THE IMPACT OF INTERNATIONAL STANDARDS ORGANIZATION 9001: 2008 STANDARDS CERTIFICATION ON THE PERFORMANCE OF PUBLIC UNIVERSITIES IN KENYA

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NOVEMBER 2015
DECLARATION

This research proposal is my original work and has not been presented to any other university or institution of higher learning for academic award

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This research project has been submitted for examination with my approval as the university supervisor

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DEDICATION

I would like to dedicate this project to my loving wife Emily our son Wycliff and our daughter Tiffany. I also dedicate it to my dad Joseph, mum Grace and my brothers Albert and Wilfred and my sisters Rodah, Doris and Nancy. Thank you for being a constant source of inspiration and encouragement.
# TABLE OF CONTENTS

DECLARATION .......................................................................................................................... ii

ACKNOWLEDGEMENTS ......................................................................................................... iii

DEDICATION ............................................................................................................................ iv

LIST OF TABLES .................................................................................................................... viii

ABBREVIATIONS ................................................................................................................... ix

ABSTRACT .................................................................................................................................. x

CHAPTER ONE: INTRODUCTION ......................................................................................... 1

1.1 Background of the Study ................................................................................................. 1

   1.1.1 ISO 9001: 2008 Standard Certification ................................................................. 2
   1.1.2 Performance ........................................................................................................... 4
   1.1.4 Public Universities in Kenya ................................................................................ 7

1.2 Research Problem .......................................................................................................... 8

1.3 Research Objective ........................................................................................................ 9

1.4 Value of the Study ......................................................................................................... 9

CHAPTER TWO: LITERATURE REVIEW .............................................................................. 11

2.1 Introduction .................................................................................................................... 11

2.2 Theoretical Review ....................................................................................................... 11

   2.2.1 The Balanced Scorecard Theory ...................................................................... 11
   2.4.2 Resource Based View ....................................................................................... 12
   2.4.3 The Contingency Theory ................................................................................... 13

2.3 Determinants of Public Universities Performance ..................................................... 14

   2.3.1 Government Policies ......................................................................................... 14
   2.3.2 Management Efficiency .................................................................................... 15
   2.3.3 Growth Levels .................................................................................................. 16
   2.3.4 Quality ............................................................................................................... 16

2.4 Empirical Review ......................................................................................................... 17

2.5 Summary of Literature Review ..................................................................................... 25
CHAPTER THREE: RESEARCH METHODOLOGY ......................................................... 25
3.1 Introduction ........................................................................................................ 25
3.1 Research Design ............................................................................................... 26
3.2 Population of the Study ................................................................................... 26
3.3 Data Collection ................................................................................................. 26
3.4 Data Analysis .................................................................................................... 27
  3.4.1 Analytical Model .......................................................................................... 27
  3.4.3 Test of Significance ...................................................................................... 28

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND INTERPRETATION ............ 29
4.1 Introduction ........................................................................................................ 29
4.2 Descriptive statistics ....................................................................................... 29
  4.2.1 Response Rate ............................................................................................. 29
  4.2.2 Summary Statistics ..................................................................................... 30
  4.2.2.1 Summary Statistics for ISO 9001:2008 Certified Universities ............... 30
  4.2.2.2 Summary Statistics for Non ISO 9001:2008 Certified Universities ......... 30
4.3 Correlation Analysis ......................................................................................... 31
  4.3.1 Correlation Analysis for ISO 9001:2008 Certified Universities ............... 31
  4.3.2 Correlation Analysis for Non ISO 9001:2008 Certified Public Universities ......................................................... 32
4.4 Regression Analysis ......................................................................................... 33
  4.4.1 Regression Analysis for ISO Certified Universities .................................. 33
  4.4.1.1 Influence of ISO certification on Surplus/deficit as a percentage of income ................................................................. 33
  4.4.1.2 Influence of ISO certification on Operating Cost Recovery ...................... 35
  4.4.1.3 Influence of ISO Certification on Administrative Efficiency .................. 36
  4.4.2 Regression Analysis for Non ISO Certified Universities ......................... 38
  4.4.2.1 Influence of Non-ISO Certification on Surplus/Deficit as a % of Income ................................................................. 38
  4.4.2.2 Influence of Non ISO certification on Operating Cost Recovery ............ 39
  4.4.2.3 Influence of Non-ISO Certification on Administrative efficiency .......... 41
4.5 Interpretation of the Findings .......................................................................... 43

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .......... 45
5.1 Introduction ....................................................................................................... 45
5.2 Summary .......................................................................................................... 45
5.3 Conclusions ........................................................................................................................................46
5.4 Recommendations for Policy ............................................................................................................46
5.5 Limitations of the Study ....................................................................................................................47
5.6 Suggestion for Further Research ....................................................................................................47
REFERENCES ........................................................................................................................................49
APPENDIX I: List of Public Universities in Kenya as at 31st December 2014 ...........................55
Table 4.1: Summary Statistics for ISO 9001:2008 Certified Universities ....................................30
Table 4.2: Summary statistics for Non –ISO 9001:2008 Certified Universities .................30
Table 4.3: Correlation Analysis for ISO Certified Universities ...........................................31
Table 4.4: Correlation Analysis for Non ISO 9001:2008 Certified Universities ..................32
Table 4.5: Model Summary I .............................................................................................33
Table 4.6: ANOVA I ..........................................................................................................34
Table 4.7: Regression Coefficients I ..................................................................................34
Table 4.8: Model Summary II ...........................................................................................35
Table 4.9: ANOVA II .........................................................................................................35
Table 4.10: Regression Coefficients II ..............................................................................36
Table 4.11: Model Summary III .........................................................................................36
Table 4.12: ANOVA III .....................................................................................................37
Table 4.13: Regression Coefficients III .............................................................................37
Table 4.14: Model Summary IV .........................................................................................38
Table 4.15: ANOVA IV .....................................................................................................38
Table 4.16: Regression Coefficients IV .............................................................................39
Table 4.17: Model Summary V ..........................................................................................39
Table 4.18: ANOVA V ......................................................................................................40
Table 4.19: Regression Coefficients V .............................................................................40
Table 4.20: Model Summary VI .........................................................................................41
Table 4.21: ANOVA VI ....................................................................................................42
Table 4.22: Regression Coefficients ..................................................................................42
**ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
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<td>BSC</td>
<td>Balanced Score Card</td>
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<td>EPS</td>
<td>Earnings per Share</td>
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<td>ISO</td>
<td>International Standards Organization</td>
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<td>KCSE</td>
<td>Kenya Certificate of Secondary Education</td>
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<td>KIPI</td>
<td>Key performance indicators</td>
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<td>KPLC</td>
<td>Kenya Power and Lighting Company</td>
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<td>QMS</td>
<td>Quality Management Systems</td>
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<td>RBV</td>
<td>Resource Based View</td>
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<td>ROA</td>
<td>Return on Assets</td>
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<td>ROE</td>
<td>Return on Equity</td>
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<td>ROS</td>
<td>Return on Sales</td>
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<td>SIC</td>
<td>Standard Industrial Code</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<tr>
<td>TQM</td>
<td>Total Quality Management</td>
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<tr>
<td>UNIDO</td>
<td>United Nations Industrial Development Organization</td>
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ISO standards make a positive contribution to the world and facilitate trade, spread knowledge, disseminate innovative advances in technology, and share good management and conformity assessment practices. However, despite the number of benefits in favor of ISO certification, whether the standard actually improves business performance and profitability remains debatable. Thus, this study investigated the impact of ISO 9001-2008 Standards Certification on the performance of public universities in Kenya. This study adopted a descriptive research design. The target population for this study comprised all the 22 public universities in Kenya. The research used secondary data, which was obtained from the audited financial statements, statutory returns to oversight bodies including the Commission for University Education and the Ministry of Education. The data covered a period of 5 years from the year 2009 to 2014. Multiple linear regression equation was used to establish the relationship between the independent and dependent variables. The study findings established that surplus/deficit as a % of income, operating cost recovery and administrative efficiency as measures of performance have a positive and negative relationships respectively with the performance of ISO 9001-2008 certified public universities in Kenya. The study concluded that concludes that ISO 9001:2008 influences the performance of public universities in Kenya and it not a mere marketing tool that improves public image of the institutions. The study recommended that all public universities should adopt the ISO 9001:2008 certification standards to improve their performance and growth.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

The demand for university education in Kenya exceeds the capacity of public universities to admit all qualified KCSE candidates. The quality of education in public universities has been negatively affected to a larger extent than private universities due to the large number of admitted students against limited available resources (Gudo et al., 2011). Many secondary school graduates and the working class look for opportunities to pursue university education. With the increasing numbers of students seeking places in public universities, the question of quality is critical and requires urgent attention (Gudo et al., 2011). There has been a widespread perception that the quality of education and training in public universities has declined because of increased student enrolment, inadequate and outdated equipment and facilities, frequent university disturbances and low staff morale (Kinyanjui, 2007).

