THE INFLUENCE OF ISO 9001 QUALITY MANAGEMENT SYSTEMS CERTIFICATION ON THE COMPETITIVE ADVANTAGE OF KENYA’S UNIVERSITIES. A SURVEY OF SELECTED ISO 9001 QMS CERTIFIED UNIVERSITIES IN NAIROBI, KENYA

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A RESEARCH PROJECT REPORT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION IN STRATEGIC MANAGEMENT OPTION OF KENYATTA UNIVERSITY

MAY, 2013
DECLARATION

I declare that this research project report is my original work and has not been submitted in this or other form for the award of a degree in this or any other university.

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DEDICATION

I dedicate this research project report to my beloved Wife Dorice and my children Alex, Samantha and Nixon.
ACKNOWLEDGEMENT

The time, support and opportunity to study are always precious when granted. I thank all those who stood by me during this time. My family especially my wife Dorice who helped me in typing this work, Dr. Bob and Dr. Tongoi, your prayers and support are invaluable. I thank God on how He is using you.

To my supervisors Dr. Ofafa Gorretty A. and Ms. Anne Muchemi who were so patient with me through this research, and added a critical mass to the body of this study, you are indeed a treasure to learners.

The Kenyatta University, The University of Nairobi, The Strathmore University, and the Catholic University of East Africa who offered me a chance to carry out this research embedded in their busy schedule and accepted this research to be carried out in their institutions; all able scholars at the universities who offered both material and wisdom to help me get through with this research report; THANK YOU.
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OPERATIONAL DEFINITION OF TERMS

Accreditation: .................. Is the recognition of a specific technical competence.

Assurance: ...................... This is inspired confidence in the product and services offered by an organization.

Certification: ................... This means compliance with a standard or specification (e.g. systems or product standards).

Conformance: .................. This is compliance to set legislations rules and procedure confirmed by a third party certified to ascertain and confirm adherence to standards of an industry.

Competitive Advantage: ....... Is a favorable position created by an organization from its core capabilities that differentiates it from its competitors.

Core competencies: ............. Includes resources that an organization has which make it able to cut a niche in its own industry and market and create its competitive advantage.

Customers: ...................... These are clients, purchasers or consumers. They are recipients of a product or service offered in the market

Educational Institution:........ An organization founded for a specific purpose of dissemination of knowledge to learners. It may also be referred to as a school.

Grand Coalition Government:... A government created with several different parties with an interest of serving the public.

Parastatal: ....................... This is a statutory body created under an act of parliament to carry out specific services for the benefit of the public.

Performance contracts: ............ Is an official contract between the government and public servants underscoring their declaration and resolve to offer quality service to the public.

Quality Education: .............. This refers to an education that can contribute to both economic and social well-being of the nation.

Quality Service Delivery:........ This is a term that refers to the services offered in an organization serving the public
<table>
<thead>
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<th><strong>Quality Management Systems</strong></th>
<th>Is a management system coordinating enterprise activity in pursuit of quality and implemented in accordance with ISO 9001, the requirements of international standard.</th>
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<tr>
<td><strong>Standards:</strong> .................</td>
<td>They are statements outlining the key elements of a quality program. They can also be described as elements of good practice.</td>
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<td><strong>School:</strong> .....................</td>
<td>Is an institution designed for teaching learners (pupils) under the direction of a teacher or an organized system of delivering education to learners.</td>
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<tr>
<td><strong>Stakeholders:</strong> ...............</td>
<td>Corporate, person, organization affected by the operations of an organization.</td>
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ABSTRACT

ISO 9001 Quality Management Systems certification is a business strategy aimed at bolstering the way organizations are managed and direct them towards realization of their competitive advantage. It is a strategic business approach that creates standards for business management systems expected to exceed customers’ expectations (Tricker and Sherring-Lucas, 2005), and comprises eight principles structured in sections which show aspects of quality (Evans and Lindsay, 2009). On the other hand, a Competitive Advantage is the delivery of equivalent customer value to target customers relative to competitors but at a lower cost (Grundy, 2003). An organization has Competitive Advantage if it has distinctive capabilities developed on the basis to either reduce costs or differentiate it from competitors. The descriptive survey was adopted to examine the influence ISO 9001 quality management systems certification on Universities’ competitive advantage in Nairobi. The respondents were asked to indicate the extent of the competitive factors two years before and two years after ISO 9001 QMS certification. They were also asked to indicate whether the changes if any, were due to the certification only or other reasons. The findings were analyzed in terms of student enrolment, improved perception and image, and growth in research and development, and the universities’ ranking for the sampled Universities. The population was Six thousand eight hundred and fifty (6,850) staff drawn from four targeted ISO 9001 QMS certified Universities in Nairobi, Kenya. They include a total of 2,640 teaching staff and 3,410 non-teaching staff of selected ISO 9001 QMS certified public and private universities in Nairobi, Kenya. Simple random and stratified sampling method was used to get a sample size of 231 selected for the study. These are the University of Nairobi and Kenyatta University (Public) and the Strathmore University and Catholic University of East Africa (Private). The staff was drawn from schools and faculties of these universities. The structured questionnaire was dropped and picked to and from respondents. The data collected was sorted according to sections in the questionnaire and scored using numeric scores. The researcher used SPSS to process the data and statistically analyzed and presented it by means of pie charts, bar graphs and tables. Inferential statistics, correlation and regression were used to compare variables, infer from the results for credible conclusions from data. The results from the study revealed that there is an effect of ISO 9001 quality management systems certification to the competitive advantage of Kenya’s Universities. These findings are supported by high correlation between the predictor’s variables (Customer Focus, Leadership, Involvement of People, Process Approach, Systems Approach, Factual Approach, Continuous Improvement, and Closer Supplier Relationship) and response variable (Competitive Advantage). The study findings are presented according to the study objectives and are expected to benefit ISO 9001 QMS certified Institutions in Kenya including: Universities, Statutory bodies, Service and Manufacturing sectors. Finally, universities should embrace quality management systems like ISO 9001 QMS in an endeavor to give quality and relevant higher education. However, the implementation of the standard should be in reference to other quality standards such as 5s program and the Kaizen. There is a need to emphasize and encourage documentation of processes and procedures to clear ambiguities to help staff and clients to synchronize processes, duties and responsibilities that sustain continuous improvement in quality higher education. Furthermore, training of all staff on ISO 9001 QMS and its time span will help stem negative perceptions from staff and motivate a quality mind-set which was visibly lacking in the majority of respondents. Organizational leadership should be strengthened to avail necessary skills that inculcate quality and performance.
# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>CBs:</td>
<td>Certifying Bodies</td>
</tr>
<tr>
<td>CUE:</td>
<td>Commission of University Education</td>
</tr>
<tr>
<td>DR:</td>
<td>Deputy Registrar</td>
</tr>
<tr>
<td>F.O:</td>
<td>Finance Office</td>
</tr>
<tr>
<td>GJLOS:</td>
<td>Governance, Justice, Law and Order Sector Reform Programme</td>
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<tr>
<td>ISO:</td>
<td>International Standardization Organization</td>
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<tr>
<td>KEBS:</td>
<td>Kenya Bureau of Standards</td>
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<td>KMA:</td>
<td>Kenya Manufacturers Association</td>
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<tr>
<td>KPI:</td>
<td>Key Performance Indicator</td>
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<tr>
<td>LTD:</td>
<td>Limited</td>
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<tr>
<td>MTEF:</td>
<td>Medium Term Expenditure Framework</td>
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<td>NARC:</td>
<td>National Rainbow Coalition</td>
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<tr>
<td>ODEL:</td>
<td>Open Distance e-learning</td>
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<tr>
<td>P.S:</td>
<td>Purposeful Sampling</td>
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<td>QMS:</td>
<td>Quality Management Systems</td>
</tr>
<tr>
<td>R:</td>
<td>Registrar</td>
</tr>
<tr>
<td>R&amp;D:</td>
<td>Research and Development</td>
</tr>
<tr>
<td>SAR:</td>
<td>Senior Assistant Registrar</td>
</tr>
<tr>
<td>SAHS:</td>
<td>School of Applied Human Sciences</td>
</tr>
<tr>
<td>SB:</td>
<td>School of Business</td>
</tr>
<tr>
<td>SE:</td>
<td>School of Education</td>
</tr>
<tr>
<td>SHSS:</td>
<td>School of Humanities and Social Sciences</td>
</tr>
<tr>
<td>SPSS:</td>
<td>The Statistical Package for Social Science</td>
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<tr>
<td>THE-QS:</td>
<td>The Higher Education-Quality System</td>
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CHAPTER ONE
INTRODUCTION

1.1. Background of the Study
Business circumstances have been changing tremendously over the past decade. The approaches to doing business, tactics and knowledge have all shown a wide spread of dynamism and turbulence. Turbulent times have lead to organizations positioning themselves strategically to counter the competition from other aggressive organizations (Fitzroy and Hulbert, 2006). Creating a competitive advantage has therefore, become a necessity and not a norm. A competitive business environment describes a situation in which people or organizations try to be more successful than others for instance, selling quality products than a competitor, new products and technology innovations. Competitive advantage is the reason why one is in business and what separates one from the rest of herd (Smith and Flanagan, 2006).

According to Warren Buffet a competitive advantage means a unique product or service that a business either makes or provides (Schroeder Alice, 2008). It lies not in the people who compose the business. Rather it is inherent in the product or service itself. Furthermore, the employees can walk away from the business but they cannot take the business's "competitive advantage" with them. A competitive advantage is therefore a thing that differentiates a business from its competitors. It is what separates the business from others. And, it’s usually the reason for the business’s existence. It answers the question of why one buys from a firm/organization or how one is better than the current supplier of the organization (Cox III and Schleier, 2010). It flows from superior capabilities or position or from some combination of the two. It is vital for an organization to understand the source of its competitive advantage if it is to build on it and defend it (Saloner et al, 2001).

Every sector in Kenya has had its share of competition and education has not been spared. Kenya’s Universities are not left out in this competition. (Marginson, 2006) notes that in the evolving hierarchical and unequal global higher education systems, being competitive become key, and global positioning is integral to competing with other nations and private universities offering equally competitive courses in the job market. Many students expected to join public universities have been opting to proceed to these colleges and private universities due to the seemingly flexible
study schedule among other merits. This has resulted into large volumes of enrollment at the expense of the public universities. The universities are currently said to be in the ‘’reputation race’’, in which they compete for reputation and academic prestige (Frans Van Vught, 2008). As a wake up call, public universities have changed largely the approach on both the study schedules, pricing, and marketing in the industry. Ultimately, selected universities in this study have to adopt a competitive model aligned to the education sector with a focus on quality and quality management systems that effectively meet and exceed the ever changing students and stakeholders expectations.

Schiefer (2002) says that quality has become of outmost importance to society. Consumers have become more conscious of quality, and organizations are now judged more on their overall quality performance instead of their financial performance alone. The most drastic change in quality thinking is probably the change from production-oriented to consumer-oriented concepts. Moreover, integrative approaches, system thinking, the focus on advanced technologies and belief in human capacities have had a considerable impact on current quality management systems. Since creating value is about generating a gap between customer valuation and cost of providing the product or service, quality and cost are often useful ways to describe competitive Advantage. An organization creates value only when there is a difference (preferably large) between what customers are willing to pay for its products or services and what an organization must pay to produce (Saloner et al, 2001). So far, establishing competitive advantage within the higher education sector in Kenya is a continuous effort for universities. However, the question is how the ISO 9001 Quality Management Systems certification influences the universities’ competitive advantage.

1.1.1 Understanding Competitive Advantage
Kenichi Ohmae (1982) is probably one of the first persons to give a relevant account of the basis of competitive advantage in strategy while working as head of strategy at the McKinsay Co, Tokyo. He defined competitive advantage in one of his book ‘The Mind of the Strategist’(1982) as either delivering superior value advantage to target customers relative to competitors or delivering equivalent customer value to target customers relative to competitors but at a lower cost. Prior to this ‘competitive advantage’ had remained implicitly in economics.
(Kay John, 1993) says competitive advantage is sourced from the organization’s distinctive capabilities. Distinctive capabilities are derived from characteristics that others lack and which are also sustainable and appropriable. “A distinctive capability becomes a competitive advantage when it is applied in an industry or brought to a market.” It measures the value of competitive advantage as value added, with the costs of physical assets measured as the cost of capital applied to replacement costs.

Michael Porter (1985) developed more on Ohmae’s work and is perhaps the most revolutionary thought about Competitive Advantage (Grundy, 2003). Porter says “competitive advantage is at the heart of a firm’s performance in competitive markets” and adds that the purpose of his work on the subject is to show “how a firm can actually create and sustain a competitive advantage in an industry—how it can implement the broad generic strategies.” Thus, competitive advantage means having low costs, differentiation advantage, or a successful focus strategy. In addition, Porter argues that “competitive advantage grows fundamentally out of value a firm is able to create for its buyers that exceeds the firm’s cost of creating it” (Harry and Kunin, 2003). Porters’ competitive five forces model is a prominent technique used in creating competitive advantage. The five forces are: threat of substitute products and services, the bargaining power of suppliers, the bargaining power of buyers, threat of new entrants and rivalry among existing organizations (Grundy, 2003). Interestingly, not so many scholars have worked to build from it. Businesses have had to adopt this model more by default than by design due to the speed for the need to reposition to remain relevant and competitive. Therefore, an organization has to have distinctive capabilities on which it develops a basis to either reduce costs or differentiate itself from other competitors.

1.1.2. History of Quality Management Systems (QMS)
Quality Management Systems and practices have been investigated extensively (Kaynak, 2003) from both the philosophical point of view to the very specific practical methods. QMS can be observed from different models presented by the authorities of quality from the early 1950’s through 1980’s namely: Edward Deming, (1950’s), Joseph Juran (1950’s), and Philip Crosby (1980’s) among others who prescribed several models and approaches to the concept of quality and its relationship to improving organization’s competitive advantage.
First, Deming (1950’s) an American statistician believed that the management at all levels was responsible for over 94% of quality problems and formulated 14 points (appendix vi) plan which any serious business that adopts and acts on the points could stay in business (Deming, 1982). He advocated for a systematic approach to problem solving and promoted the widely known Plan, Do, Check, Act (PDCA) cycle. The PDCA cycle is also known as the Deming cycle. The cycle is about learning and ongoing improvement. It is meant to reduce the difference between the requirements of the customers and the performance of the process. Second, Juran (1950’s) developed the quality trilogy—quality control, quality planning, and quality improvement. He believed quality was related with the satisfaction of customers and dissatisfaction with products. He therefore, emphasized the ongoing quality improvement through a succession of small projects carried out in the organization (Juran, 1995). Juran also came up with his 10 steps of quality improvement (appendix vi). His attention was not just on the end customer but on other external and internal customers. Third, in the 1980’s Armand V Feigenbaum developed “total quality control” and defined it as an effective system for integrating quality development, quality maintenance and quality improvement efforts of the various groups within an organization, so as to enable production and service at the most economical levels that allow full customer satisfaction (Feigenbaum, 2004). He viewed this as a business method and proposed three steps to quality: quality leadership, modern quality technology and organizational commitment.

