 9001 Kenya bureau of standards certified organizations (KEBS, 2017). A census approach was employed to study all the firms listed in KEBS. Census was chosen because the population was accessible. Various scholars have recommended census to be appropriate when the target population tally is comparatively small, easily accessible, and highly variable as it enables the researcher to capture the variability of responses (Saunders et al., 2003). The unit of analysis were therefore be all firms registered with KEBS.

3.4 Data Collection

The study used primary data, which was gathered by means of a self-administered questionnaire issued to respondents. The respondents of the study were quality assurance managers and management representatives in charge of quality management system in the organizations certified by Kenya Bureau of Standards. The information collected enhanced the measuring the relationship between ISO 9001: 2008 certification and the operational performance of Kenya Bureau of Standards certified organizations.

The type of information pertaining to QMS was found by testing the extent of deployment of quality management principles like customer focus, employee involvement, and process approach in the organization under study. In addition, the researcher gathered data on the dependent variable (operational), which guided inferential statistics. Information gathered was also helpful in measuring the operational performance in relation to profitability and productivity.

3.5 Data Analysis

The statistical technique of regression analysis was used to determine the implication of ISO 9001 certification and operational efficiency of Kenya bureau of standards certified organizations. Once the data was received, it was edited and checked for completeness and consistency. Responses were required from the respondents on blank spaces. Consequently, data was coded, categorized, and keyed into statistical packages for social sciences (version 20.0) in making data ready for analysis. The objective of data analysis was to describe, evaluate, and interpret data. Measures of central tendency was undertaken to get a feel of the data. Factor analysis was undertaken to test the validity of data, while reliability and consistency were tested by measuring the Cronbach's alpha coefficient and reliability of 0.7

The study applied the regression model:

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where:

Y = Operational Efficiency

β_0 = Constant Term

$\beta_1 - \beta_4$ = Regression coefficients

X_1 = Customer focus

X_2 = Organizational leadership

X_3 = Employee training and involvement

ϵ = error term

CHAPTER FOUR: DATA ANALYSIS FINDINGS AND DISCUSSION

4.1 Introduction

The main objective of this study was to establish the relationship between ISO 9001 quality management systems certification and operational efficiency of Kenya bureau of standards certified organizations. The population was 175 Kenya Bureau of Standards certified organizations. Respondents were presented with statements describing the various questions on the objective of the study. The study applied a structured questionnaire, which contained close-ended statements. The Statistical Package for Social Sciences (SPSS version 20.0) was used to run descriptive, inferential statistics, which included frequency, percentages, mean, and standard deviation. In order to simplify the discussions, the researcher provided tables and figures that summarized the collective reactions and views of the respondents. The interpretation of the results focused on the overall objective of the study.

4.2 Response Rate

There are 175 companies certified by KEBS according to the statistics provided by KEBS (KEBS, 2018). The sample size of this study was 175 respondents representing the 175 Kenya bureau of standards certified organizations. Those who filled and returned questionnaires were 143 respondents making a response rate of 81.3%, while the non-response sample was 32 respondents who constituted 18.3% as presented in table 4.1. While most scholars do not seem to agree on the acceptable level of response rate to form the basis for data analysis, Nachmias and Nachmis (2004) suggest that a response rate of 50% and above is satisfactory and represents a good basis for data analysis. Morris (2008) supports this argument that for a social study, responses bearing over 60%

response rate are sufficient for making adequate research conclusions. The researcher therefore considered that the 81.7% response rate achieved was adequate since it was above 50%, and that this would provide sufficient information for analysis and drawing of conclusions of the study will be satisfactory.

Table 4.1: Response Rate

Category	Frequency	Percentage
Response	143	81.7
Non-Response	32	18.6
Total	175	100.0

Source: Research data (2018)

4.3 Organizational Demographics

The organizational demographics used for the study focused on the years of operation in Kenya, ownership structure, number of employees, number of years the organization has been certified, position/title, and number of years worked for the organization. The organizational age in years represented the tenure in which organizations had operated. The organization age was determined by the number of years in operation.