In Kenya, in an effort to have a lasting and sustainable change in the way services are offered and performance managed in the public sector, the government introduced ISO certification policy requirement as a measure of quality standards in all corporations as for improvement on service delivery to Kenyans (Gichohi, 2010). To remain competitive, many Public Universities in Kenya have started the ISO 9001 certification process. ISO 9001 is part of a series generally referred to as ISO 9000 (Okibo and Kimani, 2013). The ISO 9000 family series is currently used by thousands of companies the world over to be more efficient and effective in the delivery of their products and services and ultimately to better satisfy their customers’ needs (Lamport et al., 2010). The
reputation and sustainability of a University is dependent of its provision of high quality programmes at manageable costs (Wong, 2013).

The common way for organizations to show that they meet all the requirements of ISO standards certification is by using an independent third party usually a certification body to carry out an audit of the organization. If the audit is successful, the organization will be issued with a certificate of conformity and then the initiation programme, which involves ongoing surveillance to ensure that the system is maintained in accordance to the standards. The value of the certification indicates the degree of public confidence and trust, which is established by a competent and impartial assessment by a third party. Typically, there is only one certification body per country (UNIDO, 2012). In Kenya, the Kenya Bureau of Standards does accreditation. Accreditation bodies can chose to participate in multilateral recognition arrangements to ensure that the criteria used for accreditation is comparable around the world.

1.1.1 ISO 9001: 2008 Standard Certification

ISO standards make a positive contribution to the world and facilitate trade, spread knowledge, disseminate innovative advances in technology, and share good management and conformity assessment practices. ISO standards provide solutions and achieve benefits for almost all sectors of activity, including agriculture, construction, mechanical engineering, manufacturing, distribution, transport, healthcare, information and communication technologies, the environment, energy, safety and security, quality management, and services. Experts drawn from different fields like industrial, technical and business are engaged in developing ISO standards based on clear market requirements. The experts may be joined by others with relevant knowledge, such as representatives of government agencies, testing laboratories, consumer associations and academia,
and by international governmental and non-governmental organizations (ISO Annual Report, 2011).

ISO 9001 specifies the basic requirements for a quality management system (QMS) that an organization must fulfill to demonstrate its ability to consistently provide products (which include services) that enhance customer satisfaction and meet applicable statutory and regulatory requirements (ISO, 2009). The ISO 9001 family of quality management system standards are meant to enable organizations to set up effective management systems with which they can meet the needs of interested parties and assure sustained success. The evaluation tool preferred by many organizations for feedback on system effectiveness has been third party audit with success and certification taken as an indicator of management system effectiveness (Okwiri, 2013). Since its initial publication in 1987, the number of implementations of ISO 9001 quality systems has increased year after year in the business context and it has led to a growing number of business information services being managed using these standards (Mola, 2007).

The mostly used standard for accreditation is the ISO 9001: 2008, which emphasizes on quality management systems (UNIDO, 2012). The ISO 9001:2008 systems focus on prevention, on quality of product realization and on improvement of customer satisfaction. It provides the framework and the audit requirements for the quality management system (Kawthar & Vinesh, 2011). Quality management has become increasingly present in the life of organizations. Their survival is mainly linked to the quality of their activities. The way in which each organization focuses on quality issues may vary according to the sectors and the environment where it carries out its activities and of course, the organization’s own strategies (Mola, 2007). To satisfy the requirement of quality management system an organization needs to demonstrate its ability to consistently provide
products that meet legal and statutory requirements and meet customer requirement. Additionally, to satisfy the requirements an organization should enhance customer satisfaction through effective application of the system including continual improvement of the system and conformity to customers and applicable statutory requirements (UNIDO, 2012).

1.1.2 Performance

Performance is one of the words which definition is very flexible as everyone places the concept that suits best, and let the context take care of the definition. In general terms performance can be seen as the result of activities (e.g. of an organization) over a given period of time (Illmer, 2011). Performance can be divided into financial or business performance. Financial performance is at the core of the organizational effectiveness domain. Accounting-based standards such as return on assets (ROA), return on sales (ROS) and return on equity (ROE) measure financial success. Business performance measures market-related items such as market share, growth, diversification, and product development. Indicators related to growth/share in existing business (e.g. sales growth and market share) and those indicators related to the future positioning of the firm (e.g. new product development and diversification) are used to measure business success (Gibcus & Kemp, 2003).

Performance measurements are essential for accountability and strategic planning. Performance measurement is the process of quantifying and performance measures as a metric used to quantify the efficiency and effectiveness of action respectively (Wong, 2013). Performance measurement involves measuring how well organizations are managed against their targets and the value they generate for their stakeholders (Illmer, 2011). Performance management aims at by and large to
attaining operational effectiveness, which in a broader sense refers to a number of practices that allow an organization to better utilize its resources. The quest for productivity, quality and speed has spawned a remarkable number of management tools and techniques; total quality management, benchmarking, re-engineering and change management (Mbu and Sarisar, 2013).

Universities are responsible for themselves in resources seeking and market seeking. They need to be self-sufficient and be accountable to the stakeholders. Increasing call for accountability to performance but with less financial supports from governments has caused university managers much burden in management control (Wang, 2010). The traditional performance measurement approach by goal rational model may not be able to serve performance measurement in universities. Wang (2010) posits that performance measurement in universities should be by the distinction of academic performance and management performance based on four sub-dimensions, which include quality of education, research, finance and human resources. The four sub-dimensions construct a balanced concept for university managers in management control. In addition, universities also use Key Performance Indicators in performance measurement. There are different high level KPIs in the measurement of institutional performance from a perspective of governors in higher education, covering both financial and non-financial aspects. Academic performance is a primary indicator to most universities in performance measurement. It is an icon that people see how good or bad a university is. As universities differ, emphases on academic performance differ from one discipline to another (Wang, 2010).

1.1.3 Effect of ISO 9001: 2008 Standard Certification on Performance

Most new users of the ISO 9000 family of standards obtain measurable benefits early in the process of implementing the requirements in their operations. These initial benefits are generally due to
improvements in their organization and internal communication. The benefits must be strengthened through effective internal auditing and management review of system performance. Like all systems, it either improves or becomes less effective. It does not remain static for long (ISO, 2009). ISO certification helps firms with internal improvements and strategic benefits that accompany the quality tool. An organization that obtains ISO certification fulfills a customer’s quality requirements and applicable regulatory requirements, while targeting enhanced customer satisfaction and achievement of continual improvement of its performance (ISO, 2011).

A large body of literature studying the effects of ISO 9000 shares the general assumption that ISO 9001-2008 certification improves performance. A study by Thilakarathne and Chithrangani (2014) established that the principle perceived benefits of implementing ISO 9001: 2008 by certified companies are customer satisfaction, increase quality awareness, reduces the production time and concluded that there is an impact towards ISO 9001: 2008 quality management systems by certified organizations. Terlaak and King (2004) found out that, ISO certified facilities grow faster after certification, and that operational improvements do not account for this growth. Starke et al. (2012) established that ISO certification was associated with an increase in sales revenues, decrease in cost of goods sold/sales revenue and increase in the asset turnover ratios of the certified firms. In addition, Al-Refaie et al. (2012) found out that ISO 9001 certification has significant effects on quality outcomes, customer satisfaction and business performance.

Further, in Kenya Okibo and Kimani (2013) established that streamlining of processes as a result of ISO certification influences the public universities’ service delivery most, followed by curricular development, teaching facilities improvement and adaptability to changing market needs. Khalonyere, (2013) examined the influence of ISO 9001 quality management systems
certification on Universities' competitive advantage in Nairobi and established that there is an effect of ISO 9001 quality management systems certification to the competitive advantage of Kenya's Universities. High correlation was established between the predictor's variables, which included customer focus, leadership, involvement of people, process approach, systems approach, factual approach, continuous improvement, and closer supplier relationship, and the response variable, which was competitive advantage.