Thereafter, the Japanese and the Western theorists also made immense contributions to the field of quality. Dr. Kaoru Ishikawa’s viewed total quality as companywide control and he gave the human side of quality with his Ishikawa diagram and assembly and the use of the ‘Seven basic tools of quality’ (Ishikawa, 1990). Shigeo Shingo (1986) created the single minute exchange of die (SMED) system where set up times are reduced from hours to minutes, and Poka-Yoke (mistake proofing system. The Poka-Yoke examines defects, the production system and immediate feedback given (Shingeo, 1987). This helps rooting out of problems, identification and prevention. He noted that humans can forget mistakes and so need to be reminded. Dr. Genichi Taguchi’s (2004), focused on the manufacturing process and the aspects of quality. He believed that it is preferable to design a product that is robust or insensitive to variation in the manufacturing process, rather than attempt to control all the many variations during actual
manufacture (Taguchi et al., 2004). He was concerned with routine optimization of product and process to manufacture rather than quality through inspection. He noted that Quality and reliability are pushed back to the design stage where they really belong, and he broke down off-line quality into three stages: system design, parameter design, and tolerance design.

Philip B Crosby (1980’s) developed the concepts of ‘’ quality is free’’ and ‘’ zero defects”’ based on four absolutes of quality: quality is conformance to requirements, the system of quality is prevention, the performance standard is zero defects, and the measurement of quality is the price of non-conformance (Crosby, 1979). Tom Peters (2005) in his work discarded management for leadership and noted that leadership was central for quality improvement process and the new role was managing by walking about (MBWA). He thought that this helped the leader to keep in touch with customers, innovation and people. The main areas to pursuit of excellence happened when a leader walks around: listening, teaching, and facilitating knowledge.

Total Quality Management (TQM) embodied the basis of interest for the authorities in the early 1950’s. Deming, Juran and Ishikawa are considered to be the founders of TQM philosophy (Hackman and Wageman, 1995). It is a model of organizational change, and has been used in various forms for decades (Yong & Wilkinson, 2002). TQM has also faced criticized that it provides a rhetoric that is individually interpreted by different individuals and organizations as noted by Lemak & Mero (2002). However, it’s flattering success has led to researchers to establish its relationship with certain contextual factors such as leadership (Zairi, 2002), teamwork (Hong & Meng, 2002), training (Palo & Padhi 2003) and culture (Pun, 2001). On this account Magutu et al (2010) in their study at the university of Nairobi on quality management practices noted that different approaches have been adopted for the introduction of quality management systems and practices to universities such as self assessment, and external assessment, accreditation and certification systems, and different models of TQM. It is a credible strategic option that efficiently and effectively put an organization to sustainable competitive advantage (Goldberg and Cole, 2002).
1.1.3. The Concept of Quality
The concept of quality has taken up a more strategic dimension rather than a functional or
tactical one. Its extent keeps challenging managers and professionals (Evans and Lindsay, 2010).
Quality can be confusing due to the varied subjectivity based perspectives. These include:
transcendent quality, product-based quality, user-based quality, value-based quality,
manufacturing-based quality and customer-driven quality. Quality has been defined as “a
predictable degree of uniformity and dependability at low cost and suited to market” (Gitlow,
2000). It is that which adds value, that which makes our lives better (Kemp, 2005).

It is important that quality is approached in all sectors from the systems, rather than a process
perspective. Management systems are becoming more and more integrated for instance, quality
education, environment, safety and health must be viewed together since quality has
transitioned from control, to assurance, to management; the next era is expected to focus
heavily on the quality of design (Evans and Lindsay, 2010). The leadership of any organization
is tasked to direct the purpose of quality to be achieved by the employees as part of a strategic
objective of the organization (Cianfrani et al. 2009). Quality is an act of excellence and
performing quality is a function of competitive advantage achieved by turning a source
advantage resulting from superior skills and resources into a competitive advantage (Day and
Wensley, 1988). Key elements reviewed and are crucial in ascertaining quality in organizations
include; quality control, assurance, and conformance.

The ISO 9001 QMS establish standards that require credible quality control mechanisms and
conditions. It involves control of processes and systems to realize quality and results. Control of
process as part of quality control implies low variability, consistency of process,
performance, and conformity of products and services to the customer and internal
requirements (Cianfrani and West, 2009). Poorly done controls can stifle positive changes and
continuous improvement while properly done controls well integrated in the organizations’ QMS
facilitate learning, innovation, and improvement. These are key component in any institute of
higher learning.
Tricker (2010) affirms that quality control is exercised at all levels of the organization and all personnel are responsible for the particular activities they are doing and they are all quality controllers. This is an aspect of people involvement which is a key principle in any QMS. The customers need an assurance that the product or service they intend to derive utility has attained the highest quality standards. Quality assurance is therefore, an integral part in ensuring that the customer is sustainably retained through inspired confidence in the products and services offered by a particular organization. It is part of the QMS focused on providing confidence that quality requirements are fulfilled. They are planned and systematic actions necessary to provide adequate confidence that a service or product will satisfy given requirements for quality (Tricker, 2010). The two focal points for quality assurance in business are: the design of the products and services and the control of quality as earlier mentioned. They are both aided by some form of measurement and inspection activities which should be structured consistent to the requirements of the QMS (Evans and Lindsay, 2010).

Products and service offered to customers need to have some degree of predictability in terms of uniformity and dependability. Not so many institutions of higher learning like can ascertain the degree to which their ‘products’ and services are predictable to consumers. Quality conformance is therefore important in retention and extension of competitive edge. Gitlow (2000) says it is the extent to which an organization and suppliers can produce products and services with predictable degree of conformity and dependability at a cost that is in-keeping with quality characteristics determined in quality design. The organization should continuously strive to make sure that the specification of the quality design is eventually surpassed. This is what ensures that there is a sustained competitive advantage over the rest of the industry players.

1.2. Statement of the Problem
Núria Balagué Mola (2007) in her study on the use of ISO 9001 quality standard in higher education institution libraries; noted that management’s desire to lead libraries to be certified was key to better implementation of quality systems in the libraries and that ISO 9001 QMS allows adequate adaptation to the structure, size and complexity of each library system size notwithstanding. She also found out that the prestige of acquiring the standard, although highly valued, is not a determinant and is secondary when it comes to deciding on certification. The Journal of Achievement in Materials and Manufacturing Engineering (2007) studied problems of
quality management in university education and found out that the introduction of quality management system based on ISO 9001:2000 standards is viewed valid with reference to the other means of assurance of quality in education. They also noted that the standard had various advantages compared to other standards among them quality improvement, organization of work, increased awareness of quality by employees, customer satisfaction, and improved reputation.

Aluvi A. Patrick and G. Kimutai (2011) presented on the role of ISO 9001:2000 certification in Kenya’s sugar industry on Mumias Sugar Company and found out that production in the company increased after certification and that employees enjoyed the benefits of the company being ISO certified. Other studies made by Cua et al. (2001) and Kaynak (2003), found that there is an underlined importance and causal relations between quality management practices and competitive advantage. Cua et al. (2001) and Kaynak (2003) further suggested a positive association between QM practices and organizational performance. The Brazilian Journal of production and operations management (2009) studied on management practices in Leather-Footwear Chain in Brazil and found out that ISO 9001QMS certified organizations performed better in management practices and obtained superior results than the non-certified ones and that the standard motivated the firms to succeed. Although a number of studies had been done on the concept and context of quality management in the higher education sector, not much have been done within the context of public universities in Kenya (Magutu et al., 2010). This study intended to establish the extent to which ISO 9001 QMS certification of Universities has influenced their attainment of competitive advantage in view of; students’ enrolment; customer perception and image; research and development, and their ranking.

1.3. General Objective
The general objective of this study was to establish the influence of ISO 9001 quality management systems certification on the competitive advantage of Kenya’s Universities.

1.4. Specific Objectives
I. To establish the effect of ISO 9001 QMS certification on students’ enrolment in ISO 9001 QMS certified universities.
II. To establish the effect of ISO 9001 QMS certification on customer perception and image of
the ISO 9001 QMS certified universities.

III. To determine whether acquiring ISO 9001 QMS certification has inspired growth in research and development of the ISO 9001 QMS certified Universities.

IV. To establish the influence of ISO 9001 QMS certification on the Universities’ Ranking.

1.5. Research Questions
I. How had the acquisition of ISO 9001 QMS certification influenced the Student’s enrolment at the Universities?
II. What was the effect of ISO 9001 QMS certification on the customer perception and image of the Universities?
III. How did ISO 9001 QMS certification affect research and development in ISO 9001 QMS certified Universities?
IV. What was the effect of ISO 9001 QMS certification on the ISO 9001 certified Universities?

1.6. Significance of the Study
This study is significant to the following key areas; firstly, is the higher education sector in Kenya. The quality of education in Kenya has sometimes come into focus due to a miss-match between the relevance of degrees to the labour market and the rate at which production is undertaken. The human resource gap in Kenya is said not to be in speed with the national strategic vision 2030 and therefore likely to affect its realization. Researchers agree that adoption of proper quality management systems like the ISO 9001 model by organizations can help close the divide coupled with quality results. Universities can use this model to provide quality education that will match the ever-changing needs of the Kenyan society. The study is intended to amplify the ISO 9001 QMS certification in Kenya’s Universities as a proper strategic approach to generation of quality graduates to drive Vision 2030.

Secondly, the manufacturing industry is experiencing a lot of new up-coming, cheaper, customer-oriented and yet valuable products. This calls for a steady and an alert management. KMA is struggling on how to counter cheaper and yet valuable products from Asia and other parts of the world and a hosts of other counterfeiting challenges. This study will help manufacturer’s embolden the resolve to put-up ‘tamper-proof” quality management systems that attract, listen and retains customers as a measure of creating competitive advantage.
It will also add value to the process of conformity which will help most manufacturing firms acquiring ISO 9001 QMS certification as a standard of best practice.

Thirdly, the service industry in Kenya has many organizations dealing with customers directly. The industry is facing the challenge to listen. From the tourism and hotels industry that contributes a substantial part of our national budget, the education sector that produces millions of human manpower to the public service sector that is expected to champion responsiveness to Kenyan’s interests and needs. Establishing competitive advantage within the systems and processes involved in exceeding customers’ expectations cannot be ignored. Therefore, any quality management system such as the ISO 9001 standards as a strategy to strengthen the sector’s competitive advantage in the region is attractive.

Fourthly, the Kenya Government statutory bodies have in the past decade received in equal measure both positive and negative criticisms on the systems employed in the service of Kenyans. Public servants have been blamed for sluggishness, carelessness, corruption and mediocrity. This resulted seemingly from incomprehensible, hidden and unclear systems of service delivery. In 2003, there was a new wave of demands engineered by the Narc government and the general public to receive quality service from public servants. Systems had to be put in place to make sure that the public is satisfied with government services. There was a directive by the new government that all public servants sign performance contracts and subscribe to giving quality service to the public.

In 2008 after the creation of the Grand Coalition Government, the Prime Minister’s office was mandated to spearhead the implementation of the performance contracting process in all the government departments (Office of the Prime Minister Strategic Plan, 2009-2012). Systems had to be put in place by all government departments including the statutory bodies to offer quality service. In two years, Kenyans could feel the change in most government department since service charters, systems and processes of service could be easily accessed by all Kenyans in most departments. In short, there were clear and well documented quality management systems which culminated in most serious government institution and departments being ISO 9001 certified. This study tries to suggest better measures of enhancing, strengthening, and sustaining
the efforts which were emboldened from 2003 by the government. Better quality management systems based on ISO 9001 standards will guarantee trust, seal-off corruption loopholes, and create a business friendly environment which could overtime foster growth in the country’s overall GDP.

Fifthly, the employees, students, and the general public are expected to be core beneficiaries of this study. Once the recommendations of the study are formulated and documented into implementable practical manuals, the universities’ staff, students, and the general public will be aware not only about service delivery systems in universities but also with processes through which quality services, products, and education take to have value. They will be able to ask the right quality questions about products and services across all sectors creating a responsible production sector accountable to the consumer. The employees will appreciate the ISO 9001 quality management systems that bequeaths to them relevant quality service delivery processes and education. The consumers will also be able to identify areas that need improvement and increase the speed of quality-innovativeness and appreciate process documentation in both service and product sectors.

Finally, the researcher did not assume the first contributor to this area of knowledge or the last. Interest in ISO 9001 quality management systems and their functionality to provide value to customers is evolving. Innovations and inventions yearly foster the need for quality management systems. Therefore, future researchers in this field of quality management systems and related areas will access insights invaluable on how to use and improve ISO 9001 QMS processes to capture competitive advantage not only at Kenya’s Universities but also around the world.

1.7. Limitations of the Study
This study had several limitations namely; Time, Resources and Non-Responsiveness. First, the researcher was a student and at the same time fully engaged with work-related activities that involve travelling. This study was expected to take a period of three months, however, time constraints to meet both the research need and work-related operations caused delays is both collection and compilation of data. The availability of employees at one single time was a challenge since both the teaching and non-teaching staffs came to work at irregular intervals. To
overcome this challenge, the researcher assigned two days per week to concentrate on the collection, analyzing, editing and recording of data. The researcher met the employees at different times of the day e.g. evening for most evening lectures and morning hours for day-long employees.

Second, this study needed both tangible and intangible resources. The tangible resources included finances and stationary. The intangible resources encompassed employees of the selected Universities. Accessing all required resources had challenges especially fare to travel to collect data and meeting employees most of whom are busy people. The researcher identified lead-students from selected schools to assist in the delivery of questionnaires and collection. The money used in the study was substantial and depending on monthly income could not fulfill the budget. The researcher drew some money from his savings and also requested family and friends for support.

Finally, non-responsiveness to research questionnaires from some sampled universities’ affected the data collected. Though most Universities seemed to adopt an open policy to access to information, not all information could be easily accessed and could lead to inadequate capture of information and low response in some universities. To increase responsiveness the researcher acquired a letter suctioning the study from Kenyatta University Vice- Chancellor’s office. The seemingly express intention to add value to the universities’ ISO 9001 quality Management systems processes helped allay any mistrust by respondents. Furthermore, the researcher made personal calls and meetings with both teaching and non-teaching staff to get first-hand responses.