4.3.1 Years of Operation of Kenya

The study sought to establish the years of operation for organizations certified by KEBS. Respondents were required to provide the range in years as indicated in Table 4.2.

Table 4.2: Years of Operation of Kenya

Years of operation	Frequency	Percent
Up to 10 years	24	16.8
11-20 years	13	9.1
21-30 years	23	16.1
31-40 years	31	21.7
Above 40 years	52	36.4
Total	143	100.0

Source: Research data (2018)

It is evident from Table 4.2 that majority (36.4%) of the organizations have been operating in Kenya for above 40 years followed by 21.7%, which have operated for 31-40 years. On the other hand, 16.8% of the organizations have operated for up to 10 years, while 16.1% and 9.1% have operated for 21-30 years and 11-20 years respectively. This finding suggest that most of KEBS certified organizations have experience on the operating environment and thus able to provide information on the relationship between QMS and operational efficiency.

4.3.2 Ownership Structure

The study sought to establish the ownership structure of KEBS certified organizations. Analysis of the secondary data from Kenya Bureau of Standards (KEBS, 2018) was presented in Table 4.3

Table 4.3: Structure of Ownership

Ownership	Frequency	Percent
Local	137	95.8
local and foreign	4	2.8
foreign only	2	1.4
Total	143	100.0

Source: Research data (2018)

Table 4.3 showed that majority (95.8%) of the KEBS certified organizations are locally owned, while 2.8% of the KEBS certified organizations are foreign and locally owned by, whereas 1.4% are foreign owned. This finding suggests that most of the KEBS certified organizations operating in Kenya have a good understanding of the legislations and expectations of the industry because they are locally owned.

4.3.3 Number of Employees

The study sought to investigate the number of employees that KEBS certified organizations had because one of the independent variables of the current study focused on employee training and involvement. Analysis of the collected data from the respondents was presented in Table 4.4.

Table 4.4: Number of Employees

Employees	Frequency	Percent
101-200	39	27.3
201-300	42	29.4
301-400	39	27.3
Above 400	23	16.1
Total	143	100.0

Source: Research data (2018)

From Table 4.4, majority (29.4%) of the KEBS certified organizations had 201-300 employees, which was closely followed by 27.3% who had 101-200 and 301-400 employees, whereas 16.1% of the KEBS certified organizations had above 400 employees. This finding reveals that most KEBS certified organizations had a significant number of employees, which aided the study to determine the extent of employee involvement and training.

4.3.4 Number of Years the Organization has been certified

The question posed to the respondents required them to indicate the number of years that their organizations have been certified by Kenya Bureau of Standards. Analysis of the collected data was detailed in Table 4.5.

Table 4.5: Years of Certification

Period of certification	Frequency	Percent
1-3 years	36	25.2
4-6 years	55	38.5
Over 7 years	52	36.4
Total	143	100.0

Source: Research data (2018)

Table 4.5 showed that the majority (38.5%) of the organizations received certification in the last 4-6 years, while 36.4% of the KEBS certified organizations received certification over 7 years ago, whereas 25.2% received certification in the last three years. This finding reveals that majority of the organizations understand the implication of QMS certification on operational efficiency.

4.3.5 Distribution of Respondents by Position

The job positions held by the respondents was determined by the designation. The respondents included the QMS management representatives, heads of quality assurance, and quality auditors. The research chose to deal with the foresaid senior managers in these organizations since they fully participate in the companies' quality systems and operational efficiency. Analysis of the collected data was presented in Table 4.6.

Table 4.6: Position of the Respondents

Designation	Frequency	Percent
QMS management representative	110	76.9
Head of quality assurance	27	18.9
Auditor	6	4.2
Total	143	100.0

Source: Research data (2018)

Table 4.6 indicated that majority (76.9%) of the respondents were QMS management representatives followed by heads of quality assurance (18.9%), while 4.2% were quality auditors. A higher response rate for QMS management representatives was because they oversee the day-to-day quality standards of their respective organizations.