1.1.4 Public Universities in Kenya

Public universities in Kenya refer to the universities that are funded or subsidized by the government and established through institutional Acts of Parliament (Okibo and Kimani, 2013). According to Magutu et al. (2010) university education in Kenya began in 1963 with just 571 students enrolled in Nairobi University College but since then the system has undergone some expansion, and by 1998 there were a total of six public universities and 18 private universities with varying degrees of recognition in the country. Currently in Kenya, there are 22 public universities. Each public university has its own act, dating back to its date of foundation. Because each university derives its powers from its specific legal instrument, co-ordination even in the interest of standardization has not been possible (Mwiria et al, 2007). Out of the 22 public universities in Kenya 16 of them are ISO 9001:2008 certified while the rest six have not been ISO certified. The 21st century has brought challenges and opportunities for higher education in Kenya. The institutions need to understand their resources, capabilities and core competencies, which have a direct link to the institutions’ ability to achieve their strategic plans and enhance their performance (Kinyanjui & Juma, 2014).
1.2 Research Problem

The certification process inevitably requires significant effort with respect to designing; implementing and documenting appropriate processes, entailing both direct and indirect costs associated with consulting and audit fees, employee training (Corbett et al., 2002). Despite the number of benefits in favour of ISO certification, whether the standard actually improves business performance and profitability remains debatable (Lamport et al., 2010). According to UNIDO, (2012) in some countries the role of accreditation is not well understood by the purchasers or by the certified organizations. In addition, a number of certification bodies refuse to provide information about the organizations they certified. This in turn raises doubts about the level of transparency and openness of certification bodies and the ability of the institution to provide quality services.

In Kenya, studies have established that the unplanned growth of university education without commensurate rise in the level of funding is a threat to quality education at the public universities in Kenya (Gudo et al, 2011) hence; the benefits of ISO certification may not be realized. Most of the public universities in Kenya are ISO certified but their performance has been a question of concern. Student strikes have been witnessed year in and year out in most of the ISO certified public universities with most of them being blamed on poor service delivery and management. Thus, this study aims at establishing whether ISO 9001: 2008 Standards Certification influences the performance of public universities in Kenya.

Several papers have analyzed the impact of ISO 9000: 2008 certification on performance on the international and local scene and reported varied results. For instance, studies by Terlaak and King
Starke et al. (2012), Lamport et al. (2010) and Al-Refaie et al. (2012) established that ISO Certification influences both financial and business performance. However, the studies were based on profit making organization whose operations differ from those of public universities. Locally, Agutu (2011) established that ISO 9000 is important especially with respect to quality control, corporate branding and image, international grants funding, international programs and linkages and international student enrolment but the study was on internalization of ISO certification in the University of Nairobi. However, Gudo et al (2011) and Okwiri (2013) obtained different results, where they established ISO certification was not consistently associated with having a quality assurance system or better quality education.

The studies pointed out that ISO Certification was perceived as an end by the management team and enforced without adequate engagement of stakeholders and concluded that ISO certification was a mere marketing tool that improves public image of the institutions that were ISO certified. Hence, confusion as to whether ISO 9000: 2008 standards certification influences performance or it is literally a marketing tool. Thus, this study endeavors to address; Does ISO 9001: 2008 standards certification influence performance of public universities in Kenya?

1.3 Research Objective

To investigate the impact of ISO 9001-2008 Standards Certification on the performance of public universities in Kenya.

1.4 Value of the Study

The study will be beneficial to the following parties
Public Universities – Most of the public universities in Kenya are ISO Certified hence this study will help both the ISO certified and the non-certified universities to enhance the quality of their services and to evaluate their performance targets.

Policy makers – policy makers like the government, the ministry of education and the Commission for university education may use the study findings to formulate policies that will enhance the quality of education in public universities.

Future researchers and scholars – the study will add on to the existing literature on ISO certification and performance. The study will also increase the knowledge base that will enable future researchers to build upon the concepts determined by this study. The study will also be valuable to research institutions, students and other researchers.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the existing literature on ISO certification and performance by different authors and scholars. The chapter presents an overview of the ISO certification process, an overview of the determinants of performance, the theoretical and empirical literature review and then a summary of the literature review.

2.2 Theoretical Review

This study will explore the balanced scorecard theory, the resource based view and the contingency theory to provide a basis of understanding of performance.

2.2.1 The Balanced Scorecard Theory

Through their article, the balanced scorecard- “measures that drive performance” in the Harvard Business review in 1992, Robert S. Kaplan and David P. Norton were able to prompt a minor industry of academic writing and business consulting. Their approach emphasizes on the need to provide management with a set of information that covers all relevant areas of performance in an objective way. The information could be both financial and non-financial in nature. The idea of the balanced scorecard is that performance could be measured from four different perspectives. The four perspectives by Norton and Kaplan, (1992) include customer perspective which measures how customers view the organization based on aspects that customers find important e.g. quality, after sales service, inspection etc. Internal perspective, which emphasizes what skills, and process the organization, must excel at and improvement of internal processes and decision-making
procedures will have to ensue. Innovation and learning which emphasizes on how the organization can improve itself and increase value/ this perspective looks at the ability of the organization to attain and retain its competitive position through the acquisition of new skills and development of new products. Financial perspective, which indicates the way shareholders view the organizations business? Traditional financial measures could be applied here include those of profitability ROI and EPS. A ‘balance’ has to be created to prevent managers for trying to make more improvements in one area at the expense of another.

Frameworks such as balanced scorecard in for-profit settings have been increasingly adapted to performance measurement in universities. Risks are concerned that they may incompletely grab the nature of university services. The BSC is a successful performance measurement framework based on the combination of four key performance dimensions in financial perspective, customer perspective, internal business processes perspective and learning and growth perspective. It provides the four dimensions concerning how well an organization is doing in a competitive environment with a “balanced” idea to capture organizational performance. The four dimensions are translated from the organization’s visions and strategies. Thus, they build a strategic management view concerning performance related aspects, which can be applied to different organizational contexts with modifications (Wang, 2010).

2.4.2 Resource Based View

The resource-based view (RBV) emphasizes the firm’s resources as the fundamental determinants of competitive advantage and performance. It adopts two assumptions in analyzing sources of competitive advantage and performance. First, this model assumes that firms within an industry
(or within a strategic group) may be heterogeneous with respect to the bundle of resources that they control. Second, it assumes that resource heterogeneity may persist over time because the resources used to implement firms’ strategies are not perfectly mobile across firms (i.e., some of the resources cannot be traded in factor markets and are difficult to accumulate and imitate). Resource heterogeneity (or uniqueness) is considered a necessary condition for a resource bundle to contribute to a competitive advantage (Bridoux, 2007).

In the resource-based view of the firm, specific resources and capabilities affect a firm’s performance. Resources may increase the firm’s capacity to charge high prices and, thus, contribute to performance by helping the firm to appropriate the value linked to competitive advantage. Furthermore, resources may be used to erect entry barriers and so increase performance at the industry level (i.e. for all industry players to be included in the breakeven of a competitor). For instance, a firm may use its lobbying capability to prompt the government to erect entry barriers that enable the firms in the industry to charge high prices once output has been restricted (Bridoux, 2007). ISO certification is more often a necessary condition to maintain current performance rather than a sure-fire way to improve performance. Given that ISO 9001: 2008 is a public standard, it is difficult to envisage how any one firm would be able to gain sustainable competitive advantage from it. For that, a firm must have other, deeper resources that are harder to imitate (Cobert et al, 2002).

2.4.3 The Contingency Theory

The contingency theory is based on the view that there is no single best approach to manage organizations. The concept points out that organization should not be managed by one-size-fit-all
approach but should work out unique managerial strategies depending on the particular condition or situation they are facing (Ologbo et al., 2012). The fundamental nature of contingency theory is that best practices depend on the contingencies of the situation thus sometimes referred to as it all depends theory. The contingency theory attempts to identify the important variables assumed to influence organizational performance and attempts to operationalize and measure these variables and determine their effects on performance.

The theory is based on the assumptions that among contingency variables the better the performance of the organization and organizational actors perform in ways that are always in concert with the super ordinate goal of organizational effectiveness. This contingency theory on management emphasizes that no single way to manage people or work is best in every situation. It encourages managers to study individual and situational differences before deciding on a course of action (Raduan et al., 2009). Thus, for public universities to improve their business and financial performance they should develop polices based on the situation or any opportunities that may arise.