1.8. Scope of the Study
The study was carried out within Nairobi in the selected ISO 9001 QMS certified Universities. It targeted four universities with 6,850 staff. They included a total of 2,640 teaching staff and 3,410 non-teaching staff of four ISO 9001 QMS certified public and private universities. These were the University of Nairobi and Kenyatta University (Public) and the Strathmore University and Catholic University of East Africa (Private). The staff was drawn from selected schools of 3 universities and a faculty of 1 university.
CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction
The growth of the education sector and the need for more Universities in Kenya has generated competition in the education sector. It has led to the need to determine quality in the new and the expanding older universities so that the knowledge accessed from the universities is not only for the sake of it but contribute to the growth and development of Kenya in many ways (IPAR, 2010). There is the need to have quality education through quality management practices that stands out all through. Quality management practices are recognized in organizations not only internally through products realized but externally through awards of quality which are also referred to as models that motivate quality. Pabedinskaité and Vitkauskas, (2011) in one of their writings on implementation of Quality Management Practices in Lithuanian Enterprises have identified three main models or approaches to quality management in scientific literature namely: Total Quality Management (TQM), Quality Management System (QMS) and European Foundation for Quality Management (EFQM). There are several other models created to ensure quality management is celebrated as it is implemented in organizations Bauer (2006), this study summarizes a few models by quality scholars.

2.2. The Theoretical framework
Quality Management Systems models/awards form the core to many quality professionals. They establish quality criteria in most industries and form the principles on which quality is gauged. They also offer step-by-step practical techniques on how to ‘do’ quality (Gitlow, 2000). Most salient in the models is the standard of their similarities such as continuous improvement, since the very principles that form each model seem different in wordings but some are the same in many ways. For example, most models identify and stress leadership involvement in quality processes, customer focus; identifying, gathering and analysis of information to make informed decisions, development of people in the organization, and process management as key principles. But, as we learn, they are the key characteristics that define quality as it is practiced today in many organizations (Bauer, 2006).
2.2.1. Models of Quality Management Systems
Dr. Deming prize (1951) was the first model established to commemorate the late Dr. William Edwards Deming. It was developed in Japan and is one of the highest awards because it helped promote TQM (Total Quality Management) in the world. He contributed greatly to Japan’s proliferation of statistical quality control after the World War II. His teachings helped Japan build its foundation by which the level of Japan’s product quality has been recognized as the highest in the world (JUSE, 2012). TQM is explained in seven points which form the basis of TQM and if followed an organization may receive the Dr. Deming Prize. These are; 1. “Systematic activities” 2. “Carrying out by the entire organization effectively and efficiently” 3. “Organization’s objectives” 4. Provide" refers to the series of activities from producing “products and services” to delivering them to the customers include research and study, planning, development, design, production preparation, purchasing, manufacturing, installation, inspection, order-taking, distribution, sales and marketing, maintenance, after-sales services, and after-usage disposal and recycling. 5 "Products and services" refers to all the benefits that are delivered to the customers, 6. "Quality” refers to the usability (in functional and psychological aspect), reliability, and, 7. "Customers” not only refers to the buyers but also stakeholders include the users, consumers, and beneficiaries (Deming, 2000).

Second, the Six Sigma program a business management strategy developed in 1986 by Motorola formally headed by Bob Galvin. Bill Smith is considered the father and it became popular when used centrally by Jack Welch as a business strategy at General Electric in 1995. It seeks to improve quality of process output by identifying and removing the causes of defects and minimizing variability in the manufacturing sector. It uses a set of quality management methods and statistical methods and creates a special infrastructure of people (George and Rowland, 2004). Six sigma projects are based on two methodologies influenced by Demings’ Plan-Do-Check-Art Cycle and compose five phases fused in the acronyms DMAIC (Define-Measure-Analyze-Improves-Control, then Recognize) - improves existing business process then result in RDMAIC methodology and DMADV (Define-Measure-Analyze-Design-Verify)-aims at projects creating new products or process design (Keller and Pyzdek, 2010).
Third is the Baldrige National Quality Program. The model was established and signed in law in the US based on the public law 100-107 on August 20th, 1987 and officially put in practice in 1988 created as the Malcolm Baldrige National Quality Award. It was originally designed to promote TQM as the best approach for improving and restoring high level competitiveness to the US corporations (Leonard and McGuire, 2007). Organizations are expected to keep improving on quality and maximizing productivity growth. Therefore, setting standards of excellence that can enable them attain this objective will affirm the position of competitiveness in the market. The initial core purpose for the model has been evolving over the years since its inception. Most US Corporations have had to gravitate toward this model to stay competitive. The design has created a public-private partnership standard of quality excellence that has since covered education, healthcare organizations and service companies as well as not-for-profit organizations. This remains the powerful set of guideline for the determination and execution of organizations’ priorities in the US (Leonard and McGuire, 2007).

The primary objectives of this model include: assisting organizations to improve their performance practices, results and capabilities; facilitate communication and Benchmarking where organizations share best practices information among themselves—it is the identification of those organizations at the top of their game and motivating them to share the knowledge and wisdom that helped them reach the plateau as a crucial part (Leonard and McGuire, 2007). How far universities are able to benchmark their best practices could be another platform of research: and finally, providing a working tool for understanding and managing performance, guiding in planning and creating opportunities for the organizational learning. The important feature to the Baldrige applicants is the strategic planning component which must address both the short-term and long-term goals of the organization (Latham and Vinyard, 2011).

The applicants to the Baldrige criteria may be drawn from manufacturing, service, and small businesses as well as educational, healthcare and nonprofit organizations. They present a fifty page application explaining how they run their businesses and present the business results achieved. The examination and award to organizations covers seven core principles corresponding to the categories of the criteria for the award. These include: 1) Leadership 2) Strategic planning 3) Customer and market focus 4) Measurement, analysis and knowledge
management 5) Workforce focus 6) Process management and, 7) Results (Brown, 2008). The winners of this award have found it not possible to trade off financial results for satisfied employees or customers. They have all agreed that achieving exemplary results, delighting customers and providing employees with good working environment are in practice the reason why quality excellence and performance can create an organization’s competitive position (Brown, 2008). Particularly, these criteria or principles, well executed provide fundamental aspects for quality excellence in both service and product delivery.

Fourth, the Kaizen quality program was created for the purpose of continuous improvement and believed that when little is improved each day, eventually big things occur. Maurer (2004) notes that Deming was the first advocate of continuous improvement and that it seemed inadequate at the start but somehow the little steps added up to a brilliant acceleration of America’s manufacturing capacity. It was introduced in Japan after the war when General Douglas Mac Arthur’s occupation forces began to rebuild the devastated country. It was modeled in the Toyota Industry which rewarded people who could find and fix problems in a Toyota plant (Chamber, 2008). Kaizen taught workers the value of continuous incremental improvement every day.

Fifth, the European Quality Award now referred to European Foundation for Quality Management (EFQM) was first made in 1992 to Robert Xerox (EFQM, 2011). According to the British quality Foundation (2000), the model is based on the belief that excellent organizations achieve and sustain superior levels of performance that meet or exceed the expectations of all stakeholders.

2.2.2. The Background of ISO 9001 QMS Model
ISO means International Standardization Organization established first as a UN agency in 1947 (Tricker, 2010). It is a non-governmental organization and a network of the national standards institutes of over 160 countries (Hoyles, 2009). Its aim is to facilitate the international coordination and unification of Industrial Standards. It though has no power to enforce the implementation of the standards it develops (Ward, 2008). Before the development of ISO 9001 QMS model, ISO 9000 was first published in 1987 in the UK and immediately ratified in Europe and encompasses fundamentals and vocabulary to be used in the standards. It defines Quality Systems Standards, based on the premises that certain generic characteristics of management
practices can be standardized, and that a well-designed, well-implemented, and carefully managed quality system provides confidence that the results and outputs will meet and even exceed customer expectations and requirements (Evans and Lindsay, 2009).

The ISO 9000:2000 has comprehensive and fundamental rules of belief for leading and operating organizations. It is aimed at continually improving performance over the long-term by focusing on customers while addressing the needs of all other stakeholders (Bauer, 2006). To a larger extent, many standards agreed upon at the international level apply to certain types of products and services and how they are delivered to customers. They aim at ensuring interchangeability, compatibility, interoperability, safety, efficiency and reduction of variations (Hoyle, 2009). Mutual recognition of standards between trading organizations and countries increases confidence and decreases the effort spend in verifying that suppliers have shipped acceptable products to customers.

ISO 9000 is just one small group of standards among a collection of over 17000 internationally agreed upon standards and other types of normative documents in ISO’s portfolio (Hoyles, 2009; Cianfrani et al., 2009). Holyle (2009) has noted that ISO 9001 is derived from the ISO 9000 family of standards and one among several standards. It has become a market requirement since it focuses on giving confidence to customers that products and services meet the needs and expectations of customers and other stakeholders and improves capabilities of the organization to do this. ISO 9001 structure is based on ISO 9000:2000 and provides the specific requirements for quality management systems, to which users must conform in order to obtain third-party certification. For instance, the supplier’s management with the executive responsibility shall define and document its policy for quality, including objectives for quality and commitment to quality (Micklewright, 2010). The quality policy shall be relevant to the supplier’s organizational goals and expectations and needs of its customers. The supplier shall ensure that this policy is understood, maintained and implemented at all levels of the organization. The major sections in which the requirements are organized are viewed differently by different writers. It is these sections if well examined and attended to by organizations that culminate into certification.
ISO 9001:2000 is an overall standard that put together a collection of three other standards: ISO 9001:1994 (QA in design, development, production, installation, and servicing), ISO 9002:1994 (QA in production, installation and servicing), and ISO 9003:1994 (QA in final inspection and test) (Tricker, 2010). To reiterate, the version ISO 9001:2000 stems from the ISO 9000 model and seeks to address deficiencies and challenges noted in other versions. It is much more business focused aimed at improving organizations’ management systems through application of eight principles. It is a standard for business management systems (Tricker and Sherring-Lucas, 2005). The standard, though based on eight principles, have them operational in at least 5 key varied sections that show aspects of quality (Hoyles, 2009; Tricker, 2010; Evans and Lindsay, 2009, Cianfrani, West, and Tsiakals, 2009). The 4 sections and the 8 principles are discussed below and include:

2.2.2.1. Management Responsibility
For the quality system to effectively function there should be a commitment from the management that supports its development. The commitment should be customer oriented, responsible for the QMS and able to plan the quality policy implementation, well communicated and reviewed to the whole organization. This shows that the management is actually in control of the whole process and thus a guarantee for its success.

2.2.2.2. Resource Management
This section sets out requirements that include planning for the identification, allocation and provision of resources. It further emphasizes the need for better management of the same resources, the infrastructure and the work environment that fosters effective implementation of the QMS.

2.2.2.3. Product Realization
This is a critical section for the implementation of an effective QMS. It requires that products planning, design and development, and delivery are suitable to the organization and the customers. It is a customer-related process which may also include purchasing, the real product provision, and control of the monitoring and measurement tools.
2.2.2.4. Measurement, Analysis and Improvement.
This section gives the requirements that demonstrate both the conformity of the product and the QMS. It monitors and analyses the effectiveness of the system and its capability to continually improve the QMS. Generally, the 5 key process-based sections reviewed, collect and reflect the eight principles of the quality management systems which form the theoretical framework of the study.

2.3. Quality Management Principles
A quality management principle is a fundamental and comprehensive rule for leading and operating an organization to continuous improvement customer satisfaction and creation of stakeholders’ value (ISO, 2012). They include: customer orientation; leadership; involvement of people; process management; systems management; continual improvement; fact-based decision; and close supplier relationship. The importance of these quality management principles cannot be over-emphasized (Tricker, 2002). They have been well reviewed in literature but apparently customer service and assurance is most prominent since the ISO 9001 standard’s ultimate goal is customer satisfaction (Evans and Lindsay, 2010).

2.3.1. Customer Focus
A quality assured customer is a happy customer and a working QMS should be aimed at exceeding customers’ requirements (Hoyles, 2009). This is a customer driven view for quality which creates a sustained organization’s competitive advantage through customer loyalty (Tricker, 2005). Organizations should understand both the current and future needs of customers since they depend on them. It helps in realizing the customers’ needs and requirement and strives to exceed the customers’ expectations (Cianfrani and West, 2002).

2.3.2. Leadership
The organizations’ leadership establishes unity of purpose and direction. They are expected to create, maintain and sustain an internal environment in which people can become fully involved in achieving the objectives of the organization (Cianfrani and West, 2002). The selected Universities have had robust direction and unity of purpose. Focusing on leadership is therefore, important in helping the achievement of planned goals.
2.3.3. Involvement of people
The essence of any organization is People (Cianfrani and West, 2002). Their involvement in the implementation of action plans is crucial in developing their abilities to be used in the organization. Their proactive participation promotes the quality ethos (Tricker and Sherring-Lucas, 2005). People involvement allows the utilizations of a spread of skills from the people and by the people for the good of the organization.

2.3.4. Process Approach/Management
This principle examines the logical sequencing of activities to effectively achieve a desired goal (Tracker and Sherring-Lucas, 2005). All activities and resources are managed as a process aimed at giving desired results (Cianfrani and West, 2002). A business process is abroad collection of activities within the organization. It helps in the understanding of how things are really done and improvement of performance (Carson Sr. et al., 2004).

2.3.5. Systems Approach/Management
This principle sees organizations as composed of many inter-related processes which form a system. Managing these processes that form a system is an integral principle of quality (Tracker and Sherring-Lucas, 2005). It involves the identifying, understanding and managing the inter-related processes as a system that contribute to the effectiveness and efficiency in achieving organization objectives (Cianfrani and West, 2002). Each quality system is influenced by different objectives, instructional methods if it were in education sector and by different administrative practices specific to the university (Kattman and Johnson, 2003): this is important because poor interface between different processes may have a debilitating impact on the overall process and consequently affect the organization’s strength in competitive positioning (Tricker, 2006).

2.3.6. Continual improvement
Quality management is sustained with continuous improvement — a review of the workability of all processes and systems to suite the ever-changing business environment. It involves constant refining of processes to enable the organization to become more efficient (Tricker and Sherring-Lucas, 2005). It is being committed to the ideal of continuously improving in all parts of the organization (Liker and Franz, 2011). Customer satisfaction is a constantly moving and dynamic entity depending on changes in technology and the market place turbulence, so an effective QMS
must be in a condition of continual improvement. For this to be achieved, attention needs to be given to both the voice of the customer - through complaint analysis, opinion surveys and regular contacts – and the voice of the processes – through measurement, monitoring and analysis of both process and product data. It results in factual decision making and continuous improvement which should therefore, be permanent objectives (Baranzeli, 2009).

2.3.7 Factual Approach
This principle examines the careful analysis of information and consequent making of decisions based on the facts so derived from data. It therefore calls for maintaining useful, factual, complete and accurate data for use in decision making (Tricker and Sherring-Lucas, 2006). Data collected is monitored, measured and analyzed for use to come up with logical decisions based on facts (Carson et al., 2004).

2.3.8 Close supplier relationship
The principle examines the mutual benefits derived from the creation of either strategic alliances or partnerships of value (Tricker and Sherring-Lucas, 2005). The support that the organization mutually receives from suppliers establishes independent, synergetic and quality driven relationships (Imtiaz, 2001). This, in the long-run positions the organization to deal with the challenges that comes with competition. It increases the organization’s ability to create value since it ensures early involvement and participation in defining the requirements for joint development and improvement of products, processes and systems. These helps strengthen mutual trust, respect and commitment to customer satisfaction and continual improvement (Kattman and Johnson, 2003).