4.3.6 Distribution of Respondents by Work Experience

The work experience of the respondents was determined by the number of years they worked in their current specified KEBS certified organizations. The work experience was measured in the range of less than 1 year, 1 to 5, 6 to 10; 11 to 15 and; 16 and above years. The number of the respondents' work experience within each company was grouped according to the range of the years worked in the organization. Analysis of the collected data was detailed in Table 4.7.

Table 4.7: Respondents' Work Experience

Experience	Frequency	Percent
1-5 years	42	29.4
6-10 years	68	47.6
11-16 years	10	7.0
Above 16 years	23	16.1
Total	143	100.0

Source: Research data (2018)

As presented in Table 4.7, it is evident that majority (47.6%) of the respondents had worked in the same organization for 6-10 years, while nearly a third (29.4%) had worked

for 1-5 years. Conversely, 16.1% of the respondents had a work experience of above years, whereas 7.0% had worked in the same organization for 11-15 years. Thus, this finding suggest that majority of the respondents had adequate organizational experience to understand the implication of QMS certification on operational efficiency of KEBS certified organizations.

4.4 Influence of Customer Focus

This section sought data on the influence of customer focus as a QMS strategy on operational efficiency of KEBS certified organizations. Respondents were provided with statement and were required to select the extent to which they agreed with the statements (Where 1 is “Not extent”, 2 is “To a small extent”, 3 is “To a moderate extent”, 4 is “To a large extent”, 5 is “To a very large extent”). Analysis of the collected data was analyzed in Table 4.8

Table 4.8: Influence of Customer Focus

	No extent	Small extent	Moderate extent	Large extent	very large extent	Mean	Standard deviation
QMS enhances coordination with customers	12	25	30	56	20	3.3	1.1675
systems to analyse feedback from customers	14	24	10	68	27	3.5	1.2496
Enhances quality of services	5	0	11	81	46	4.1	.8358
Contributes to reputable customer service	7	2	0	77	57	4.2	.9225
Creates efficiency in meeting the needs of customers	5	11	11	63	53	4.0	1.0374
Improved reliability of our customer services	5	7	12	33	86	4.3	1.0510
Enhanced handling of complaints from customers	13	18	17	73	22	3.5	1.1680
We seek frequently what the customer thinks of our supply	15	17	9	82	20	3.5	1.1858
We make it easy for the customer to provide feedback	5	0	9	59	70	4.3	.8770
Average						3.9	1.0549

Source: Research data (2018)

As indicated in Table 4.8, it is evident that majority of the respondents who scored the highest mean strongly agreed that KEBS certified organizations make it easy for the customers to provide feedback as indicated by a mean of 4.3 and a standard deviation of .8770. Similarly, a response with a mean of 4.3 and a standard deviation of 1.0510 agreed that their organizations had put in place reliable mechanism to support timely customer services. This was closely followed by statement on customer focus as a contributory factor to reputable customer service with a mean of 4.2 and a standard deviation of .9225. Further more respondents agreed that customer focus as an implication of QMS adoption

enhances quality of services as supported by a mean of 4.1 and a standard deviation of .8358. In addition, respondents agreed that customer focus approach created efficiency in handling the needs of the customers as evidenced by a mean of 4.0 and a standard deviation of 1.0374.

Furthermore, respondents agreed that their organizations were committed to enhance their capacity to handle complaints from customers, improvement of supply chains, and enhancement of systems to handle feedback from customers as supported by a mean of 3.5. On the other hand, respondents agreed that QMS enhances coordination with customers as supported by a mean of 3.3. Therefore, it can be concluded that customer focus as QMS approach influences operational efficiency of organizations certified by KEBS as supported by a computed mean of **3.9**.