2.3 Determinants of Public Universities Performance

There are various determinants of performance in public universities some of which include, government policies, management efficiency, growth levels and quality aspects.

2.3.1 Government Policies

Government policy strategies are the elements of both plan development and plan implementation in relation to ISO certification on performance of public universities. A planned development policy for ISO certification on public university merit includes the use of assessment data, the
engagement of all stakeholders to enable the government keep an eye on public university progress and performance consistent with its policies and consequently this keeps the university on toes. For plan implementation, important elements include the way in which action steps are synchronized and completed, and the way in which progress is measured (Ruben, 2001). For universities sector to deliver public services and achieve its policy objectives, it is critical that government structures have to be managed as well. Hitt, et al.,(2011) Indicated that empirical analysis uses data from local government authorities in Kenya in order to explore the relationship between government policy management on one hand and local governance on the other. The exact local management practices that matter for the quality of local financial management in Kenya vary depending on how financial management performance. For instance stronger internal audits, better planning and budget processes, and better project implementation practices achieve better local financial management outcomes.

2.3.2 Management Efficiency

Management efficiency is a critical factor used to measure the impact of ISO 9001 - 2008 standards certification on the performance of public universities in Kenya. Gichohi (2010) stated that increased efficiency among institutions that go through the ISO 9001:2000 Quality Management Standards certification process have given a lot of thought to their processes and how to maximize quality and competence. After certification for quality management standards, the processes are established and guidelines in place for anyone to follow easily, making training, transitions, and trouble-shooting easier.

According to Thuo (2013), ISO 9000 has been widely considered as a replicable management efficiency standard for institutions to accomplish quality excellence and customer satisfaction, It
is not common knowledge that it is a homogeneous practice between all ISO 9001 certified organizations. This is because ISO 9001:2008 is based on eight-quality management principles namely customer focus, management, involvement of people, process approach, system approach to management, continual improvement, factual approach to decision making; and mutually beneficial supplier relationships. These principles serve as the major procedure for organizations in different parts of the world to obtain the certification; organizations may implement these principles in very different extents.

2.3.3 Growth Levels

Growth levels cannot be isolated when discussing the measure of ISO standards certification on the performance of public universities. According to Terlaak and Kings (2006), ISO 9000 certified organizations grow faster and that operational performance does not account for the growth. This study was conducted in North America private sector manufacturing facilities and focused its finding on whether certification with the ISO 9000 quality management standards can generate a competitive advantage and has an impact on the institutions growth.

2.3.4 Quality

According to Mokamba, Gakure, & Keraro (2013) the quality of services offered by public institution depends on its Quality Management Systems, which is a powerful tool that enables every organization to increase quality of products and/or services offered through continuous improvement of processes. The present day business-wide requirements, especially those related to quality are more and more exacting. It is possible to meet these needs and advance the economical situation at the same time by continuous quality improvement. Studies show that
civilizing quality leads to decreased costs, fewer errors, fewer delays, and better use of resources, which in turn leads to improved productivity and performance which enables a firm to capture more of the market, which enables the firm to stay in business (Summers, 2006).

2.4 Empirical Review

Cobért et al (2002) examined the effect of ISO 9000 certification on publicly traded firms in the US. The study focused on the three industrial sectors with the largest number of ISO 9000 certificates: SIC codes 28 (chemicals and allied products), 35 (industrial and commercial machinery and computer equipment) and 36 (electronic and other electrical equipment and components, except computer equipment). The study found that certification does appear to lead to improved financial performance, measured by return on assets (ROA). More precisely, the study found that firms that failed to seek certification experienced substantial deteriorations in ROA, productivity, and sales, while firms that did seek certification generally managed to avoid such declines. In other words, firms that received certification did not, on average, see their absolute performance improve, but they did see their relative performance improve substantially, compared to their uncertified peers.

Martínez-Costa & Martínez-Lorente (2004) analyses both the effect of a TQM system and the ISO 9000 implementation in company performance. A structured questionnaire using the Flynn et al. (1994) scale for measuring TQM was used to gather the data. A postal survey to nearly 3000 industrial Spanish companies with more than 100 employees was sent. The questionnaire was responded to by 713 quality managers. The study findings established a positive relationship
between TQM application and hard and soft results while only an improvement in hard results after the ISO 9000 implementation has been found.

Kawthar & Vinesh (2011) studied the impact of ISO 9000 certification on Sales: a case study of Mauritius. Using an empirical approach, the research sought to ascertain whether the mean sales of ISO certified companies was significantly greater than those of their non-certified counterparts and assesses the impact of ISO 9000 certification on sales of companies in Mauritius. The methodologies employed included an independent T-test and static and dynamic panel regression analysis. Based on a sample of 39 ISO certified companies and 39 non-ISO certified ones in 2000-2009, the study findings found a significant difference between the mean sales of the two groups (in favour of the certified companies) and a positive and significant relationship between ISO 9000 certification and sales. In addition, the dynamic panel analysis confirmed the positive relationship.

Kumar and Balakrishnan (2011) investigated the effectiveness of ISO 9001 Certified Contracting organizations in the United Arab Emirates to identify the potential reasons behind the failure of ISO 9001 certified organizations. An in-depth literature review was made. A pilot survey was organized to capture the perceptions of these contracting organizations. The pilot survey findings were reviewed and resulted in a fine-tuned main survey collected from a stratified random sample of 100 organizations out of 800 populations. The study results revealed that there were common gaps found in those certified organizations, classified into 4 basic categories such as a) leadership related issues, strategy related issues, quality system related issues and social responsibility related issues. Out of the nine constructs tested hypothetically, eight constructs revealed a significant
relationship influencing the overall system performance. Out of these 8 significant elements, only 4 have been specified in ISO 9001 Standard explicitly.

Iwaro & Mwasha (2012) investigated the effects of ISO 9001 certification on organization workmanship performance using the construction industry as a case study. A questionnaire survey was used to identify factors that contribute to poor workmanship on construction projects. The study also compared workmanship performance between ISO certified organizations and non-ISO-certified organizations. The study findings established that ISO 9001 certified organizations performed better in workmanship performance compared to non-ISO 9001 certified organizations. Additionally, a correlation relationship was established among the improvement of workmanship factors, ISO 9001 certifications, and workmanship performance.

Pantouvakis and Psomas (2013) explored the impact of ISO 9001 effectiveness on the performance of service companies. An empirical study was carried out using a sample of 100 ISO 9001:2008 certified service companies. Data were obtained from the quality managers of the companies through a structured questionnaire.

Exploratory factor analyses was applied to extract the latent factors of the indicators of ISO 9001 objectives and performance dimensions. Multiple linear regression analyses was also applied in order to determine the impact of ISO 9001 effectiveness on the performance dimensions of service companies. The study findings established that the dimensionality of the ISO 9001 effectiveness (evaluated by the degree of achievement of the standard’s objectives, namely prevention of nonconformities, continuous improvement and customer satisfaction focus) and reveal its significant contribution to the performance of the service companies. In addition, the
product/service quality and operational performance of the service companies are directly and significantly influenced by ISO 9001 effectiveness.

Nematollahi, Abbasi, & Forghani, (2014) examined the impacts of implementing ISO certification 9000 series on productivity of Barez industrial group. The study analyzed productivity records of the Barez Industrial Group consisted of eleven companies in Iran, from 1994 to 2001 by the means of Statistical Package for Social Scientists (SPSS 15). One-Sample Kolmogorov-Smirnov Test was used for data normality. The non-parametric 2-related samples Wilcoxon Test was performed. The results established that the implication of ISO 9000 series did not have any significant impact on productivity. The findings also revealed that quality management systems should be considered as a tool for achieving excellence and not as a goal, since they can give maximum efficiency and effectiveness; otherwise, they would give low or even negative efficiency and effectiveness.