2.4 Requirements of ISO 9001
Researchers and scholars on quality management systems have varied presentations on what should actually be covered in the ISO 9001 QMS model. However, key to all the different presentations is the general agreement on the requirements of the ISO 9001. This is the most important stuff for the ISO 9001 systems model as set out from clause 4.1 of the ISO 9001 standard (Russell and Arter, 2008). The general requirements summarize the model into commitments to the quality standards, the final goal being customer satisfaction (Cianfrani et al. 2009). Documentation becomes the hallmark of this system and includes procedures, policies, work instructions, specifications and other tools that formally communicate organizations’ useful
information (Cochran, 2008). However, the leaner the documentation the better since it is dependent on the training and skills of employees, the amount of supervision, and the nature of the organizations’ tasks. It is best to have documents as streamlined as possible so that only much documents as absolutely needed are documented. The explicitly required documents by ISO 9001 includes; quality policy, quality objectives, and quality manual. These are fundamental documents in an organization because they set the direction of the entire management system. They say what organizations do and help them to do what they say (Russell and Arter, 2008).

2.4.1. Quality Policy
This identifies pertinent quality items about the products and services of the organization that the management system is set for or focused on. It may also serve as a mission statement for the organization. The management includes the process of establishing and reviewing quality objectives of the organization (Tricker, 2005). Cianfrani and West (2011) describe a quality policy to include the overall intentions and directions of an organization related to quality as formally expressed by the top management. The top management of the organization must be fully involved in the formulation of the quality policy and spearhead its realization.

2.4.2. Quality Objectives
As a key planning item, the objectives for quality must be well defined, described and determined for documentation (Cochran, 2008). They must align themselves effectively with the organizations quality policy (Tricker, 2005).

2.4.3. Quality Manual
This is a high level description of the organizations’ management system that typically offers a road map to where all pieces of the management system are located. It takes commitment to meeting the standards of the requirement. While it describes the management system, it does not give specifics but merely points to other documents where these specifics reside (Cochran, 2009). The manual captures important tasks so that they are done correctly the first time round. Any manual that repeats what is in the standard will not be attractive and useful to either employees or customers (Russell and Arter, 2008).

2.4.4. The Six Quality Procedures
Many studies on the documentation of ISO 9001 QMS standard have identified the six core procedures for documentation made around any organizational quality manual (Grimes, 2002).
Cochran (2009) has identified six procedures namely: document control; record control; internal audit; control of non-conforming products; corrective action and; preventive actions. These procedures require documentation as long as they are built around the quality manual (Grimes, 2002; Tricker, 2005).

### 2.4.4.1. Document Control

This is a process of making sure that people have maximum access to timely and accurate information to do their job. It is the most basic discipline that must be exercised in any management system (Cochran, 2008). Many people are expected to access vital documents of the organization and therefore, it is important that they are clearly aware on how to handle the organizations’ documents (Tricker, 2010).

### 2.4.4.2. Record Control

This is a procedure that deals with history of activities or transactions that have taken place in an organization (Cianfrani and West, 2009). A record is a document stating the results achieved or providing evidence of the activities performed (Myhrberg, 2009). Records are important in the review of prior activities for present and future strategic actions. They give assurance that an organization is actually doing what it promised. They are the most believable form of communication (Russell and Arter, 2008). Quality records are essential feature of a quality assurance system but need not to be so extensive and exhaustive (Bolton, 1999). Quality records must be sufficient to demonstrate that all essential processes have been carried out and that all necessary inspections and tests have been undertaken (Bolton, 1999).

### 2.4.4.3. Internal Audit

An Audit is a systematic, independent, and a documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria has been fulfilled (Philips, 2009). This is the “first-party auditing” for any organization (Collines Jr. and Steigar, 2011). The objectives of any internal audit system includes; verifying conformance to applicable standards; conformance to documented process; effectiveness of the processes in the system; and identifying opportunities to improve the system (Cochran, 2008; Philips, 2009). Different organizations have different internal audit systems and thus, any audit system must be structured to the success requirements of the organizations.
2.4.4.4. Control of Non-conforming products or services
The procedure aims at identifying products or services of the non-conforming nature and do not agree with the market demands or the needs of the customers. The products that do not conform to the specifications are identified by quality control inspection, customer complaints or the internal quality audits. Bolton (1999) notes that a system of possible segregation is necessary to prevent the product or service from being inadvertently used or to prevent the non-conforming service being continued. Whether some courses have been disposed-off, or reformatted and reorganized to conform to the needs of the market as part of continuous quality improvement could be another area of study.

2.4.4.5. Corrective Actions
It is important for any organization to think of corrective measures in case of non-conformance of its products or services. The procedure involved matters to help the organization stop the reoccurrence of non-conforming products of services (Hoyles, 2009). The corrective action results are actions planned and taken to stop something from recurring (ISO 9000:2005 Clause 3.6.5). Cianfrani and West (2009) refer to this procedure as an action to eliminate the cause of a defected nonconformity or other undesirable situations. Organizations that strive to eliminate the causes of defected nonconformity have a strong internal audit process that identifies these defects for correction purposes. This assists the continuous improvement process adding value to excellence and competitiveness in the market.

2.4.4.6. Preventive Actions
These are actions proposed and taken to stop something from occurring (Hoyles, 2009). It is proactive in nature and aims at stopping rework exercises which could cause extra costs and losses to the organization. It is equally important to correction, though it endeavors to eliminate potential nonconformity or other undesirable potential situations (Cianfrani and West, 2009).

2.5. The ISO 9001 QMS Certification in Higher Educational Institutions
Kenya is fast moving towards realizing regulation mechanisms for organizations’ ISO 9001QMS certification. The creation of an accrediting body KENAS by the government for certifying firms attests to this effort and the value with which ISO 9001 QMS certification has. KENAS is established under legal notice No. 55 of the State Corporations Act (Cap 446) dated 11th May 2009 to accredit ISO 9001 certifying firms. The world over, most firms/organizations, are talking
about attaining ISO 9001QMS certification (ISO Certified Firms Expo manual, 2011) viewed as a key indicator of quality service delivery and customer satisfaction. Notable in the education sector is that quality education is driven by a working quality management systems focused on adding more value to the students and stakeholders.

The cut-throat business competition in various sectors in the 21st Century has seen organizations endeavor to identify their competitive advantages. The basis with which to create this competitive advantage has also differed from one sector to the other. The education sector is driven more by the quality of education than mass production of graduates. As stated, quality has become of outmost value to all organizations Schiefer (2002), thus Universities are not spared. Therefore, any strategic plan that puts the universities at an advantageous position is attractive. Since certification the selected universities have been at the forefront on quality education and service deliver. Below is a brief reviews on the quality background of the selected universities.

### 2.5.1. University of Nairobi

This is a pioneer university in university education in Kenya. It is located in the centre of the city with 7 campuses around the country. It is the largest university in terms of infrastructure and students enrolment. The university was awarded ISO 9001: 2000 QMS certification in August 2008. Its quality policy statement is based on quality and quality improvement as the guiding principle in the decision making, leadership and in provision of the university’s educational and related issues to its customers (University of Nairobi Quality Policy Statement, 2008).

### 2.5.2. Kenyatta University

Kenyatta University has a rich history stemming from the University of Nairobi and has produced thousands of able scholars and professionals serving Kenya in several sectors. It also has various campuses around the country encompassing City Campus, Parklands, Mombasa, and Nyeri just to mention a few. It was the first Public University to scoop the first position in performance contracting in 2006/2007 performance cycle and also the first University to achieve the excellent category in the 2007/2008 performance cycle. Kenyatta University was awarded ISO 9001:2000 in May 2008, later referred to as ISO 9001:2008 certification. The University has been conducting both internal and external audits as part of the quality management system
maintenance program (Kenyatta University Strategic Vision Plan, 2005-2015). On March 26th 2012, KU was again ranked the 2nd best performing State Corporation in performance contracting during the 2010/2011 cycle. This indicates continuously enhanced and sustained service delivery coupled with strategic leadership and transformational processes. The key winning targets included: prevention of Human Immune Virus (HIV) infections; increase in student population; increase in research proposals; increase in the number of researchers; increase in the number of scientific publications; establishing university industrial linkages; implementation of community based projects; integrating e-learning in the institutional based programs; gender mainstreaming and disability mainstreaming (Kenyatta University newsletter Vol. 8 Issue 3, 2012). Kenyatta University’s Quality policy aims at providing quality education and training that is globally competitive and responsive to the market needs; consequently, strengthening the quality management offices by putting specific strategies to ensure continuous evaluation of standards in all areas of operation to meet the ever-changing needs of the students and stakeholders (The Kenyatta University Graduate School Prospectus, 2010/2012).

2.5.3. Strathmore University

This was the first private university to be certified with the ISO 9001: 2000 award. The University was begun in 1961. It was awarded a letter of interim authority to run as a university in 2002 and was awarded a charter in 2007 by the commission of higher education. The university was ISO 9001 certified in 2004 and re-certified twice in 2007 and 2009 after undergoing recertification assessment. Quality based on the QMS has helped the university to provide quality services that meet the expectations of its customers and applicable regulatory measures, fostered continuous improvement, prevented and corrected non-conformities. The university has been top on quality implementation strategies to be benchmarked.

2.5.4. Catholic University of East Africa

The university is based in Nairobi and started in 1984 as a theological school and today offers more other programs other than theology. It has three campuses in Nairobi, Kisumu and Eldoret. The university successfully implemented the ISO 9001: 2008 QMS in August, 2011 and was awarded quality certification. It is committed to offer quality scientific research that will
generate new knowledge for holistic teaching and beneficial community service to cater for the needs and expectations of its customers. The university also emphasizes continuous improvement according to the ISO 9001: 2008 standard (Catholic University of East Africa Quality Policy Statement, 2011).

2.6. Quality in the Education Sector
The need for quality education that contributes towards sustainable economic development is important. Kenya’s Vision 2030 captures quality education as a social strategy pillar to sustained economic growth and development therefore, it is so necessary in establishing a formidable future for the nation (Kenya’s Vision 2030, the popular version, 2007). Educational Institutions from basic to higher education have put practical measures that will contribute toward attainment of quality education. Quality assurance in most institutions of higher learning is ensured by the institutions themselves and therefore, an internal responsibility based on an internal evaluation of the institutions programs (Orsingher, 2010). However, the education sector’s approach to quality has had its share of challenges. Cheng and Tam (1997) suggest that ‘’education quality is rather vague and a controversial concept’’ Pounder (1999) on the other hand argues that quality is a ‘’notoriously ambiguous term’’ and as a result the difficulty in defining quality, the measurement of quality has also proved contentious. Lewis and Smith (1994) agree that the perception of “quality of education” by many academics is increasingly becoming a problem for many outside the system. Even so, the adoption of a working quality management system creates the scope with which quality in education could be measured.

Other than the shortcomings of present higher education systems characterized by deprived teaching practices, anachronistic programs, incoherent curricula, excessive price, and growing inefficient administrative bureaucracies (Engelkemeyer, 1993; Hansen (1993) noted that an efficient QMS like ISO 9001 model is seen by many as having enormous potential to respond to these challenges in defining and measuring quality in education. Cowles and Gilbreath (1993) emphasize that a working Quality Management System can be applied as a means for improving student/ staff morale, increasing productivity, and delivering higher quality services to both internal and external customers.
As a measure to entrench quality education, many higher educational institutions in Kenya have worked or are in the processes of attaining the ISO 9001 QMS as a clear resolve to quality education development. It is generally recognized that rather than mass production and considering the huge public and private investment in university education, there is an urgent need to evaluate how effectively this investment is being utilized by examining the quality of the educational infrastructure, the cadre of qualified tutors and other resources in place, and the quality of teaching and learning (Unesco, 2003). The educational quality agenda needs to move to the forefront of all educational policy makers, but rather in a structured manner which can be measured, analyzed and assessed by all stakeholders (Magutu et al, 2010).

While the approaches to the processes adopted in view of quality differ from industry to industry especially in the commercial environment, ISO 9001 QMS has transcended to educational institutions. The model’s practicability in educational institutions takes up a direct relationship between the conception of higher education being taken, the definition of quality being used and the performance indicators chosen to measure quality (Tam, 2001). ISO 9001 QMS provides room for educational institutions to define quality in accordance to their structures and formulate policies, objectives and manuals based on the structure of the prevailing education system and expectations of stakeholders. This is an engagement that is able to foster quality education standards and development in educational institutions. As a result University of Nairobi, Kenyatta University, Strathmore University and the Catholic University of East Africa among other institutions of higher learning have been certified with ISO 9001 QMS standards and several others are in the process of attaining certification. The ISO 9001 QMS certification may influence the Universities’ competitive advantage in many ways. The areas reviewed below represent just a few of its Influences:-

2.6.1. Students enrolment
The student’s admissions and consequent enrolment in universities is on the rise. It is even expected to rise following the introduction of free and subsidized basic education from where universities have a pool of students (Republic of Kenya, 2005b). An even greater demand for higher education has stemmed from the new, non-traditional learners-the mature students. These are those who are 30 years and above and either missed the earlier opportunity to get to universities or those who want to increase their work qualification (IPAR, 2010). The
(UNESCO, 2003) report on higher education development in African states show that many countries with higher education systems that are at critical development phases have experienced higher rates of expansion and increase in student enrolment than anticipated. The unprecedented students’ enrolment has caused some universities to register more self-sponsored students than government sponsored students registered through JAB. Despite this expansion and as a result of inadequate government funding, the institutions face demand-related challenges especially in terms of access and equity; quality and relevance; science and technology; and management and global marketability (Republic of Kenya, 2005b). Quality and relevance has even been a greater challenge that every university has had to grapple with. Expansion in students’ enrolment has called for higher quality in education and bolder quality management systems that are able to match the speed of expansion of universities. Adopting the ISO 9001 QMS model by most universities to ensure quality education delivery has seen certification of some universities to the ISO 9001 standard.

2.6.2. Perception and Image

Perception involves an idea, a belief, or image that is created as a result of how we see or understand something while an image is the impression that a person, an organization, or a product gives to the public. ISO 9001 QMS certification of organizations creates an image and perception to the clients and customers. Dick et al. (2002) have concluded that ISO 9001 certification makes a profound difference in the ways quality is perceived and measured. The perception and image whether positive or negative have certain influences they make to the organizations. However, not much literature is available on whether ISO 9001QMS improves or not the perception and image of any organization (Muslim and Nur Riza Suradi, 2012). Though, in their specific study on both academic and non-academic staff of private colleges (Rosly Othman & Melissa Ng Lee Yen Abdullah, 2007) observed that non-academic staffs were more satisfied with ISO 9001 QMS implementation than academic staffs. The Academics were negative about (a) ISO implementation, and (b) quality of operation management and also have no interest on the certification process and have the impression that certification will not improve the existing operation management. The respondents in the study argued that they are overloaded with too many responsibilities on top of teaching and learning activities which is of utmost importance. On the other hand, Non academic staffs felt that ISO certification enables them to be more efficient and responsive to the needs of their internal and external customers. They also felt
that ISO certification has improved the quality of their service towards customers, and reduced a number of complaints and failures in delivering their services (Muslim and Nur Riza Suradi, 2012).