4.5 Influence of Employee Training

This section sought data on the influence of employee training as a QMS strategy on operational efficiency of KEBS certified organizations. Respondents were provided with statement and were required to select the extent to which they agreed with the statements (Where 1 is “Not extent”, 2 is “To a small extent”, 3 is “To a moderate extent”, 4 is “To a large extent”, 5 is “To a very large extent”). Analysis of the collected data was analyzed in the Table

Table 4.9: Influence of Employee Training and Involvement

	No extent	Small extent	Moderate extent	Large extent	very large extent	Mean	Standard deviation
Training and involvement increases employees' interest in their jobs	7	2	6	76	52	4.1	.9417
Our employees understand our organization strategy	5	11	22	75	30	3.8	.9755
There is good rapport and trust between management and employees	5	7	33	49	49	3.9	1.0408
Coordinated and led by employees who were trained and developed inside the organization	13	25	34	51	20	3.3	1.1773
Employees are encouraged to use their skills and abilities to the most greatest extent possible	15	26	11	70	21	3.4	1.2392
Employees are considered very important	5	0	7	84	47	4.2	.8163
The organization has set up standard operating procedures	7	2	5	76	53	4.2	.9394
Employees are involved in problem-solving	5	11	10	81	36	3.9	.9720
We empower employees through training	5	7	11	41	79	4.3	1.0359
Average						3.9	1.0153

Source: Research data (2018)

As indicated in Table 4.9, it is evident that respondents who scored the highest mean agreed that organizational leadership empowers their employees through training as supported by a mean of 4.3 and a standard deviation of 1.0359. Respondents agreed that training and involvement increases employees' interest in their jobs with a mean of 4.1 and a standard deviation of .9417. The statements on use of standard operating procedures and consideration of employees as important had a mean of 4.2 and standard deviations of .9394 and .8163 respectively. On the other hand, respondents agreed that

employees are involved in problem solving and existence of a good rapport and trust between management and employees as supported by a mean of 3.9 and a standard deviation of 1.0408.

Similarly, the study established that employees understood the organizational strategy as evidenced by a mean of 3.8 and a standard deviation of .9755 coupled with encouraging employees to use their skills and abilities to the greatest extent possible as supported by a mean of 3.4. The study established that organizational coordination was undertaken by employees trained internally as evidenced by a mean of 3.3 and a standard deviation of 1.1773. The findings in this sub-section reveal that employee training significantly enhances operational efficiency as supported by a computed mean of 3.9.

4.6 Influence of Organizational Leadership

This section sought data on the influence organizational leadership as a QMS strategy on operational efficiency of KEBS certified organizations. Respondents were provided with statement and were required to select the extent to which they agreed with the statements (Where 1 is “Not extent”, 2 is “To a small extent”, 3 is “To a moderate extent”, 4 is “To a large extent”, 5 is “To a very large extent”). Analysis of the collected data was analyzed in the table

Table 4.10: Influence of Organizational Leadership

	No extent	Small extent	Moderate extent	Large extent	very large extent	Mean	Standard Deviation
A catalyst for rethinking the way you do business	13	25	33	51	21	3.3	1.1858
Understood as an opportunity to innovate	15	26	6	68	28	3.5	1.2829
ISO 9000 led to the discovery of improvement opportunities	5	0	9	82	47	4.2	.8278
The design and development of your ISO 9000 system a springboard to introduce new practices	5	11	12	79	36	3.9	.9780
The purpose of ISO 9000 certification used in daily practice	5	7	12	47	72	4.2	1.0287
QMS is integrated with practices already in place	13	25	29	55	21	3.3	1.1903
Customized the needs of our company	15	26	11	71	20	3.4	1.2329
Average						3.7	1.1037

Source: Research data (2018)

As detailed in Table 4.10, it is precise that majority of the respondents agreed that ISO 9000 led to the discovery of improvement opportunities as supported by the highest mean score of 4.2 and a standard deviation of .8278. Similarly, the study established that the purpose of ISO 9000 certification was to guide daily practice as indicated with a mean of 4.2 and standard deviation of 1.0287. On the other hand, respondents agreed that use of QMS aided introduction of new practices as evidenced by a mean of 3.9 and a standard deviation of .9780. In addition, respondents agreed that their organizations customized the needs of the company and that QMS was integrated with existing practices as supported by a mean of 3.4 and 3.3 respectively and standard deviations of

1.2329 and 1.1903 respectively. To this end, it is note-worthy to state that organizational leadership influences operational efficiency of organizations as supported by a computed mean of 3.7.