Gichohi (2010) examined the factors affecting non ISO certified State Corporation in Kenya in adoption of ISO 9000 management system certification. The study used a descriptive study research design and a questionnaire to collect data, which was analyzed using factor analysis. The study established that the major reasons for not adopting ISO 9000 management system certification were investments cost and management reluctance to change. Further, the study established that the benefits derived from being ISO certified were well known to the respondents. Based on the results, the study recommended that top management of these state corporations be trained on the benefits of a corporation being ISO certified and adequate budgetary allocations to the ISO certification initiative.
Chikophe (2011) examined the challenges facing Kenyan government parastatals who intended to be ISO 9000 certified. The study also aimed at identifying the intervention measures the parastatals could use to mitigate the challenges. The study used a comprehensive interview guide and a structured questionnaire to collect data. The study findings established that the major challenges facing government parastatals during the ISO 9000 certification process were resistance to change, misunderstanding the perception of quality efforts, difficulties in understanding new processes and procedures and corrective actions, problems with auditors and consultants, and unsupportive organizational structure and organizational culture. Additionally, the study established that to deal with such challenges, parastatals should ensure top management commitment, staff involvement and training, consistent meetings, continuous follow up audits.

Gudo et al (2011) explored the perceptions on the quality of service delivery in public and private universities and the opportunities for quality university education in Kenya. Data was collected in May to November 2010 from a sample of 502 university students and 127 lecturers using structured questionnaires. The study found that public universities did not have the necessary physical facilities to effectively offer service to its current student body. The study recommended that to absorb the large number of students in a double intake and offer quality education required careful investment in physical facilities, teaching and research resources, innovative Information Communication Technology and collaboration with the private universities.

Gudo et al (2011) investigated how effectively university managers had played their role in quality assurance. The study findings established that private universities performed better than public universities in management of quality education. However, public and private universities suffered from interference by political and religious patronage. The other barrier to provision of
effective management for quality assurance among Kenyan public and private universities was found to be negative ethnicity and nepotism. In addition, the study established that Kenyan public universities suffered from insufficient teaching and learning resources and a leadership that did not satisfactorily engage its stakeholders in decision making. The study recommended that managers of the universities should deliberately take short-term leadership courses to boost their managerial skills as a significant step towards delivery of quality education.

Okwiri (2013) investigated the relationship between a successful pre-ISO 9001 certification audit and effectiveness of an organization. The study used data from multiple informants in each participating organization to identify two configuration groupings, the ISO hard elements and the systemic oriented groups and found that effectiveness of a certified organization may be predicted from the group into which it is classified. The conclusion is that certification status by itself is not an indicator of effectiveness. The study adds to the literature on the relationship between ISO 9001 certification and performance. A key implication of the findings for the managers is the need to see the quality management system standard in terms of a management technology rather than a marketing tool with certification as the visible icon.

Mulela (2013) investigated the effect of ISO 9001:2008 certification on process quality: a case study of Kenya power and lighting company. The study endeavored to establish whether KPLC achieved process quality improvements after ISO 9001:2008 certification. To establish whether KPLC had achieved process quality improvements after ISO 9001: 2008 certification, internal process and the new connections process were selected and broken down into design, quotation, way leaves acquisition, construction, metering and process interactions. Six hypotheses were
developed and tested with using one-tailed z-test at 0.05 significance level for a sample of 150 jobs done before and after ISO 9001:2008 certification. A paired t-test was performed on the mean differences of the sub-processes quality in order to make a conclusion on overall process quality. The study findings revealed that there were significant improvements in process quality in the sub-processes apart from the quotation sub-process, which recorded a reduction in quality. In addition, the study established that there was a significant improvement on overall process quality at 0.05 significance level and that process interactions improved significantly after ISO 9001:2008 certification at 0.05 significance level.

Thuo (2013) examined the adoption of ISO 9001 Quality Management Standard and Operational performance of service organizations in Kenya. The study applied a descriptive survey to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables or conditions in the service sector. A census survey was conducted on 53 service organizations with target respondents being operations managers, quality managers and implementers of ISO 9001 QMS in the respective organizations. A Likert Scale Questionnaire was used to assess the level of indulgence to the elements of the installation and implementation of ISO 9001 quality management system as well as how they perceived the improvement in measures of operational performance as a result of adopting the quality management standard. The study established that the implementation of ISO 9001 is beneficial in terms of improving the operational performance. In addition, the study established that the most important factors that guided the implementation efforts are external coordination and internal integration as these were the most important for both internally and externally motivated organizations.
Oduor (2014) evaluated the effects of ISO certification on financial performance of public sector institutions in Kenya. The study used a descriptive survey in soliciting information in the area of research and its target population was selected from 70 public sector institutions, which were operational between 2008 and 2012. Data was collected from secondary sources and analyzed using both descriptive and inferential statistics. This study revealed that ISO certification Status affects the financial performance of public sector institutions positively. The study also established that an increase in the period after ISO certification enhances the financial performance of public sector institutions and vice versa. The study recommended that the Government of Kenya review its standards and audit policies to ensure that all its institutions are compelled by regulations to adopt ISO certification and design policies to ensure that the firms that have adopted receive support during the ISO continuous improvements.

Muturi, Ochieng and Njihia (2015) investigated the effect of ISO 9001 implementation on performance of organizations in Kenya. The study-targeted organizations listed on the Nairobi Securities Exchange using secondary data available from the NSE repositories on financial performance from 19 organizations. The survey made use of web content analysis to collect data from these organizations’ websites. Data was collected on net profit, turnover and net assets over a four year period (2010-2013). The study findings revealed that that ISO 9001 certification influenced return on net assets of the organizations thereby influencing their performance. For other variables measured (net profit and turnover) there were no significant differences between the ISO 9001 certified organizations and the ones not certified on the same. In addition, there was no significant differences were noted across sectors of organizations covered in the survey.
2.5 Summary of Literature Review

ISO certification is an indicator of performance in terms of quality assurance. However, according to Waswa and Swaleh (2012) public universities should re-think the relevance of ISO certification as a key indicator of quality assurance. Waswa and Swaleh (2012) argued that while ISO certification is essential in quality management procedures and processes, public universities should invest more in a corporate culture that directly boosts research, publication and community service, which remain cardinal international tools in university rankings. As such, much of the existing literature is divided over whether ISO 9000 certification influences performance or not. For instance; studies by Kawthar & Vinesh (2011); Iwaro & Mwasha (2012) and Nematollahi et al., (2014) established that ISO certification influence performance of organizations.

In kenya, a study by Muturi et al., (2015) established that ISO certification influenced ROA hence performance but had no significant influence on net profit and turnover. On the other hand, Cobert et al., (2002), Gudo et al (2011) and Okwiri (2013) were of the view that ISO certification does not influence performance and there was no difference between certified and non-certified organization performance. In light of this, this study aims at establishing the impact of ISO 9001: 2008 certification on performance by comparing the performance of certified and non-certified public universities in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design, the study population, the sample design, data collection procedure and the data analysis technique.
3.1 Research Design

A research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). This study adopted a descriptive research design. Descriptive design is helpful in obtaining information used in devising hypotheses and proposing associations (Monsen and Horn, 2008). According to Kothari (2004), a descriptive research includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs, as it exists at present. The aim of this study was to establish the impact of ISO 9001: 2008 Standards Certification on the performance of public universities in Kenya thus a descriptive research design was helpful in devising hypothesis and proposing association between ISO certification and performance.

3.2 Population of the Study

A population is also a well-defined or a set of people, services, elements, and events, group of things or households that are being investigated. The target population for this study comprised all the 22 public universities in Kenya. Thus, the study undertook a census of the 22 public universities in Kenya. (See appendix I)

3.3 Data Collection

The research used secondary data, which was obtained from the audited financial statement, statutory returns to oversight bodies including the Commission for University Education and the Ministry of Education. Secondary data are those which have already been collected by someone else and which have already been passed through the statistical process (Kothari, 2004). The data covered a period of 5 years from the year 2009 to 2014. In addition, to the audited financial
statements, others sources of secondary data included published reports, journals, periodicals and the internet.

3.4 Data Analysis
The study used statistical data analysis to establish the association between ISO 9000 certification of public universities in Kenya. The data collected was analyzed using descriptive and inferential statistics using the Statistical Package for Social studies (SPPS). Descriptive statistic involved the use of frequency, percentages and the mean while inferential statistic was used to draw conclusions.