2.6.3. Research and Development
Quality education and research are the backbone to Universities. The challenge to policy makers today is how to balance quality education and research and greater access (Mohamedbhai, 2008). However, due to very heavy teaching load, the staffs have hardly any time to devote to research. The big number of students enrolled in both regular and parallel degrees is increasing. Parallel degree programs are attracting a large turnover of staff neglecting research at the platform of teaching which offers an extra remuneration. The promotion of most of these lecturers has been slow since most universities use research output as an important criterion. Because of their limited research, many young staff, overburdened with teaching, have fewer chances of being promoted, thus affecting their morale (Mohamedbhai, 2008). ISO 9001 QMS certification generates new energy to research in higher education’s development.

2.6.4. University Ranking
Ranking of Universities is a key indicator for the fast growing global competition in higher education. Rauhvargers (2011) defines ranking as a relationship between a set of items such that, for any two items, the first is either ‘ranked higher than’, ‘ranked lower than’ or ‘ranked equal to’ the second. In mathematics, this is known as a weak order or total preorder of objects. It is not necessarily a total order of objects because two different objects can have the same ranking. The rankings themselves are totally ordered. For example, materials are totally preordered by hardness, while degrees of hardness are totally ordered. It has raised the bar in the higher education sector encouraging competition in education enterprise and innovativeness, management of the institution, and strengthening the three primary functions of an institution namely; teaching, research, and service. The three types of measures of effectiveness of an organization include: rankings, accountability and quality assurance. They share common goals; however, continuous improvement of quality- one of the principles of quality based on ISO 9001 QMS is emphasized (Shin, Toutkoushian, and Teichler, 2011).
The first global university ranking was developed by the Shanghai Jiao Tong University in 2003 (Hazelkorn, 2011), and since then a number of systems have been developed in an endeavor to effectively rank universities. For instance, UNESCO European Centre for higher education (UNESCO-CEPES) and the institute for higher education policy in Washington, D.C founded in 2004 the International Ranking Experts Group which developed a set of quality principles and good practices, referred to the Berlin principles of ranking of higher education institution. Another system is the THE-QS World University ranking which is referenced in over 1000 newspapers, journals and websites every year (The Journal of Educational Studies NO.1 2010). The World University Ranking Web is the most recent ranking system and most Kenyan Universities were ranked this 2012. Shin, Toutkoushian, and Teichler (2011), note that a university’s effectiveness can be measured theoretically by a combination of inputs, throughputs and/or outputs. Another factor to be addressed is how to properly measure the concept of “quality” in higher education. They agree that is difficult to find a proxy measure for this construct, thus a critical issue to researchers is how to use available quantitative indicators to best represent quality in higher education. This study intends to find out if ISO 9001 QMS certification of Kenya’s Universities forms a basis to influence their level of ranking.

2.7. Challenges associated with the implementation of ISO 9001 QMS
In his explanation about the challenges of ISO 9001 implementation Grimes (2007) noted that is the simple things; the ones we take for granted that trip us down most time. The implementation of the ISO 9001 encompasses very simple and often ignored steps which indeed are the basis of customer satisfaction and service delivery. For instance, if no one is sure of the proper communication lines of the organization, communication fails in the whole company. Secondly, incomprehensible flow-chart to workers creates conflicts and poor information flow. There is no substitute to flow-charting processes in an organization (Grimes, 2007). ISO itself does not force down a particular layout for organizations setting up their quality management systems, but emphasizes a working system for the organization appreciated by customers in product or service delivery. Most organizations have challenges on how to start up the process, the struggle to get the exact ISO layout as a prototype, the question of what happens when they fail to conform, the magnitude of documentation required, an apparent belief that ISO instructs how organizations should be run and the fear of failure to conform to the standard after an audit.
While most organizations can go around all these challenges including acquiring the certification, staying on course to do what they actually promise customers is most profound (Hoyles, 2009).

**2.8. The Benefit of the ISO 9001 Certification**

The terms registration and certification have been used interchangeably to mean the same thing in different countries. In Kenya, certification has been the most prominent word to refer to those organizations that have been officially audited by a third party and duly registered as having attained what is contained in the ISO 9001 standard and requirements. Hoyles (2009) refers to certification as a process by which a product, process, person or organization is deemed to meet specified requirements while registration is a process of recording details of organizations of assessed capabilities that have satisfied prescribed standards and in this case ISO 9001 standards.

Vavra (2002) emphasizes that being ISO 9001 certified is a respected cue which stresses the importance of measuring and striving to improve customer satisfaction. The benefits of the ISO 9001 certification are intertwined in the organization’s capability to demonstrate improved customer satisfaction. ISO 9001 stresses customer satisfaction as the first goal attained by the standard (Robitaille, 2003). It rains awareness to customers’ requirements within the organization, defines and controls processes for communicating with customers and mandates the analysis of data relative to customer satisfaction. Secondly, the standard is more closely aligned to actual business practices, mimicking sequences and interrelations that typify most organizations. Most aspects in product realization section such as determination of customer requirements, design and development; purchasing; production; monitoring and measuring; traceability; storage and shipment present a rudimentary synopsis of the process approach (Robitaille, 2003) which aligns the business to current practices.

Nanda’s (2003) presents the benefits of ISO 9001 registration and underscores the following; first, it provides customers a high degree of assurance regarding the organization QMS considering that the organization was independently audited by an accredited registrar. This strengthens customer confidence and relationship (Myhrberb, 2009); second, it fosters continuous improvement in the productivity of the organization on both with-in budget project
execution and on-time delivery performance. This enables the organization to improve on its bottom-line; third, most ISO 9001 certified organizations desire to have their suppliers certified too, therefore, certification enables the organization to bid for tenders that require ISO 9001 certified suppliers; fourth, key to the study is ISO 9001 QMS influence to Universities’ competitive advantage. It enables the organization to gain competitive advantage to being perceived a ‘’best in class’’ by its customers and this consequently, helps the organization to retain customers, increase market share, attract new customers and enhance top-line revenue growth; fifth, project execution in organizations require some degree of consistence by the use of the same known processes. ISO 9001 increases this degree of consistence in project execution across multiple projects using similar processes. This helps in improvement of the quality deployment process (Myhrberb, 2009).

Sixth, the ISO 9001 QMS helps reduce or even eliminate the dependence on a few individuals in the organization who may hold important information regarding vital processes because such processes are well documented and everybody new or old is able to follow them up; and seventh, the organization is able to get rid of the reliance on ‘’heroes’’ to make projects a success because all employees are aware of the needed quality procedures and practices. Overall, the contribution of ISO 9001 QMS on organizations cannot be ignored by any organization playing business in this century. The service, manufacturing, public and private organizations all alike have a challenge to document all their processes, practices and procedures that enables continuous improvement and always better service delivery focusing on exceeding customers’ expectations. This creates and sustains the organization’s competitive advantage.

2.9. Conceptual Framework
The schematic framework below (Figure 2.1) was proposed to guide this study. It interrogated the employees of selected Kenya’s universities and independent variables moderated by work policies, technology, training and organizational policies. The independent variable was studied in sample analysis hypothesizing that their reciprocal causal relationship affects the dependent variable. This study therefore, tests competitive factors in the ISO 9001 QMS certified universities’ in Nairobi, Kenya.
Figure 2.1: Conceptual Framework

Independent Variable

ISO 9001 Quality Management Systems Certification Principles

- Customer Focus,
- Leadership,
- Involvement of People,
- Process Approach,
- Systems Approach,
- Factual Approach,
- Continuous Improvement, and
- Close Supplier Relationship

Moderating Variable

Dependent Variable

Competitive Advantage

- Students’ enrollment,
- Customer perception and Image,
- Research and Development, and
- Universities Ranking

Work Policy,

Training,

Technology, and

Organizational Policy

Researcher: 2012.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction
The chapter describes an overview of the methods used in the study. Sections and areas covered include the Research design; The Study Population, Sampling and Sampling techniques, data collection and collection instruments, analysis, and presentation.

3.2. Research Design
The study involved the descriptive survey design in establishing the influence of ISO 9001QMS certification on the competitive advantage of Kenya’s ISO 9001 QMS certified universities in Nairobi, Kenya. The study design was selected because it explores the influence of the independent variable on the dependent variables besides collecting and describing the relevant data for the study. It also allows details to be secured from multiple sources of information and evidence to be verified through in-depth probing (Cooper and Emory, 1996).

3.3. The Target Population
Four ISO 9001 QMS certified Universities in Nairobi, Kenya with a population 6,850 employees from schools and faculties were targeted in this study. Four thousand eight hundred and seventy four (4,874) staff members of the University of Nairobi categorized into 1,411 teaching staff and 3,463 non-teaching staff (University of Nairobi Staff Handbook, 2006 updated, 2011), 2,294 staff of Kenyatta University categorized into 747 teaching and 1,547 non-teaching staff (The Kenyatta University Prospectus, 2009-2011), 438 staff of Strathmore University categorized into 233 academic staff and 205 administration and support (Strathmore University strategic plan and projects, 2010) and 49 Academic, 5 Research staff members, 12 Heads and Deputies from 6 faculties of the Catholic University of East Africa (http://www.cuea.edu/).

The optimal sample in any representative study includes that which fulfils the needs of efficiency, representativeness, reliability and flexibility and thus thirty percent (30%) is referred to as an optimum sample in view of the situations of this study as noted by (Kothari, 2003). University of Nairobi has 20 schools (University of Nairobi Catalogue, 2006-2010), 6 schools are selected;
Kenyatta University has thirteen (13) schools (Kenyatta University Catalogue, 2011/2013), 4 schools are selected; Strathmore University has 7 schools, 2 schools are selected; and finally from the 6 faculties of the Catholic University of East Africa 2 are selected for the study.

3.4. Sampling Procedure and Sampling Technique.
Simple random sampling and stratified sampling techniques were used to select schools and faculties for the study. The School of Business, School of Education, School of Public Health, School of Engineering, School of Law, and School of Economics are selected from the University of Nairobi; School of Applied Human Sciences, School of Business, School of Education, School of Humanities and Social sciences were selected from Kenyatta University; School of Management and Commerce and the School of Business were selected from the Strathmore University; and finally the faculties of Education and Commerce were selected from the Catholic University of East Africa. The stratified random sampling procedure was used to get the sample and sample size. Random sampling presents the characteristic of each unit of the sample and approximates the characteristics and responses of the total population allowing the calculation of sampling error. On the other hand, stratified sampling does foster homogeneity of each stratum, therefore, posts more valid, reliable and detailed information since it has a smaller sampling error compared to the random sample.
According to Mugenda and Mugenda (1999) and Leedy (1997) a larger population would warrant a 10% selection from each category and designation of the target population appropriate for a descriptive study. The tables below provide summaries of the population of both the teaching and non-teaching staff according to their designation and category/workstation from the sampled schools and faculties of the selected Universities respectively:

**Table 3.1: Teaching Staff University of Nairobi**

<table>
<thead>
<tr>
<th>Teaching Staff</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
<th>Sample A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
<td>6</td>
<td>92</td>
<td>98</td>
<td>10</td>
</tr>
<tr>
<td>Associate Professors</td>
<td>30</td>
<td>165</td>
<td>195</td>
<td>19</td>
</tr>
<tr>
<td>Research Professors</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Senior Lecturers</td>
<td>53</td>
<td>225</td>
<td>278</td>
<td>29</td>
</tr>
<tr>
<td>Lecturers</td>
<td>187</td>
<td>502</td>
<td>689</td>
<td>69</td>
</tr>
<tr>
<td>Assistant Lecturers</td>
<td>39</td>
<td>88</td>
<td>127</td>
<td>12</td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Senior Research Fellows</td>
<td>5</td>
<td>7</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>325</td>
<td>1086</td>
<td>1411</td>
<td>142</td>
</tr>
</tbody>
</table>

**Table 3.2: Non-Teaching Staff**

<table>
<thead>
<tr>
<th>Non-Teaching</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
<th>Samples @ 10%</th>
<th>Total Sample A + B</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS</td>
<td>97</td>
<td>233</td>
<td>330</td>
<td>3</td>
<td>142</td>
</tr>
<tr>
<td>Supervisory Staff</td>
<td>631</td>
<td>686</td>
<td>1317</td>
<td>1</td>
<td>142</td>
</tr>
<tr>
<td>Sample B</td>
<td>728</td>
<td>919</td>
<td>1647</td>
<td>1</td>
<td>165</td>
</tr>
<tr>
<td><strong>Total Sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>307</td>
</tr>
</tbody>
</table>

Two categories of senior non-teaching staff have been selected for this study. From the sample of 307 members of The University of Nairobi staff 30% was selected as the sample size for this study equivalent to 93 distributed across the six selected schools of the university.
Table 3.3: Teaching Staff Kenyatta University

<table>
<thead>
<tr>
<th>Designation</th>
<th>S.E</th>
<th>S.B</th>
<th>SAHS</th>
<th>SHSS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Professors</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>Associate Professors</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>24</td>
<td>35</td>
</tr>
<tr>
<td>Senior Lecturers</td>
<td>24</td>
<td>2</td>
<td>8</td>
<td>34</td>
<td>68</td>
</tr>
<tr>
<td>Lecturers</td>
<td>62</td>
<td>14</td>
<td>16</td>
<td>53</td>
<td>145</td>
</tr>
<tr>
<td>Assistant Lecturers</td>
<td>6</td>
<td>22</td>
<td>9</td>
<td>5</td>
<td>42</td>
</tr>
<tr>
<td>Tutorial Fellows</td>
<td>29</td>
<td>11</td>
<td>16</td>
<td>26</td>
<td>82</td>
</tr>
<tr>
<td>Total</td>
<td>138</td>
<td>50</td>
<td>53</td>
<td>151</td>
<td>392</td>
</tr>
</tbody>
</table>

Researcher: 2012.

Table 3.4: Non-Teaching Staff

<table>
<thead>
<tr>
<th>Category/Work Station</th>
<th>I/II</th>
<th>III/IV</th>
<th>A/B</th>
<th>C/D</th>
<th>E/F</th>
<th>11</th>
<th>AS</th>
<th>SAR</th>
<th>DR</th>
<th>R</th>
<th>F.O</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total No. of Staff</td>
<td>230</td>
<td>627</td>
<td>246</td>
<td>177</td>
<td>120</td>
<td>22</td>
<td>68</td>
<td>38</td>
<td>15</td>
<td>3</td>
<td>1</td>
<td>1547</td>
</tr>
</tbody>
</table>

Researcher: 2012.