4.7 Relationship between QMS Certification and Operational Efficiency

This section sought data on the relationship between QMS certification and operational efficiency of KEBS certified organizations. Respondents were provided with statement and were required to select the extent to which they agreed with the statements (Where 1 is “Not extent”, 2 is “To a small extent”, 3 is “To a moderate extent”, 4 is “To a large extent”, 5 is “To a very large extent”). Analysis of the collected data was analyzed in the Table

Table 4.11: Relationship between QMS Certification and Operational Efficiency

	N	Mean	Std. Deviation
The organizations has streamlined internal processes to reflect organizational changing needs	143	4.2	.8123
The organization’s plans are efficient	143	3.5	1.2771
The organizations has increased output	143	4.1	.8328
The firm’s production level remains stable and effective	143	3.9	.6203
The organizations produces quality products/Service	143	4.0	.5973
The organizations strives to meet customer expectations	143	4.0	.6608
The organizations routinely implements QMS practices as a customer focus strategy	143	4.1	.4632
Average		4.0	0.7520

Source: Research data (2018)

As presented in Table 4.11, it is succinct that QMS certification enables organizations to streamline their internal processes to reflect the changing organizational needs as supported by the higher mean score of 4.2 and a standard deviation of .8123. In addition, it was evident that organizations certified by KEBS routinely implemented QMS practices as customer focus strategy and QMS enabled organizations to increase their output with a mean of 4.1 and standard deviation of .4632 and .8328 respectively. Majority of the respondents agreed that their organisations leverage QMS as a basis of producing quality products and meeting customer expectations as evidenced by a mean of 4.0 and standard deviations of .5973 and .6608 respectively. Furthermore, the analysis of data on the statement that QMS enhance a firm's production level to remain stable and effective was established to be true as respondents supported with a mean pf 3.9 and a standard deviation of .6203. Finally, the study established that QMS is a critical predictor of success of organizational plans as evidenced by a mean of 3.5. The findings in this sub-section reveals that there is a significant relationship between QMS and operational efficiency as supported by a computed mean of 4.0.

4.8 Regression Analysis

The study applied a multiple linear regression analysis to test relationship among variables (independent) on the relationship between ISO QMS certification and operational efficiency of organizations registered by KEBS. The researcher applied the statistical package for social sciences (SPSS V 21.0) to code, enter and compute the measurements of the multiple regressions for the study.

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of

variation in the dependent variable (operational efficiency of organizations certified by KEBS) that is explained by three independent variables (customer focus, organizational leadership, and employee training and involvement)

Table 4.12: Model Summary

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
1	0.866	0.749	0.731	0.116

The three independent variables that were studied, explained 74.9% on the relationship between ISO QMS certification and operational efficiency of organizations registered by KEBS has represented by the R^2 . This therefore means that other factors not studied in this research contribute 19.3% of the relationship between ISO QMS certification and operational efficiency of organizations registered by KEBS. Therefore, further research should be conducted to investigate the other implications (25.1%) of ISO QMS certification and operational efficiency of organizations registered by KEBS.

Table 4.13: ANOVA of the Regression

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3.400	3	1.133	13.872	.000 ^b
Residual	11.357	139	.082		
Total	14.758	142			

Source: Research data 2018

a. **Dependent Variable:** Operational efficiency

b. **Predictors:** (Constant), Organizational leadership, Employee training, Customer focus

The significance value is 0.00, which is less than 0.05 thus the model is statistically significant in predicting how (customer focus, organizational leadership, and employee training and involvement) influence operational efficiency, which shows that the overall model was significant.