3.4.1 Analytical Model
Multiple linear regression equation was used to establish the relationship between the independent and dependent variables. The financial performance variables used in the analysis of the data will include Surplus/ deficit as a percentage of income, operating cost recovery and administrative efficiency as suggested by (Wang, 2010). The regression equations took the following forms

\[ Y_1 = \beta_0 + \beta_1 X_1 + \varepsilon \]
\[ Y_2 = \beta_0 + \beta_1 X_1 + \varepsilon \]
\[ Y_3 = \beta_0 + \beta_1 X_1 + \varepsilon \]

Where;

\[ Y_1 = \text{Surplus or Deficit as } \% \text{ of total income } = \frac{\text{Surplus/Deficit}}{\text{total income}} \]
\[ Y_2 = \text{operating cost recovery } = \frac{\text{operating cost}}{\text{Total revenue}} \]
\[ Y_3 = \text{administrative efficiency } = \frac{\text{Administrative expenses}}{\text{Total expenses}} \]
\[ X_1 = \text{ISO status where 1 is for ISO certified and 0 for Non ISO Ceritified} \]

\[ \beta_1 - \text{Regression Coefficient} \]

\[ \beta_0 - \text{Intercept} \]

\[ \varepsilon - \text{Error term} \]

### 3.4.3 Test of Significance

The t-test was used to test the statistical significance of independent variables, while the F-test and ANOVA were used to test the significance of the dependent variable at 5% level of significance. In addition, the coefficient of determination (R²) was used to explain the explained and unexplained variation of the model.
CHAPTER FOUR
DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction
This chapter presents the data analysis, results and the interpretation of the study findings. The chapter presents the descriptive statistics which entails the response rate and summary statistics of the ISO and Non ISO certified universities. In addition, the chapter presents the correlation analysis and the regression analysis for both ISO and Non ISO certified public universities in Kenya.

4.2 Descriptive statistics
This presents the response rate and the summary descriptive statistics of the ISO certified and the Non ISO Certified universities

4.2.1 Response Rate
The researcher carried out a census of the 22 universities in Kenya 16 of which were ISO 9001:2008 certified while 6 were not ISO certified. Complete data was only obtained from one ISO certified university while data for 3 – 4 years was obtained from the other 14 ISO certified universities hence 46 observations while data from 1 ISO certified university was not obtained at all. For the Non ISO certified universities none of the universities had complete data, most of them had data form 1-3 years hence 15 observations from all the non ISO certified public universities.
4.2.2 Summary Statistics

4.2.2.1 Summary Statistics for ISO 9001:2008 Certified Universities

Table 4.1 represents the summary statistics for both ISO certified public universities

Table 4.1 Summary Statistics for ISO 9001:2008 Certified Universities

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Certification Status</td>
<td>46</td>
<td>1</td>
<td>1</td>
<td>1.00</td>
<td>.000</td>
</tr>
<tr>
<td>Surplus/deficit as a % of income</td>
<td>46</td>
<td>-.049</td>
<td>3.952</td>
<td>.17109</td>
<td>.583310</td>
</tr>
<tr>
<td>Operating Cost Recovery</td>
<td>46</td>
<td>.099</td>
<td>9.519</td>
<td>.87931</td>
<td>1.499308</td>
</tr>
<tr>
<td>Administrative efficiency</td>
<td>46</td>
<td>.014</td>
<td>3.035</td>
<td>.37884</td>
<td>.490382</td>
</tr>
</tbody>
</table>

Source: Research Findings

Table 4.1 indicates that Surplus/deficit as a percentage of income had a mean of 0.171 and standard deviation of 0.583 whereas operating cost recovery had a mean of 0.879 with a standard deviation of 1.499 while administrative efficiency had a mean of 0.379 and a standard deviation of 0.49 respectively.

4.2.2.2 Summary Statistics for Non ISO 9001:2008 Certified Universities

Table 4.2 presents the summary statistics for non-ISO certified public universities in Kenya

Table 4.2 Summary statistics for Non –ISO 9001:2008 Certified Universities

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Certification Status</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>.00</td>
<td>.000</td>
</tr>
<tr>
<td>Surplus/deficit as a % of income</td>
<td>15</td>
<td>-.388</td>
<td>1.000</td>
<td>.01436</td>
<td>.305190</td>
</tr>
<tr>
<td>Operating Cost Recovery</td>
<td>15</td>
<td>.003</td>
<td>1.073</td>
<td>.48077</td>
<td>.435488</td>
</tr>
<tr>
<td>Administrative efficiency</td>
<td>15</td>
<td>.019</td>
<td>.998</td>
<td>.36399</td>
<td>.403139</td>
</tr>
</tbody>
</table>

Source: Research Findings

Table 4.2 shows that Surplus/deficit as a percentage of income had a mean of 0.014 and standard deviation of 0.305 whereas operating cost recovery had a mean of 0.48 with a standard deviation
of 0.435 while administrative efficiency had a mean of 0.364 and a standard deviation of 0.403 respectively.

4.3 Correlation Analysis

This represents the correlations for both ISO 9001:2008 certified and Non ISO 9001:2008 certified public universities.

4.3.1 Correlation Analysis for ISO 9001:2008 Certified Universities

Table 4.3 presents the correlation analysis for ISO Certified Universities

Table 4.3 Correlation Analysis for ISO Certified Universities

<table>
<thead>
<tr>
<th></th>
<th>ISO Certification Status</th>
<th>Surplus/deficit as a % of income</th>
<th>Operating Cost Recovery</th>
<th>Administrative efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Certification Status</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus/deficit as a % of income</td>
<td>.128</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Cost Recovery</td>
<td>-.044</td>
<td>.399**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Administrative efficiency</td>
<td>-.111</td>
<td>-.036</td>
<td>-.247</td>
<td>1</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Research Findings

Table 4.3 shows the correlations for ISO 9001:2008 certified public universities where ISO certification has a weak positive relationship with Surplus/deficit as a percentage of income as indicated by a correlation coefficient of 0.128. The results also show that ISO 9001:2008
certification status has a negative weak correlation with operating cost recovery while ISO Certification Status has a weak negative correlation with administrative efficiency.

4.3.2 Correlation Analysis for Non ISO 9001:2008 Certified Public Universities

Table 4.4 shows the correlation analysis for non-ISO certified public universities

Table 4.4 Correlation Analysis for Non ISO 9001:2008 Certified Universities

<table>
<thead>
<tr>
<th></th>
<th>ISO certification Status</th>
<th>Surplus/deficit as a % of income</th>
<th>Operating Cost Recovery</th>
<th>Administrative efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO certification</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus/deficit as a</td>
<td>.449</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Cost</td>
<td>-.290</td>
<td>-.101</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Recovery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative</td>
<td>.308</td>
<td>.201</td>
<td>-.682**</td>
<td>1</td>
</tr>
<tr>
<td>efficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Research Findings

Table 4.4 shows the correlations for non-ISO 9001:2008 certified public universities where non-ISO certification has a fairly weak positive relationship with Surplus/deficit as a percentage of income as indicated by a correlation coefficient of 0.449. The results also show that non-ISO 9001:2008 certification status has a negative weak correlation with operating cost recovery while non-ISO 9001:2008 Certification Status has a weak positive correlation with administrative efficiency as indicated by correlation coefficients of -0.290 and 0.308 respectively.
4.4 Regression Analysis

This presents the regression analysis for both ISO 9001-2008 certified and non-ISO 9001-2008 certified and entails a model summary, ANOVA and the model coefficients for each variable.

4.4.1 Regression Analysis for ISO Certified Universities

4.4.1.1 Influence of ISO certification on Surplus/deficit as a percentage of income

Table 4.5 indicates the Influence of ISO certification on Surplus/deficit as a percentage of income of the certified public universities.

Table 4.5 Model Summary I

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.41^a</td>
<td>.17</td>
<td>-.016</td>
<td>.585011</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification status

Source: Research Findings

The results on table 4.5 indicates that the value of 0.17 which indicates 17% of the variation in the dependent variable, Surplus/deficit as a % of income is explained by ISO 9001-2008 certification while 83% is explained by other variables outside the model and the error term. The r value of 0.41 indicates that there is a fairly weak relationship between Surplus/deficit as a percentage of income and ISO 9001-2008 certification.
Table 4.6 ANOVA I

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.553</td>
<td>1</td>
<td>.553</td>
<td>2.285</td>
<td>.024a</td>
</tr>
<tr>
<td>Residual</td>
<td>10.648</td>
<td>44</td>
<td>.242</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11.201</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification status
b. Dependent Variable: Surplus/deficit as a % of income

Source: Research Findings

Table 4.6 shows that the F-value of 2.285 is significant as the p-value of 0.024<0.05 hence the model is fit.