From the selected sample population of 659 employees comprising 392 teaching and 267 non-teaching staff, a stratified random sampling method was used to get a total sample size of 79.

The tables below summarize the sample sizes for each category of the staff:

Table 3.5: Sample size for the teaching staff

<table>
<thead>
<tr>
<th>Designation</th>
<th>S.E</th>
<th>S.B</th>
<th>SAHS</th>
<th>SHSS</th>
<th>Population</th>
<th>Sampling</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Professor</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>20</td>
<td>Simple Random</td>
<td>10</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>24</td>
<td>35</td>
<td>Simple Random</td>
<td>4</td>
</tr>
<tr>
<td>Senior Lecturer</td>
<td>24</td>
<td>2</td>
<td>8</td>
<td>34</td>
<td>68</td>
<td>Simple Random</td>
<td>7</td>
</tr>
<tr>
<td>Lecturer</td>
<td>62</td>
<td>14</td>
<td>16</td>
<td>53</td>
<td>145</td>
<td>Simple Random</td>
<td>15</td>
</tr>
<tr>
<td>Assistant Lecturer</td>
<td>6</td>
<td>22</td>
<td>9</td>
<td>5</td>
<td>42</td>
<td>Simple Random</td>
<td>4</td>
</tr>
<tr>
<td>Tutorial Fellow</td>
<td>29</td>
<td>11</td>
<td>16</td>
<td>26</td>
<td>82</td>
<td>Simple Random</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>138</td>
<td>50</td>
<td>53</td>
<td>151</td>
<td>392</td>
<td></td>
<td>48</td>
</tr>
</tbody>
</table>

N.B- The excess in the sample resulted from non-random sampling. Researcher: 2012.
There are 12 non-teaching staff categories from grade I/II to F.O making a total population of 1547 (Table 4) The grades reflect the seniority of the staff (Kenyatta University Strategic Vision Plan, 2005-2015) from the non-teaching population, 267 were sampled representing 17% of the most senior non-teaching staff per category and grade. The table below shows the sample size selected from the sample category;

**Table 3.6: Sample size for non-teaching staff**

<table>
<thead>
<tr>
<th>Category/Work Station</th>
<th>E/F</th>
<th>II</th>
<th>AS</th>
<th>SAR</th>
<th>DR</th>
<th>R</th>
<th>F.O</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total No. of Staff</td>
<td>120</td>
<td>22</td>
<td>68</td>
<td>38</td>
<td>15</td>
<td>3</td>
<td>1</td>
<td>267</td>
</tr>
<tr>
<td>Sample Size</td>
<td>12</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>Sampling method</td>
<td>S.R</td>
<td>S.R</td>
<td>S.R</td>
<td>S.R</td>
<td>S.R</td>
<td>P.S</td>
<td>P.S</td>
<td></td>
</tr>
</tbody>
</table>

N.B- The excess in the sample resulted from non-random sampling. Researcher: 2012.

**Table 3.7: Strathmore University**

<table>
<thead>
<tr>
<th>Staff</th>
<th>Number</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Staff</td>
<td>233</td>
<td>23</td>
</tr>
<tr>
<td>Administration and Support staff</td>
<td>205</td>
<td>21</td>
</tr>
<tr>
<td>Totals</td>
<td>438</td>
<td>44</td>
</tr>
</tbody>
</table>

**Table 3.8: Catholic University of East Africa**

<table>
<thead>
<tr>
<th>Staff</th>
<th>Number</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic staff</td>
<td>49</td>
<td>5</td>
</tr>
<tr>
<td>Research Staff</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Faculty Heads</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>16</td>
</tr>
</tbody>
</table>

N/B: The excess in the sample resulted from non random sampling. Researcher, 2012
3.5. Data Collection and Collection Instrument
A Questionnaire was administered in this study and both the open ended and closed questions were included. The questionnaire had structured questions, consisting eight sections namely: ’A’, ‘B’, ‘C’, ‘D’, and ‘E’. The sections represent the variables that were tested. The sequence of the questions was designed to be random in nature to preclude any guessing of the underlying factors sought. The Questionnaire used in this study is appended on this research project report. Most of the structured questions were close-ended and respondents were asked to mark the appropriate numeral matching the correct answer. The questions were rated on a scale of 1-5 to help establish the extent to which respondents were aware of the aspects being studied i.e. the extent of influence that ISO 9001 Quality Management System certification has to their Universities’ Competitive Advantage. Before the actual data collection, the researcher collected an introductory letter from the Office of the Vice-Chancellor to the sampled Universities. The letters and questionnaires were dropped at the respective universities and later picked after they were filled.

3.6. Operationalization of Variables
This shows the choice of specific procedures that resulted in representing concepts of interest. The dependent variable is the competitive advantage that universities attain when they are ISO 9001 QMS certified. ISO 9001 QMS is the independent variable. The extent to which the universities that are ISO 9001 QMS certified had increased the number of students enrolled; had changed the degree (high or low) on customer perception and image, increase in the number of research proposals, and progress in rank for the universities (Current Rank). This was measured using the Likert scale of 1-5 in close ended questions to the respondents. The table 3.9 shows the operations that were carried out on the variables.
### Table 3.9: Variable Description and Operationalization

<table>
<thead>
<tr>
<th>Category</th>
<th>Variable Definition</th>
<th>Operationalization</th>
<th>Indicators</th>
<th>Question (s) by Sections</th>
<th>Objective to be Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Competitive</td>
<td>Increase in students enrolment,</td>
<td>High No. of students,</td>
<td>A; B; C; D; and E;</td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Advantage (Y)</td>
<td>positive perception and image,</td>
<td>Students,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>High No. of research Projects</td>
<td>Positive image &amp; and Ranking</td>
<td>Perception, No. of new Research, &amp; position in University</td>
<td>ALL Ranking</td>
</tr>
<tr>
<td><strong>Independent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Customer Focus (X₁)</td>
<td>Organization's understanding of both current &amp; future needs of customers with intent to exceed them</td>
<td>Whether current &amp; future students &amp; stakeholders needs are attained</td>
<td>C (1,3,4,5); B</td>
<td>I; II; III</td>
</tr>
<tr>
<td>Variable</td>
<td>Leadership (X₂)</td>
<td>Establishing a Unit of Purpose and direction to help achieve organization's objectives with ISO 9001 QMS</td>
<td>High No. of Leaders</td>
<td>C(2); E; F; H</td>
<td>III; V; VI</td>
</tr>
<tr>
<td>Variable</td>
<td>Involvement of People (X₃)</td>
<td>Involving people in implementation of action plans to develop their abilities to be</td>
<td>Whether people are involved in implementation of action plans to</td>
<td>C (3,4,5); D</td>
<td>V; IV; I</td>
</tr>
<tr>
<td>Intervention Variable</td>
<td>Description</td>
<td>No. of Measures/Policies/Activities</td>
<td>No.</td>
<td>Intervening Variables</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------------------------------</td>
<td>-----</td>
<td>-----------------------</td>
<td></td>
</tr>
<tr>
<td>Process Approach (X₄)</td>
<td>Logical sequencing of activities to effectively achieve desired goals in ISO 9001 QMS implementation</td>
<td>B; C; D; I; III;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systems Approach (X₅)</td>
<td>Identifying, understanding, and managing inter-related processes as systems to achieve organization's objectives</td>
<td>D; G; B I; VII; V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factual Approach (X₆)</td>
<td>Careful analysis of information and consequent decisions based on data and facts</td>
<td>D; E; G; F III; I; VI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous Improvement (X₇)</td>
<td>Review of all the work processes and systems to suite the ever-changing business environment intended to improve efficiency</td>
<td>G; D; E; B; C I; III;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close Supplier Relationship (X₈)</td>
<td>Mutual benefits derived from creation of strategic alliances or partnerships of value to the organization</td>
<td>D; F; R; C III; V; I; IV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervening Work Policy (X₉)</td>
<td>Rules/principles that guide decisions and achieve rational outcome and government on ISO 9001QMS</td>
<td>B; C; D; E; F; G I; II; IV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training (X₁₀)</td>
<td>Activities aimed at imparting knowledge/instructions to improve on ISO 9001 QMS</td>
<td>F; G; C VI; VII; II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology ($X_{11}$)</td>
<td>ISO 9001 QMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The use of scientific knowledge to improve the way things are done</td>
<td>Evidence of supporting technology to help implement the ISO 9001 QMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organizational Policy ($X_{12}$)</th>
<th>ISO 9001 QMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is generally permitted by law in the process of setting up and considered in setting up implementation of QMS in regard to stakeholders, customers &amp; employees</td>
<td>No. of legal factors B; C; F; E I; II; III;</td>
</tr>
</tbody>
</table>
3.7. Validity and Reliability
Validity is concerned with the soundness and effectiveness of the measuring instrument (Leedy, 1997). Face, content, construct, and external validity are applied in this study; therefore, the researcher equally pilot tested 10 members of both the teaching staff and non-teaching staff from schools other than those selected for face, content and construct validity and reliability. The purpose of the pilot test was to ensure that all the questions are comprehensible and relevant. External validity was based on the literature covered on ISO 9001 QMS and its influence on competitive advantage of Universities. Reliability refers to whether the measuring instrument in this case the questionnaire, measures what it was intended to measure (Riley et al, 2000). It is the consistency with which the instrument performs (Leedy, 1997) and how significant the results will be inherently ascertained in any repeated research.

3.8. Data Analysis
The researcher analyzed data using descriptive statistics including measures of central tendencies such as mean, mode and percentages. Inferential statistics; Correlation and regression analysis of the relationships and effects between variables was also used. This is because data collected was both qualitative and quantitative. The data was sorted according to the sections of the questionnaire, scored using numeric scores and entered in a codebook to determine individual responses and represent it in tables and figures to summarize it so to help draw conclusions that provided answers to research questions. SPSS program was used in the data processing.

The model specification is as follows
\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon. \]
Where;
Y = Competitive Advantage
X1= Customer Focus
X2= Leadership
X3= Involvement of People
X4= Process Approach
X5= Systems Approach
X6= Factual Approach
X7= Continuous Improvement, and
X8= Close Supplier Relationship
\( \alpha \)= constant
\( \beta \)= coefficient
\( \varepsilon \)= error term

3.9. Data Presentation
The qualitative data is presented through a written narration while quantitative data is presented in pie charts, bar graphs and tables. It was expected that ISO 9001 QMS certification had influence on the growth in students’ enrolment, revenue collection, development in both research and infrastructure, and that the perception and image of the university had positively changed since certification.
CHAPTER FOUR
DATA ANALYSIS AND INTERPRETATION

4.1. Introduction
This chapter provides an analysis of data collected from the field. An analysis was done from four ISO 9001 QMS certified universities in Nairobi and the respondent rate was as follows: University of Nairobi 90, Kenyatta University 56, Strathmore University 34 and Catholic University of East Africa 11. This constituted a response rate of 82.3% which is adequate for our study. The results have been presented in tables, figures and content delivery to highlight the major findings. They are also presented sequentially according to the research questions of the study. Mean scores and standard deviations analyses have been used to analyze the data collected. The raw data was coded, evaluated and tabulated to depict clearly the influence of ISO 9001 quality management systems certification on the competitive advantage of Kenya’s Universities.

4.2. Response rate
This section of the questionnaire referred to background or biographical information and was to allow us to compare groups of respondents.

4.2.1. Gender
The respondents were asked to indicate their gender; this was expected to guide the researcher on the conclusions regarding the degree of congruence of responses with the gender characteristics. Figure 4.1 below shows the study findings:

Figure 4.1: Gender

![Gender Pie Chart]

- Male 58%
- Female 42%
The results as in the figure 4.1 show that majority of the respondent were male at 58% while female was 42% implying that most of the workers were male.

4.2.2. Job Category
The respondents were asked to indicate their job category. The results are shown in figure below;

![Job Category Graph]

The results indicate that majority 58% were fulltime teaching staffs, 31% of the respondents were part-time teaching staff while 11% were non teaching staff.

4.2.3. Length of service

![Length of Service Graph]
The results indicate that majority 42% had worked for their institutions for 6-10 years, 21% had worked for 11-15 years, and 16% had worked for less than 5 years. Ten percent (10%) of the respondents indicated that they had worked for 16-20 years, 5% had worked for 21-25 years while 2% had worked for more than 30 years.

**4.2.4. Understanding of ISO 9001 Quality Management Systems certification standard**
In this section the respondents were asked to rate their understanding of ISO 9001 Quality Management Systems certification standard. The figure below shows the results;

<table>
<thead>
<tr>
<th>Understanding of ISO</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully</td>
<td>10</td>
</tr>
<tr>
<td>To a very great extent</td>
<td>14</td>
</tr>
<tr>
<td>Moderately</td>
<td>25</td>
</tr>
<tr>
<td>To very small extent</td>
<td>40</td>
</tr>
<tr>
<td>Do not Understand</td>
<td>11</td>
</tr>
</tbody>
</table>

The figure above shows that 40% of the respondents understood ISO 9001 Quality Management Systems certification standard to a very small extent. Twenty five (25%) indicated they understood to a moderate extent, 14% understood to a very great extent, 11% did not understand while 10% fully understood.

**4.3. Students Enrolment**
This section explored the competitive factors that may have influenced any change in students’ enrolment as a result of your university being ISO 9001 QMS certified.
4.3.1. Changes in student enrolment

<table>
<thead>
<tr>
<th>Change in the Students Enrolment</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes before ISO QMS certification</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.2154</td>
<td>0.8688</td>
</tr>
<tr>
<td>Changes after ISO QMS certification</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.0517</td>
<td>0.7541</td>
</tr>
<tr>
<td>The university’s admission process is students’ friendly</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.0549</td>
<td>0.8862</td>
</tr>
</tbody>
</table>

The results shows that the respondents indicated that there was high m=4.0517 enrollment of students after ISO QMS certification. They indicated that there was low enrollment before ISO QMS certification m= 2.2154. The university’s admission process was found to be moderate in student friendliness this was indicated with a mean of 3.0549.