Table 4.14: Multiple Regression Analysis

Model		Unstandardized		Standardized	T	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	4.576	0.57		6.654	0.001
	Customer focus	4.457	0.261	0.270	0.255	0.002
	Organizational leadership	4.105	0.327	0.53	0.235	0.003
	Employee training	4.405	0.479	0.361	0.165	0.004

Source: Research data (2018)

a. **Predictors:** (Constant), customer focus, organizational leadership, and employee training and involvement

b. **Dependent Variable:** Operational efficiency of KEBS certified organizations

From the regression findings, the substitution of the equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3$) becomes: $Y = 4.576 + 4.457X_1 + 4.105X_2 + 4.405X_3$

Where Y is the dependent variable (operational efficiency), X_1 is customer focus, X_2 is organizational leadership, and X_3 is employee training and involvement. According to the equation, taking all factors; (customer focus, organizational leadership, and employee training and involvement) constant at zero, operational efficiency will be 4.576. The data findings also showed that a unit increase in customer focus variable would lead to a 4.457 increase in operational efficiency ; a unit increase in organizational leadership would lead to a 4.105 increase in operational efficiency; a unit increase in employee training and involvement would lead to a 4.405 increase operational efficiency; This means that the order of significance of QMS strategies was customer focus followed by organizational leadership, and employee training and involvement respectively.

4.9 Discussion of Results and Findings

The overall objective of the study was to examine the relationship between ISO 9001 quality management systems certification and operational efficiency of Kenya bureau of standards certified organizations. The explanatory variables of the study included customer focus, organizational leadership, and employee training and involvement, while the outcome variable was operational efficiency.

Analysis of the collected data revealed that customer focus as QMS approach influences operational efficiency of organizations certified by KEBS. This finding was in tandem with a study done by Glover et al. (2014) who contended that external improvements enhance the capability of firms to offer better and/or improved customer care, improve on the perceived quality of products and services and as such, be able to realize competitive advantage. Moreover, the study established that customer focus translates into enhanced quality of services, which increase the reputation of an organization. This result agrees

with a study done Durai and Balakrishnan (2011) who suggested that customer focus is critical determinant of organizational reputation.

Analysis of the collected data revealed that training and involvement increases employees' interest in their jobs. Moreover, the study revealed that employee training significantly enhances operational efficiency. This finding suggests that organizations that train their employees are likely to realize operational efficiency. The result agrees with a study conducted by Anderson et al. (1999) who suggested that firms adopt ISO 9000 because of the need to realize continuous improvement, customer satisfaction, and for the purposes of marketing strategies, where employee training is a key approach.

Analysis of the collected data revealed that use of QMS aided introduction of new practices and organizational leadership influences operational efficiency of organizations. This finding agrees with a study done by Porter (1991) who contended that firms' leadership capabilities determine QMS adoption as a basis of producing quality products and meeting customer expectations. The study established that QMS is a critical predictor of success of organizational plans, where this result disagrees with a study done by Standards, Terlaak and Kings (2006) who suggested that operational efficiency does not lead to organizational growth.

CHAPTER FIVE: CONCLUSION, SUMMARY AND RECOMMENDATIONS

5.1 Introduction

The main objective of this study was to establish the relationship between ISO 9001 quality management systems certification and operational efficiency of Kenya Bureau of Standards certified organizations. The chapter discusses the summary of findings, conclusions and recommendations.

5.2 Summary

The study sought to establish the relationship between ISO 9001 quality management systems certification and operational efficiency of Kenya Bureau of Standards certified organizations. The study sought to establish general information from the respondents so that to ascertain whether they understood the relationship between QMS and operational efficiency. The explanatory variables of the study include customer focus, employee training, and organizational leadership, while the outcome variable was operational efficiency of KEBS registered organisations.

Analysis of the collected data established that KEBS certified organizations make it easy for the customers to provide feedback and KEBS certified organizations had put in place reliable mechanism to support timely customer services. In addition, the study established that customer focus approach enhanced the reputation of the customer service. Further more respondents agreed that customer focus as an implication of QMS adoption enhances quality of services. In addition, respondents agreed that customer focus approach created efficiency in handling the needs of the customers.