Table 4.7 Regression Coefficients I

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>.015</td>
<td>.201</td>
<td></td>
<td>.076</td>
</tr>
<tr>
<td>ISO Certification status</td>
<td>.073</td>
<td>.085</td>
<td>.128</td>
<td>.859</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Surplus/deficit as a % of income

Source: Research Findings

As per the study findings the resultant regression equation was as follows

\[ Y_1 = 0.015 + 0.073X_1 + \epsilon \]

Table 4.7 indicates that Surplus/deficit as a percentage of income has a positive insignificant relationship with ISO certification status which indicates that an ISO 9001-2008 certification has a positive with the Surplus/deficit as a percentage of income of ISO 9001-2008 Certified public universities.
4.4.1.2 Influence of ISO certification on Operating Cost Recovery

The results obtained are as follows

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.46(^a)</td>
<td>.22</td>
<td>-.21</td>
<td>1.514750</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification Status

Source: Research findings

The results on table 4.8 indicates that the value of 0.22 which indicates 22\% of the variation in the dependent variable (operating cost recovery) is explained by ISO 9001-2008 certification while 78\% is explained by other variables outside the model and the error term. The r-value of 0.46 indicates that there is a fairly weak relationship between operating cost recovery) and ISO 9001-2008 certification.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>.200</td>
<td>1</td>
<td>.200</td>
<td>.087</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>100.957</td>
<td>44</td>
<td>2.294</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>101.157</td>
<td>45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification Status
b. Dependent Variable: Operating Cost Recovery

Source: Research Findings

The ANOVA results on table 4.9 shows that the F statistics value of 0.87 is insignificant at 5\% level of significances since the p – value of 0.769 > 0.05
Table 4.10 Regression Coefficients II

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.018</td>
<td>.520</td>
<td></td>
<td>1.957</td>
</tr>
<tr>
<td>ISO Certification status</td>
<td>-.065</td>
<td>.220</td>
<td>-.044</td>
<td>-.295</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Operating Cost Recovery

Source: Research Findings

As per the study findings the resultant regression equation was as follows

\[ Y_1 = 1.018 - 0.065X_1 + \epsilon \]

Table 4.10 indicates that operating cost recovery has a negative insignificant relationship with ISO certification status, which indicates that an ISO 9001-2008 certification has a negative influence with the operating cost recovery of ISO 9001-2008 Certified public universities.

4.4.1.3 Influence of ISO Certification on Administrative Efficiency

Table 4.11 Model Summary III

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.346a</td>
<td>.120</td>
<td>-.010</td>
<td>.492864</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification Status

Source: Research findings

The results on table 4.11 indicates that the value of R square is 0.12 which indicates 12% of the variation in the dependent variable (administrative efficiency) is explained by ISO 9001-2008 certification while 88% is explained by other variables outside the model and the error term. The r value of 0.346 indicates that there is a weak relationship between administrative efficiency and ISO 9001-2008 certification.
Table 4.12 ANOVA III

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>.633</td>
<td>1</td>
<td>.633</td>
<td>2.6049</td>
<td>.0251a</td>
</tr>
<tr>
<td>Residual</td>
<td>10.688</td>
<td>44</td>
<td>.243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11.325</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification Status
b. Dependent Variable: Administrative efficiency

Source: Research findings

The ANOVA results on table 4.12 shows that the F statistics value of 2.6049 is insignificant at 5% level of significances since the p – value of 0.0251 < 0.05

Table 4.13 Regression Coefficients III

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>.492</td>
<td>.169</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISO Certification Status</td>
<td>-.053</td>
<td>.072</td>
<td>-.111</td>
<td>-.740</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Administrative efficiency

Source: Research Findings

As per the study findings the resultant regression equation was as follows

\[ Y_1 = 0.792 - 0.053X_1 + \epsilon \]

Table 4.13 indicates that administrative efficiency has a negative insignificant relationship with ISO 9001-2008 certification status which indicates that ISO 9001-2008 certification has a negative influence with the administrative efficiency of ISO 9001-2008 Certified public universities.
4.4.2 Regression Analysis for Non ISO Certified Universities

4.4.2.1 Influence of Non-ISO Certification on Surplus/Deficit as a % of Income

The results are as follows

Table 4.14 Model Summary IV

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.449a</td>
<td>.202</td>
<td>.140</td>
<td>.283005</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification Status

The results on table 4.14 indicates that the value of R square is 0.202 which indicates 20.2% of the variation in the dependent variable (Surplus/Deficit as a % of Income) is explained by non ISO certification while 79.8% is explained by other variables outside the model and the error term. The r value of 0.449 indicates that there is a weak relationship between Surplus/Deficit as a % of Income and non ISO 9001-2008 certification of public universities

Table 4.15 ANOVA IV

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>.263</td>
<td>1</td>
<td>.263</td>
<td>3.281</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>1.041</td>
<td>13</td>
<td>.080</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.304</td>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification Status
b. Dependent Variable: Surplus/deficit as a % of income

Source: Research Findings

The ANOVA results on table 4.15 shows that the F statistics value of 3.2881 is insignificant at 5% level of significances since the p – value of 0.0093 < 0.05
Table 4.16 Regression Coefficients IV

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-.261</td>
<td>.169</td>
</tr>
<tr>
<td>ISO certification status</td>
<td>.143</td>
<td>.079</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Surplus/deficit as a % of income

**Source:** Research Findings

As per the study findings the resultant regression equation was as follows

\[ Y_1 = -0.261 + 0.143X_1 + \varepsilon \]

Table 4.16 indicates that Surplus/deficit as a percentage of income has a positive insignificant relationship with non-ISO 9001-2008 certification status which indicates that a non ISO 9001-2008 certification has a positive influence with the Surplus/deficit as a percentage of income of non ISO 9001-2008 Certified public universities.

### 4.4.2.2 Influence of Non ISO certification on Operating Cost Recovery

The results obtained were as follows

Table 4.17 Model Summary V

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.290(^{a})</td>
<td>.084</td>
<td>.014</td>
<td>.432531</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO certification Status

**Source:** Research Findings

The results on table 4.17 indicates that the value R square is 0.084 which indicates 8.4% of the variation in the dependent variable (operating cost recovery) is explained by Non ISO 9001-2008 certification while 91.6% is explained by other variables outside the model and the error term. The
r value of 0.29 indicates that there is a weak relationship between operating cost recovery and non ISO 9001-2008 certification.

**Table 4.18 ANOVA V**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>.223</td>
<td>1</td>
<td>.223</td>
<td>1.192</td>
<td>.295a</td>
</tr>
<tr>
<td>Residual</td>
<td>2.432</td>
<td>13</td>
<td>.187</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.655</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO certification Status
b. Dependent Variable: Operating Cost Recovery

**Source: Research Findings**

The ANOVA results on table 4.18 shows that the F statistics value of 1.192 is insignificant at 5% level of significances since the p – value of 0.295 > 0.05

**Table 4.19 Regression Coefficients V**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>.735</td>
<td>.258</td>
</tr>
<tr>
<td>ISO certification Status</td>
<td>-.131</td>
<td>.120</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Operating Cost Recovery

**Source: Research Findings**

As per the study findings the resultant regression equation was as follows

\[ Y_1 = 0.735 - 0.131X_1 + \varepsilon \]
Table 4.19 indicates that operating cost recovery has a negative insignificant relationship with non-ISO certification status, which indicates that non ISO 9001-2008 certification has a positive influence with the operating cost recovery of non ISO 9001-2008 Certified public universities.