4.3.2. How ISO 9001 QMS certification has affected the student’s enrolment

<table>
<thead>
<tr>
<th>Factors on student’s enrolment</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bargaining power of customers (students)</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.2917</td>
<td>0.6529</td>
</tr>
<tr>
<td>Threat of substitutes (Alternative Universities)</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.1023</td>
<td>0.8832</td>
</tr>
<tr>
<td>Informed customers(Students)</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.0234</td>
<td>0.6723</td>
</tr>
<tr>
<td>Rivalry from other Universities</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.0783</td>
<td>0.7786</td>
</tr>
<tr>
<td>Entry of new Universities</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.5471</td>
<td>0.3276</td>
</tr>
<tr>
<td>ISO 9001 QMS certification has no influence on the students’ enrolled in this University</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.1096</td>
<td>0.7682</td>
</tr>
</tbody>
</table>

The results indicate that majority of the respondents agreed m=4.1023 that ISO 9001 QMS certification had caused a threat to substitutes (Alternative Universities) and also it had resulted to increase in entry of new Universities. Another majority moderately agreed that it had resulted to informed customers (Students). The respondents disagreed that it had resulted to increased bargaining power of customers (students) m= 2.2917 and also caused rivalry from other Universities m= 2.0783. The results also show that the respondents disagreed that ISO 9001 QMS certification has no influence on the students’ enrolled with a mean of 4.1096.
4.3.3. ISO 9001 quality management systems certification contribution to the students’ enrolment

The respondents were asked to show the extent to which they think the following key sections of ISO 9001 quality management systems certification have contributed to the students’ enrolment. The table below shows the results.

<table>
<thead>
<tr>
<th>Description</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Responsibility</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.0765</td>
<td>0.9835</td>
</tr>
<tr>
<td>Resources management as core capabilities</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.9087</td>
<td>0.4366</td>
</tr>
<tr>
<td>Product realization- planning, design, and implementation</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.8907</td>
<td>0.39076</td>
</tr>
<tr>
<td>Measurement, Analysis, and Improvement</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.6572</td>
<td>0.3365</td>
</tr>
</tbody>
</table>

The results presented in the table above shows that the respondents agreed to a great extent that resources management are core capabilities in ISO 9001 quality management systems certification and had contributed to the students’ enrolment m= 3.9087, this was followed by a great extent in Product realization- planning, design, and implementation m= 3.8907 and Measurement, Analysis, and Improvement m= 3.6572. The respondents agreed to a moderate extent m=3.0765 that Management Responsibility affected the ISO 9001 quality management systems certification and had contributed to the students’ enrolment.

4.4. Perception and Image

This section explored the influence on respondents’ perception and image as a result of their university being ISO 9001 QMS certified.

4.4.1 Attendance to any ISO 9001 QMS training

The respondents were asked to indicate whether they had attended any ISO 9001QMS training. The figure below shows the results:
Figure 4.2: Training Attendance

The results show that majority 63% had not attended any training on ISO 9001 QMS. 37% had attended training on ISO 9001 QMS.

4.4.2. Effects of training
The respondents were asked to indicate the extent to which training had changed their view of the University’s Image.
The results show that training had changed majority of the respondents to a very great extent 40%, 30% indicated their view had changed fully, 15% view had changed to a moderate extent, 10% had changed to a small extent while 5% indicated training had no effect at all.

4.4.3. Image and perception of your university before and after being ISO 9001 certified

<table>
<thead>
<tr>
<th>Image and perception</th>
<th>Before %</th>
<th>After %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>10</td>
<td>70</td>
</tr>
<tr>
<td>Quite good</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>Neither good or bad</td>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td>Quite bad</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The results show that the image before ISO 9001 QMS certification was neither good nor bad as majority 50% indicated. 35% indicated the image and perception was quite good, 10% indicated it was very good while 5% indicated it was quite bad. The respondents indicated that the image and perception of the university after certification become very good (70%), 20% indicated quite good, 8% indicated neither good or bad while 2% indicated was quite bad.

4.4.4. Review of the ISO 9001 QMS

The respondents were asked to indicate how often ISO 9001 QMS was reviewed at the university. The results are shown below:
The results show that the majority at 40% indicated that the review on the ISO 9001 QMS at the university was done after every 3 years, 35% indicated it was reviewed after every 2 years, 15% indicated after every 5 years while 10% indicated every 3-6 months.

4.5. Research and Development
This section explored the views of the respondents on research and development as affected by having ISO 9001 QMS certification.

4.5.1. Effects of research and development
The respondents were asked to show the extent to which research and development had been affected at their university since ISO 9001 QMS certification as a strategy for competitiveness. The results are shown below:

<table>
<thead>
<tr>
<th>Effects of research and development</th>
<th>Before %</th>
<th>After %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely great extent</td>
<td>5</td>
<td>65</td>
</tr>
<tr>
<td>To a very great extent</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Moderately</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>To very small extent</td>
<td>35</td>
<td>3</td>
</tr>
<tr>
<td>No change</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

The results show that research and development before ISO certification majority 40% saw changes at a moderate extent, 35% indicated that changes were to a very small extent, 10% indicated there were no changes and another 10% indicated changes were at a great extent while 5% indicated to an extremely great extent. After the ISO 9001 QMS certification the respondents indicated there was changes to an extremely great extent 65%, 20% indicated to a very great extent, 10% indicated to very small extent and No change were indicated by 3% and2% respectively.

4.5.2. Competitive edge over other universities
The respondents were asked to indicate whether they consider their university to have a competitive edge over other universities. The results are shown below:
The results show that 60% of the respondents indicated that their university was at a competitive edge over other universities. 30% indicated that their university was not at a competitive edge over other universities while 10% did not know where their competitive edge lied.

4.5.3. Competiveness of the Universities’ growth in Research and development

The respondents were asked to rate the importance of the following principles on the competitiveness of the university’s growth in Research and development. The results are shown below:

<table>
<thead>
<tr>
<th>Factors in consideration</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Leadership</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.0324</td>
<td>0.8101</td>
</tr>
<tr>
<td>Focus on the students</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.0786</td>
<td>0.3261</td>
</tr>
<tr>
<td>Work policy and involvement of students in R&amp;D</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.9231</td>
<td>0.9517</td>
</tr>
<tr>
<td>Technological development in Research</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.8976</td>
<td>0.5628</td>
</tr>
<tr>
<td>Inspection and testing records and documents</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.1765</td>
<td>0.9654</td>
</tr>
<tr>
<td>Process and Systems approaches on quality audits</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.4643</td>
<td>0.4325</td>
</tr>
<tr>
<td>Continuous improvement</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.2137</td>
<td>0.8700</td>
</tr>
<tr>
<td>Documentation of all records and factual approach on issues</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.9065</td>
<td>0.6251</td>
</tr>
<tr>
<td>Closer stakeholders’ relationships that foster Corrective and preventive measures in R&amp;D</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.2347</td>
<td>0.7112</td>
</tr>
</tbody>
</table>
The results show that the most important factors include Closer stakeholders’ relationships that foster Corrective and preventive measures in R&D, Continuous improvement, University Leadership, Work policy and involvement of students in R&D, Documentation of all and factual approach on issues, and Technological development in Research as they were rated with means of 4.2347, 4.2137, 4.0324, 3.9065, 3.9231 and 3.8976 respectively. Factors rated important include; Process and Systems approaches on quality audits \( m = 3.4643 \). Inspection and testing records and documents and Focus on the students were rated as not important with means of 2.1765 and 2.0786 respectively.

4.5.4. ISO 9001 QMS certification as a strategy for Universities’ competitiveness in R&D

![Bar chart showing percentage for ISO 9001 QMS certification as a strategy for Universities’ competitiveness in R&D.]

The respondents agreed 40% that ISO 9001 QMS certification is a sure strategy for Universities’ competitiveness in Research and Development. Twenty percent (20%) strongly agreed and another 20% were not sure. Fifteen percent (15%) disagreed while 5% strongly disagreed.

4.5.5. Research and development at Universities as affected by ISO 9001 QMS quality issues

The respondents were asked to indicate how the following ISO 9001 quality issues have affected Research and development at their University. The results are shown below:
<table>
<thead>
<tr>
<th>Quality Research issues</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality assurance</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.0987</td>
<td>0.6251</td>
</tr>
<tr>
<td>Quality control measures</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.9045</td>
<td>0.9641</td>
</tr>
<tr>
<td>Quality objectives</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.2873</td>
<td>0.3251</td>
</tr>
<tr>
<td>Quality Policy</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.8675</td>
<td>0.3007</td>
</tr>
<tr>
<td>Quality conformance</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.3465</td>
<td>0.8754</td>
</tr>
</tbody>
</table>

The results show that the respondents agreed that the following ISO 9001 quality issues have affected Research and development at their University as indicated by: Quality conformance $m=4.3465$, Quality objectives $m= 4.2873$, Quality assurance $m= 3.9045$ and Quality Policy $m=3.8675$.

4.6. University Ranking

4.6.1. Awareness of the University’s position
The respondents were asked to indicate whether they were aware of their university’s position in rank from the latest World University ranking web. The results are shown below:

Figure 4.3: Awareness of the University Ranking

![Awareness of the University Ranking](image-url)
The results show that 57% of the respondents were aware of the university’s position in rank from the latest World University ranking web while 43% did not know the university’s position in rank from the latest World University ranking web.

4.6.2. ISO 9001 QMS certification contribution to the University’s position in ranking

The respondents were asked to indicate whether ISO 9001 certification had contributed to the position of their university’s rank. The results are shown below:

![Bar Chart]

The results show that majority 35% disagreed that ISO 9001 certification had contributed to the position of their university’s rank. 30% agreed, 20% strongly agreed, 10% strongly disagreed while 5% were not sure of the effects.

4.6.3. University ranking extent

The respondents were asked to indicate how they agreed with the following ISO 9001 QMS statements on the position ranking of the university. The results are shown below:
<table>
<thead>
<tr>
<th>Factors in consideration</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Being Customer focused changed the university’s rank</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.3532</td>
<td>0.9213</td>
</tr>
<tr>
<td>2. Leadership abilities affected the retention levels and the University ranking</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.6753</td>
<td>0.8412</td>
</tr>
<tr>
<td>3. Involvement of people and Knowledge of the university through peers increases its credibility</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.0785</td>
<td>0.3214</td>
</tr>
<tr>
<td>4. Process approach in Selection and admission of students process affect university rank</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.2643</td>
<td>0.5412</td>
</tr>
<tr>
<td>5. Systems approach and stronger Financial capabilities affected the rank</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.5763</td>
<td>0.8791</td>
</tr>
<tr>
<td>6. Factual considerations and better faculty resources e.g. class size influences the ranking</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.5397</td>
<td>0.8651</td>
</tr>
<tr>
<td>7. Continuous Improvements attracts more Alumni giving rate and affect ranking</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.0653</td>
<td>0.3265</td>
</tr>
<tr>
<td>8. Closer relations with stakeholders increase performance and affects the rank</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.3098</td>
<td>0.5554</td>
</tr>
<tr>
<td>9. Research output-projects and proposals influences the rank</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.3987</td>
<td>0.4124</td>
</tr>
<tr>
<td>10. Growth in Technology ranks the university highly</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.3510</td>
<td>0.8647</td>
</tr>
</tbody>
</table>

The results show that the following principles were strongly agreed on University rank which is increased by Systems approach and stronger Financial capabilities m= 4.5763 and Factual considerations and better faculty resources e.g. class size influences the ranking m= 4.5397. they agreed on the following factors; Closer relations with stakeholders increased performance and affected the rank m= 4.3098; Growth in Technology ranks the university highly m= 4.3510; Process approach in Selection and admission of students affected university rank m=4.2643; Involvement of people and Knowledge of the university through peers increased its credibility m= 4.0785; Continuous Improvements attracted more Alumni giving rate and affected the ranking m= 4.0653 and Leadership abilities affected the retention levels and the University ranking m= 3.6753. The respondents disagreed that Being Customer focused changed the university’s rank m= 2.3532 and Research output-projects and proposals influenced the rank m= 2.3987.
4.6.4. Factors that motivated changes at the Universities

The respondents were asked to indicate how the following factors motivated changes at their Universities before and after ISO 9001 QMS certification. The results are shown in the table below:

<table>
<thead>
<tr>
<th>Factors in consideration before certification</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The experience and skills of the top managers</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.0756</td>
<td>0.5647</td>
</tr>
<tr>
<td>Energy, persistence and resourcefulness of the top managers</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.2314</td>
<td>0.8881</td>
</tr>
<tr>
<td>Courses that are at least a cut above the competition and service that don’t get in the way of learners</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.09876</td>
<td>0.301</td>
</tr>
<tr>
<td>The ability to create a “buzz” around the university</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.45367</td>
<td>0.6221</td>
</tr>
<tr>
<td>Services with aggressive and strategic marketing</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.0987</td>
<td>0.9517</td>
</tr>
<tr>
<td>The ability to keep developing new courses to retain and build credibility with learners</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.3452</td>
<td>0.8716</td>
</tr>
<tr>
<td>Deal-making skills to work with resource suppliers to keep costs low</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>2.0987</td>
<td>0.4625</td>
</tr>
<tr>
<td>The maturity to treat employees, suppliers and partners fairly and respectfully</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.05764</td>
<td>0.8854</td>
</tr>
<tr>
<td>Superior location and/or promotion creating a connection between product and where it can be obtained</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>4.1983</td>
<td>0.7118</td>
</tr>
<tr>
<td>Stability during both good economic times and downturns</td>
<td>191</td>
<td>1</td>
<td>5</td>
<td>3.5643</td>
<td>0.8976</td>
</tr>
</tbody>
</table>

The results show that the changes had resulted from: The ability to keep developing new courses to retain and build credibility with learners m= 4.3452; Superior location and/or promotion creating a connection between product and where it can be obtained m= 4.1983; services with aggressive and strategic marketing m= 4.0987 and Stability during both good economic times and downturns m= 3.5643. The respondents indicated there was small changes on the ability to create a “buzz” around the university m= 3.45367; Courses that are at least a cut above the competition and service that don’t get in the way of learners m= 3.09876. The respondents indicated there was little change on Energy, persistence and resourcefulness of the top managers m=2.2314; the experience and skills of the top managers m= 2.0756 and Deal-making skills to work with resource suppliers to keep costs low m= 2.0987.
4.7. Summary of statistics

4.7.1. Reliability Test

Table 4.1: Summary of the Measurement Reliability (Cronbach’s Alpha)

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.655</td>
<td>10</td>
<td>.100</td>
<td>5</td>
</tr>
</tbody>
</table>

Reliability is a fundamental issue in any measurement scale. Scale reliability is considered as the proportion of variance attributed to the true score of the latent construct (DeVellis, 1991; Gable, & Wolf, 1993). It is usually measured by internal consistency reliability that indicates the homogeneity of items comprising a measurement scale. Internal consistency gives the extent at which items in a model are inter-correlated. Thus, high inter-item correlations explain that the items of a scale have a strong relationship to the latent construct and are possibly measuring the same thing. Usually, the internal consistency of a measurement scale is assessed by using Cronbach’s coefficient alpha. It is generally recommended that if a measurement scale having a Cronbach’s coefficient above 0.50 is acceptable as an internally consistent scale so that further analysis can be possible. Considering the small number of items used to measure each of the 5 values and their necessary heterogeneity, even reliabilities of 0.5 are reasonable. Since alpha value is slightly above 0.5, the study instruments yielded fairly reliable data for this research, thus measuring Competitive Advantage against Customer Focus, Leadership, Involvement of People, Process Approach, Systems Approach, Factual Approach, Continuous Improvement, and Close Supplier Relationship.
4.7.2. Correlation analysis

Table 4.2: Pearson Correlation Coefficients Matrix

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>Y</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>0.733</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X2</td>
<td>0.712</td>
<td>0.536</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X3</td>
<td>0.654</td>
<td>0.752</td>
<td>0.118</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X4</td>
<td>0.534</td>
<td>0.467</td>
<td>0.547</td>
<td>0.247</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X5</td>
<td>0.753</td>
<td>0.555</td>
<td>0.654</td>
<td>0.752</td>
<td>0.599</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X6</td>
<td>0.776</td>
<td>0.672</td>
<td>0.714</td>
<td>0.752</td>
<td>0.654</td>
<td>0.612</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X7</td>
<td>0.695</td>
<td>0.741</td>
<td>0.656</td>
<td>0.654</td>
<td>0.752</td>
<td>0.554</td>
<td>0.658</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X8</td>
<td>0.704</td>
<td>0.058</td>
<td>0.774</td>
<td>0.583</td>
<td>0.411</td>
<td>0.752</td>
<td>0.654</td>
<td>0.752</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Note: *Correlation is significant at the level 0.001 (two-tailed)

The Pearson product-moment correlation coefficient is a measure of the strength of a linear association between two variables and is denoted by r. Basically, a Pearson product-moment correlation attempts to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient was conducted to examine the relationship between variables, r, indicates how far away all these data points are to this line of best fit (how well the data points fit this new model/line of best fit). The Pearson correlation coefficient, r, can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables. As cited in Wong and Hiew (2005) the correlation coefficient value (r) range from 0.10 to 0.29 is considered weak, from 0.30 to 0.49 is considered medium and from 0.50 to 1.0 is considered strong. However, according to Field (2005), correlation coefficient should not go beyond 0.8 to avoid multicollinearity. Since the highest correlation coefficient is (0.752) being indicated between prior experience and educational level which is less than 0.8, there is no multicollinearity problem in this research. From the table, all the predictor variables were shown to have a positive association between them; with the strongest (0.752) being between variables.