Further to the above, respondents agreed that training and involvement increases employees' interest in their jobs and organizational leadership can empower their employees through training. Respondents agreed that employees are involved in problem solving and existence of a good rapport and trust between management and employees. The study established that organizational coordination was undertaken by employees trained internally.

Similarly, the study established that the purpose of ISO 9000 certification was to guide daily practice and use of QMS aided introduction of new practices. In addition, respondents agreed that their organizations customized the needs of the company and that QMS was integrated with existing practices. It was evident that organizations certified by KEBS routinely implemented QMS practices as customer focus strategy and QMS enabled organizations to increase their output. The study established that organisations leverage QMS as a basis of producing quality products and meeting customer expectations.

5.3 Conclusion

From the analysis of the findings, it can be concluded that there exist a significant relationship between ISO 9001 quality management systems certification and operational efficiency of Kenya Bureau of Standards certified organizations. This is revealed by statements, such as customer focus as a contributory factor to reputable customer service. In fact, it can be concluded that customer focus as QMS approach influences operational efficiency of organizations certified by KEBS as supported by a computed mean of 3.9. Similarly, the study concludes that employee training significantly enhances operational

efficiency as supported by a computed mean of 3.9 and organizational leadership influences operational efficiency of organizations as supported by a computed mean of 3.7.

5.4 Recommendations of the Study

Based on the findings of the study and conclusions drawn, the following recommendations are made. The study established that customer focus as an approach to QMS enables organizations to increase their reputation through reliable and timely feedback. Accordingly, the study recommends that organizations should leverage QMS certification as a means to improving their operational efficiencies because by focusing on customers, organizations are able to offer products and services to different market niches through product and service customization.

The study established that involvement of employees was a critical predictor of operational efficiency. In light of this context, the study recommends that organizations should train employees with a view to meeting the quality standards and expectations of the contemporary business world because skills and expertise define the efficiency of processes at organizational level. Furthermore, the study established that organizational leadership predicates operational efficiency because QMS certification is an implication of committed leadership. Accordingly, the study recommends that top management of organizations should formulate process innovation approaches through environmental dynamism and resource capabilities to meet quality standards.

5.5 Limitations of the Study

The researcher encountered various challenges when conducting the research that included the fact that the KEBS certified organizations ordinarily do not want to give

information due to client confidentiality. The findings of the study may not be generalizable to other organisations in Kenya due to differences in social, political and economic environments in different parts of the country. In addition, some of the respondents would not find the subject to be of interest.

The organisations were distributed all over the country and some were hard to reach. Additionally, some respondents would not want to give the information as they considered it of competitive importance. This study was also limited by other factors in that some respondents may have been biased or dishonest in their answers. However, the researcher did look for contradictions in the information given and no inconsistencies were found.

5.6 Suggestions for further Study

From the analysis of the findings, it can be suggested that a study should be conducted to establish factors that influence implementation of quality standards. Others various ways of collecting data, different study design should be employed to see if such results would be gotten or if there will be variation. A study can also be carried out on operational efficiency of other certification bodies. Similar research should be carried out in non-certified organizations to see whether the same results will be achieved.

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APPENDICES

Appendix 1: Questionnaire

Dear Respondent,

This questionnaire is designed to collect data from firms certified by Kenya Bureau of Standards (KEBS) on the relationship between ISO 9001 certification and operational efficiency. The data collected shall be used solely for academic research and it shall be treated with strict confidence. Your participation in facilitating the study is highly appreciated.