4.4.2.3 Influence of Non-ISO Certification on Administrative efficiency

The regression results were as follows

Table 4.20 Model Summary VI

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.308a</td>
<td>.095</td>
<td>.025</td>
<td>.398004</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification Status

Source: Research Findings

The results on table 4.20 indicates that the value R square is 0.095 which indicates 9.5% of the variation in the dependent variable (administrative efficiency) is explained by Non ISO certification while 90.5% is explained by other variables outside the model and the error term. The r-value of 0.308 indicates that there is a weak relationship between administrative efficiency and non-ISO 9001-2008 certification.
Table 4.21 ANOVA VI

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.216</td>
<td>1</td>
<td>.216</td>
<td>1.364</td>
<td>.264a</td>
</tr>
<tr>
<td>Residual</td>
<td>2.059</td>
<td>13</td>
<td>.158</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.275</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ISO Certification Status
b. Dependent Variable: Administrative efficiency

**Source: Research Findings**

The ANOVA results on table 4.21 shows that the F statistics value of 1.364 is insignificant at 5% level of significances since the p – value of 0.264 > 0.05

Table 4.22 Regression Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.114</td>
<td>.308</td>
<td>.481</td>
<td>.639</td>
</tr>
<tr>
<td>ISO certification status</td>
<td>.129</td>
<td>.308</td>
<td>1.168</td>
<td>.264</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Administrative efficiency

**Source: Research Findings**

As per the study findings the resultant regression equation was as follows

\[ Y_1 = 0.114 + 0.129X_1 + \varepsilon \]

Table 4.22 indicates that administrative efficiency has a positive insignificant relationship with non-ISO 9001-2008 certification status which indicates that non-ISO 9001-2008 certification has a positive influence with the administrative efficiency of non-ISO 9001-2008 Certified public universities.
4.5 Interpretation of the Findings

This study aimed at investigating the impact of ISO 9001-2008 Standards Certification on the performance of public universities in Kenya. The study findings established that Surplus/deficit as a percentage of income had a positive insignificant relationship with ISO certification status whereas operating cost recovery has a negative insignificant relationship with ISO certification status while administrative efficiency has a negative insignificant relationship with ISO certification status. The results above indicate that surplus/deficit as a percentage of income, operating cost recovery and administrative efficiency as measures of performance have a positive and negative relationships respectively with the performance of ISO 9001-2008 certified public universities in Kenya.

An examination of the non ISO 9001-2008 certified public universities established that surplus/deficit has a % of income has a positive insignificant relationship with non ISO certification status whereas operating cost recovery has a negative insignificant relationship with non ISO certification status while administrative efficiency has a positive insignificant relationship with non ISO certification status. These results indicate that surplus/deficit as a percentage of income, operating cost recovery and administrative efficiency as measures of performance have a positive and negative relationships respectively with the performance of non ISO certified public universities in Kenya.

The above findings show that ISO certification influences the performance of ISO certified Public Universities in Kenya since most of the ISO certified universities had better performance compared to the non ISO Certified public Universities. These findings are similar past studies on different
organizations. For instance, Kiplagat (2013) established that ISO 9001 certification led to positive influence of financial performance of the commercial state corporations in Kenya. Kawthar & Vinesh (2011) also established significant difference between the mean sales of the two groups (in favour of the certified companies) and a positive relationship between ISO 9000 certification and sales. Thuo (2013) also established that the implementation of ISO 9001 is beneficial in terms of improving the operational performance. Oduor (2014) also established that an increase in the period after ISO certification enhances the financial performance of public sector institutions and vice versa.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
This chapter provides a summary of the study findings, the conclusions of the study, recommendations for policy, limitations of the study and suggestions for further research.

5.2 Summary
This study investigated the impact of ISO 9001-2008 Standards Certification on the performance of public universities in Kenya. The study used surplus/deficit as a percentage of income, operating cost recovery and administrative efficiency as the dependent variables as suggested by (Wang, 2010). ISO certification status was used as the independent variable where 1 indicated ISO 9001-2008 certified public universities while 0 presented the non ISO 9001-2008 certified public universities in Kenya. The study carried out census of the 22 universities in Kenya 16 of which were ISO 9001:2008 certified while 6 were not ISO 9001-2008 certified.

An analysis of correlation and regression analysis of both the ISO 9001-2008 certified and non-ISO certified public universities in Kenya. For the ISO 9001-2008 certified public universities the study established that weak positive relationship with surplus/deficit as a % of income as had a weak positive correlation while operating cost recovery and administrative efficiency weak negative correlation with ISO 9001:2008 certification. The regression results established that surplus/deficit as a percentage of income, operating cost recovery and administrative efficiency as measures of performance have a positive and negative relationships respectively with the performance of ISO 9001-2008 certified public universities in Kenya.
For the Non ISO 9001-2008 certified public universities the study established surplus/deficit as a percentage of income and operating cost recovery a weak positive correlation with non ISO certification while administrative efficiency had a negative weak correlation Non ISO Certification Status. The regression results established that surplus/deficit as a percentage of income, operating cost recovery and administrative efficiency as measures of performance have positive and negative relationships respectively with the performance of non ISO certified public universities in Kenya.

5.3 Conclusions

The study results established that ISO 9001:2008 influences the performance of public universities in Kenya using surplus/deficit as a percentage of income, operating cost recovery and administrative efficiency as measures of performance. Thus, this study concludes that ISO 9001:2008 influences the performance of public universities in Kenya and it not a mere marketing tool that improves public image of the institutions as suggested by Gudo et al (2011) and Okwiri (2013) who established that ISO certification was not consistently associated with having a quality assurance system or better quality education. In addition the, study concludes that Non ISO 9001:2008 standards certification improves the performance of ISO Certified Universities since its adoption requires adherence to various rules and regulations to make sure the ISO certification status is upheld.

5.4 Recommendations for Policy

Based on the study findings the study recommends that all public universities should adopt the ISO 9001:2008 certification standards to improve their performance and growth. This is because ISO 9001:2008 certification requires adherence to specified rules and its renewal is subject to the observance of such rules and regulations.
In addition, the study recommends that Non ISO 9001:2008 public universities should initiate the adoption of ISO certification standards since this would greatly improve their performance in the long run.

The study also recommends that the government and other institutions associated with regulation of the public universities develop policies to ensure that ISO 9001:2008 certified public universities are obeying the ISO Certification conditions.

5.5 Limitations of the Study

The study examined the impact of ISO 9001:2008 on performance of public Universities in Kenya hence its findings are limited to public universities and not other government institutions or private universities since they function differently.

The study also used quantitative figures obtained from the universities annual reports to calculate the various performance measures. However, there are other qualitative factors like government policies, university policies, universities rankings which indicate performance of public universities which were not considered.

5.6 Suggestion for Further Research

The study investigated the impact of ISO 9001:2008 of the performance of public Universities in Kenya. Thus, an additional research is recommended on the analysis of the cost and benefits of ISO 9001: 2008 standards certification in public universities in Kenya. This is because the ISO certification process is very expensive thus to determine its benefits is vital.
The study also suggests additional research on the impact of ISO 9001:2008 of the performance of private universities in Kenya. This is because private universities offer the same services as public universities.
REFERENCES


APPENDIX I: List of Public Universities in Kenya as at 31st December 2014

<table>
<thead>
<tr>
<th>University</th>
<th>ISO certification status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. University of Nairobi</td>
<td>Certified</td>
</tr>
<tr>
<td>2. Kenyatta University</td>
<td>Certified</td>
</tr>
<tr>
<td>3. Jomo Kenyatta University of Agriculture and Technology</td>
<td>Certified</td>
</tr>
<tr>
<td>4. Moi University</td>
<td>Certified</td>
</tr>
<tr>
<td>5. Egerton University</td>
<td>Certified</td>
</tr>
<tr>
<td>6. Masinde Muliro University of Science and Technology</td>
<td>Certified</td>
</tr>
<tr>
<td>7. Technical University of Kenya</td>
<td>Not certified</td>
</tr>
<tr>
<td>8. Technical University of Mombasa</td>
<td>Certified</td>
</tr>
<tr>
<td>9. Chuka University</td>
<td>Certified</td>
</tr>
<tr>
<td>10. Meru University of Science and Technology</td>
<td>Certified</td>
</tr>
<tr>
<td>11. Dedan Kimath University of Technology</td>
<td>Certified</td>
</tr>
<tr>
<td>12. Karatina University</td>
<td>Not certified</td>
</tr>
<tr>
<td>13. University of Eldoret</td>
<td>Not certified</td>
</tr>
<tr>
<td>14. Laikipia University</td>
<td>Not certified</td>
</tr>
<tr>
<td>15. University of Kabianga</td>
<td>Certified</td>
</tr>
<tr>
<td>16. Maseno University</td>
<td>Certified</td>
</tr>
<tr>
<td>17. South Eastern Kenya University</td>
<td>Certified</td>
</tr>
<tr>
<td>18. Masai Mara University</td>
<td>Certified</td>
</tr>
<tr>
<td>19. Kisii University</td>
<td>Certified</td>
</tr>
<tr>
<td>20. Pwani University</td>
<td>Not certified</td>
</tr>
<tr>
<td>21. Multimedia University</td>
<td>Not certified</td>
</tr>
<tr>
<td>22. Jaramogi Oginga Odinga University of Science and Technology</td>
<td>Certified</td>
</tr>
</tbody>
</table>

*Source: Kenya Business Directory (2015)*