SECTION 1: COMPANY INFORMATION

1.	Name of Organization (Optional):
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2.	Years of operation in Kenya (Tick one as appropriate)									
	Up to 10 years	<input type="checkbox"/>	11-20 years	<input type="checkbox"/>	21-30 years	<input type="checkbox"/>	31-40 years	<input type="checkbox"/>	Above 40 years	<input type="checkbox"/>
3.	Ownership structure (Tick one as appropriate)									
	Local	<input type="checkbox"/>	Local and Foreign	<input type="checkbox"/>	Foreign only	<input type="checkbox"/>				
4.	Number of employees (Tick one as appropriate)									
	Up to 100	<input type="checkbox"/>	101-200	<input type="checkbox"/>	201-300	<input type="checkbox"/>	301-400	<input type="checkbox"/>	Above 400	<input type="checkbox"/>

5.	Number of years the organization has been certified (Tick one as appropriate)					
	1-3years	<input type="checkbox"/>	4-6 years	<input type="checkbox"/>	Over 7 years	<input type="checkbox"/>

6.	Please state your position/Title(Tick one as appropriate)									
	QMS management representative	<input type="checkbox"/>								
	Head of quality assurance	<input type="checkbox"/>								
	Other	<input type="checkbox"/>								
7.	Indicate the number of years you have worked for this organization(Tick one as appropriate)									
	Less than 1 year	<input type="checkbox"/>	1-5 years	<input type="checkbox"/>	6-10 years	<input type="checkbox"/>	11-15 years	<input type="checkbox"/>	Over 16 years	<input type="checkbox"/>

SECTION B: QUALITY MANAGEMENT SYSTEMS

Please indicate to what extent you agree with the following statements concerning implication of ISO 9001 certification in enhancing operational efficiency

Customer Focus	1	2	3	4	5
QMS enhances coordination with customers					
We have systems to analyze feedback from customers					
Enhances quality of services					
Contributes to reputable customer service					
Creates efficiency in meeting the needs of					

customers					
Improved reliability of our customer services					
Enhanced handling of complaints from customers					
We seek frequently what the customer thinks of our supply					
We make it easy for the customer to provide feedback					

Please indicate to what extent you agree with the following statements concerning implication of ISO 9001 certification in enhancing operational efficiency

Employee Involvement and Training	1	2	3	4	5
Training and involvement increases employees' interest in their jobs					
Our employees understand our organization strategy					
There is good rapport and trust between management and employees					
Coordinated and led by employees who were trained and developed inside the organization					
Employees are encouraged to use their skills and abilities to the most greatest extent possible					
Employees are considered very important					

The organization has set up standard operating procedures					
Employees are involved in problem-solving					
We empower employees through training					

Please indicate to what extent you agree with the following statements concerning implication of ISO 9001 certification in enhancing operational efficiency

Organizational Leadership	1	2	3	4	5
A catalyst for rethinking the way you do business					
Understood as an opportunity to innovate					
ISO 9000 led to the discovery of improvement opportunities					
The design and development of your ISO 9000 system a springboard to introduce new practices					
The purpose of ISO 9000 certification used in daily practice					
QMS is integrated with practices already in place					
Customize the needs of our company					

SECTION C: OPERATIONAL EFFICIENCY

Please indicate to what extent you agree with the following statements operational efficiency in your organization

Operational efficiency	1	2	3	4	5
Internal efficiency					
The organizations has streamlined internal processes to reflect organizational changing needs					
The organization's plans are efficient					
Higher Productivity					
The organizations has increased output					
The firm's production level remains stable and effective					
Quality products					
The organizations produces quality products/Service					
Customer satisfaction					
The organizations strives to meet customer expectations					
The organizations routinely implements QMS practices as a customer focus strategy					

Thank you

Appendix 2: letter of Introduction



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P.O. Box 30197
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DATE.....19/11/2018

TO WHOM IT MAY CONCERN

The bearer of this letterIMMACULATE NYAMBURA CHEGE

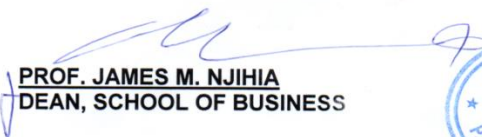
Registration No.....DBI/71410/2014

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.


PROF. JAMES M. NJIHIA
DEAN, SCHOOL OF BUSINESS