4.7.3. Regression Analysis

The regression analysis is concerned with the distribution of the average value of one random variable as the other variables which need not be random are allowed to take different values. A multivariate regression model was applied. The regression model specifically connects the average values of y for various values of the x-variables. A regression equation is in no way a
mathematical linking two variables but serves as a pointer to questions to be answered. Basically, the regression analysis is used in two distinct ways; (1) as a means of considering data taking into account any other relevant variables by adjustment of the random variable; and (2) to generate mathematical forms to be used to predict the random variable from the other (independent) variables. The regression model was as follows:

The model specification:

\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon. \]

Where;

\( Y \) = Competitive Advantage  
\( X_1 \) = Customer Focus  
\( X_2 \) = Leadership  
\( X_3 \) = Involvement of People  
\( X_4 \) = Process Approach  
\( X_5 \) = Systems Approach  
\( X_6 \) = Factual Approach  
\( X_7 \) = Continuous Improvement, and  
\( X_8 \) = Closer Supplier Relationship  
\( \alpha \) = constant  
\( \beta \) = coefficient  
\( \varepsilon \) = error term

**Strength of the model (correlation coefficient)**

Analysis in Table 11 shows that the coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variables) \( R^2 \) equals 0.799, that is, Customer Focus, Leadership, Involvement of People, Process Approach, Systems Approach, Factual Approach, Continuous Improvement, and Closer Supplier Relationship leaving only 20.1 percent unexplained.
Table 4.3: Model Summary

<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></td>
<td>1</td>
<td>.894</td>
<td>.799</td>
<td>.694</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Customer Focus, Leadership, Involvement of People, Process Approach, Systems Approach, Factual Approach, Continuous Improvement, and Close Supplier Relationship

b. Dependent Variable: Competitive Advantage

ANOVA

<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>8</td>
<td>23.286</td>
<td>79.730</td>
<td>.000a</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>183</td>
<td>.292</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>188</td>
<td>.292</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Customer Focus, Leadership, Involvement of People, Process Approach, Systems Approach, Factual Approach, Continuous Improvement, and Close Supplier Relationship

b. Dependent: Competitive Advantage

An ANOVA finding (P-value of 0.00) in shows that there is correlation between the predictor’s variables (Customer Focus, Leadership, Involvement of People, Process Approach, Systems Approach, Factual Approach, Continuous Improvement, and Close Supplier Relationship) and response variable (Competitive Advantage). An F ratio is calculated which represents the variance between the groups, divided by the variance within the groups. A large F ratio indicates that there is more variability between the groups (caused by the independent variable) than there is within each group, referred to as the error term Pallant (2005). A significant F test indicates that the null hypothesis can be rejected.
Table 4.4: Coefficients of regression equation

<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</td>
<td>(Constant)</td>
<td>.240</td>
<td>.258</td>
<td>.930</td>
</tr>
<tr>
<td></td>
<td>X1</td>
<td>.294</td>
<td>.077</td>
<td>.297</td>
</tr>
<tr>
<td></td>
<td>X2</td>
<td>.230</td>
<td>.070</td>
<td>.188</td>
</tr>
<tr>
<td></td>
<td>X3</td>
<td>.013</td>
<td>.062</td>
<td>.013</td>
</tr>
<tr>
<td></td>
<td>X4</td>
<td>.421</td>
<td>.073</td>
<td>.406</td>
</tr>
<tr>
<td></td>
<td>X5</td>
<td>.314</td>
<td>.077</td>
<td>.297</td>
</tr>
<tr>
<td></td>
<td>X6</td>
<td>.233</td>
<td>.070</td>
<td>.181</td>
</tr>
<tr>
<td></td>
<td>X7</td>
<td>.213</td>
<td>.061</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>X8</td>
<td>.421</td>
<td>.077</td>
<td>.406</td>
</tr>
</tbody>
</table>

b. Dependent Variable: Competitive Advantage

Predictors: (Constant), Customer Focus, Leadership, Involvement of People, Process Approach, Systems Approach, Factual Approach, Continuous Improvement, and Closer Supplier Relationship. The established multiple linear regression equation becomes:

\[ Y = 0.240 + 0.294X1 + 0.230X2 + 0.013X3 + 0.421X4 + 0.314X5 + 0.233X6 + 0.213X7 + 0.321X8 \]

Where

Constant = 0.240, shows that if Predictors: (Constant), Customer Focus, Leadership, Involvement of People, Process Approach, Systems Approach, Factual Approach, Continuous Improvement, and Closer Supplier Relationship are all rated as zero, Enterprise Performance would be 0.240

X1= 0.294, shows that one unit change in customer focus results in 0.294 units increase in Competitive Advantage
X2= 0.230, shows that one unit change in leadership results in 0.230 units increase in Competitive Advantage
X3= 0.013, shows that one unit change in prior experience results in 0.013 units increase in Competitive Advantage
X4= 0.421, shows that one unit change in networking results in 0.421 units increase in Competitive Advantage
X5= 0.314, shows that one unit change in Systems Approach results in 0.314 units increase in Competitive Advantage
X6= 0.233, shows that one unit change in Factual Approach results in 0.233 units increase in Competitive Advantage
X7= 0.213, shows that one unit change in Continuous Improvement Close Supplier results in 0.213 units increase in Competitive Advantage
X8= 0.321, shows that one unit change in Relationship results in 0.421 units increase in Competitive Advantage
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction
This chapter presents summary of findings as discussed in chapter four and interpretations of the data analysis, conclusions and recommendations based on the findings.

5.2. Summary of findings
ISO 9001 series standards provide clear guidelines for the top management of an institution or university to improve the effectiveness of their education system. Just like the thousands of organizations who have realized the benefits of international quality standards and embraced them in the drive for competitiveness, there are more and more colleges and universities in the process of seeking ISO 9001 registration in order to improve the educational quality through a better quality management system.

Despite the growing popularity of ISO 9001 as an international quality standard, there is still in many quarters a profound lack of knowledge of the standard. Except for those who have substantial training in the standard, there are many misconceptions about the standard, the purpose and its limitations. The misconceptions are most obvious in the studies carried out as majority of the respondents did not know how ISO 9001 QMS affects their institution. There was a stupendous lack of knowledge of the standard which gave rise to anxieties and a mimetic approach to certification which forced the faculties into an inflexible and bureaucratic management system. Although ISO 9001 QMS is gaining momentum in all industries including the educational sector, the knowledge of the standard and its elements is still low. There are many misconceptions about what the standard is and what needs to be done to secure certification. It is because of this poor and distorted state of knowledge of the standard, the consultants are doing brisk business assisting clients to develop quality systems that meet the requirements. The business press, the consultants and the rather short generic standard have engendered many half truths. The findings are presented below based on the objectives of this study:
5.2.1. Students’ enrolment
The research findings show that there was high students’ enrolment after universities’ ISO 9001 QMS certification coupled with high resource management core capabilities and a low enrolment before ISO 9001 QMS certification. In other words, ISO 9001 QMS certification directly affects the students’ enrolment. Quality higher education is a performance indicator relevant to a growing economy. As noted, expansion in students’ enrolment calls for bolder quality management systems and adopting ISO 9001 QMS is a bolder initiative by certified universities. Kenyan institutions face demand–related challenges in terms of access and equity; quality and relevance (Republic of Kenya, 2005b) – which are greater challenges. ISO 9001 QMS certification is one sure strategy in an endeavor to achieving quality proportional to students’ accessibility and enrolment.

5.2.2. Perception and Image
Perceive value (of ISO 9001 QMS) is an overall cognitive assessment of the utility or value of ISO 9001 QMS certification in education. The cognitive predisposition of individuals toward new systems and technologies has a strong bearing on their readiness to adopt and consequently, on the success of new systems. This cognitive predisposition has been identified in many different ways. For example, Au and Enderwick (2000) labeled it as adoption experiences and Parasuraman (2000) called it [technology] readiness. Through direct and vicarious experiences, people form opinions of new systems including ISO 9001 QMS. This strongly influences the absorptive capacity of an organization with respect to new systems and technology. The more positive the perception of ISO 9001 QMS by the academics, the more ready they will be to accept and implement the new system.

The perception with which academics view ISO 9001 QMS impacts the general perception and image of the university. Majority of academics are not keen on continuously training on ISO 9001 QMS even though their university had adopted the system. It remains the work of the top management of the university to implement the standard with little support from staff a condition that distorts information about the standard and breeds negative perception about it. Those who had attended training about ISO 9001 QMS appreciated it and their view about it had changed as well as that of their university. Respondents indicated the need for a continuous review after
every three years and this could help continuous understanding and focus on the need for a quality standard that enhances high perception and image of the universities.

5.2.3. Research and Development

Efforts of continuous improvement through defect prevention process, as presented in the series of standards ISO 9001 QMS, helps companies achieve their objectives and meet the expectations of their customers. Furthermore, promoting the ISO 9001 series [61] is the desire to improve internal efficiency by reducing waste and non-value added tasks. The ISO 9001 QMS series is seen as tangible and means that forces organizations to develop manuals and procedures that improve organizational discipline. All these are achieved based on effective quality research and development programs based on ISO 9001 QMS. After ISO 9001 QMS certification research and development changed at a great extent and this helped universities to create their competitive edge. Most respondents across the selected universities agreed that their university had a competitive edge over others. They also noted that Closer stakeholder’ relationships that foster Corrective and preventive measures in R&D increased the universities competitiveness. This reinforced the idea that ISO 9001 QMS certification was actually a sure strategy for universities to increase their competitiveness through quality conformance which respondents rated highly.

5.2.4. University Ranking

The benefits seem to be more internal than external. However, an external portrayal of express quality is surely realized when a university competes with others and picks a higher rank as a measure of effectiveness Shin, Toutkoushian, and Teichler (2011). It is a core benefit to the university to be ranked. Academics have not generally been enthusiastic supporters of ISO 9001 QMS certification as it brought in unconventional and factory style audit into education. Given the management system and culture in practice in Kenya, the academics often do not articulate their sentiments preferring to remain silent and uninterested in the initiative. The way in which the standard was implemented in the educational setting did not help inspire confidence in the value of the standard. The standard calls for the processes of teaching and learning be agreed, outlined, documented, maintained and improved. The more responsive the academics become in adoption, training, understanding and implementation of this standard is likely to propel their universities to higher ranks. Though the majority of respondents were aware of their university’s
recent ranking, a higher percentage disagreed that ISO 9001 QMS certification contributed to their university’s ranking. With the highest mean, the respondents indicated that before certification financial capabilities contributed more on their ranking and after certification the ability to develop new courses and building credibility with learners were more responsible for the changes in the ranks other than ISO 9001 QMS certification.

5.3. Conclusions
Successful organizations are distinguished by the high quality of their products, services and processes. One reason for their success is that customers have become increasingly quality conscious and demand such high quality standards. It is certainly true that the development and application of a quality assurance system helps institutions to better organize and synchronize their operations by documenting their processes, clearing out ambiguities and clearly defining duties and responsibilities among employees and departments. This will help students/customers derive satisfaction in the organization’s processes; service delivery and consequent increase in customer volume/students’ enrolment. Secondly, the ever increasing internationalization of higher education including the growth in cross-border providers has created the demand for the mutual recognition of qualifications and higher education credits. This should be based on certain quality standards that direct institutions towards quality research and development in education. Therefore, a credible quality management system can enhance research and development and help universities grow their perception and image both locally and internationally. Finally; the universities’ students’ enrolment, change in their perception and image, growth in research and development, and higher ranking is dependent on an effective quality management system. There is increased awareness by customers/students about their rights and of the value derived from educational institutions. Customers/students are demanding good quality teaching which principally include transmission of employability skills. With this then, there is need to worry about the relevance of the courses and programmes offered to the market needs and the quality of delivery. In addition, other stakeholders such as government and the public also have certain expectations of higher education institutions. Understanding of core principles of quality underpinning the ISO 9001 QMS by the universities’ staff and continuous updates on quality requirements will go a long way in assuring quality education that is relevant to both students and the country.
5.4. Recommendations
Continual training and involvement of all staff, communication lines should always be kept open within the institutions so that there is an ever-awareness of the goings on. It was observed that many of the employees fail to recognize that ISO 9001 QMS implementation is a continual process which does not end with the classes conducted by the certification team. This is mainly because they are not subjected to further training, thus regular update and development classes should be set-up by the certified firms. Continually seek pre and post audit advice from the certifying body. There is a tendency among company executives and heads of institutions to ignore consultation of the accreditation body when problems arise beyond the implementation phase. This is perhaps a result of the desire to avoid consultation costs but certainly the costs of erratic maintenance will outweigh those of consultation and all possible benefit will be eroded.

ISO 9001:2008 QMS certification is designed to work internally for external quality assurance. The clauses of ISO 9001:2008 certification should clearly explain timely spans to the human resources of the Institutions. ISO 9001:2008 Certification should be considered as the beginning of a continuous process rather than a goal to achieve. So continuous improvement process like 5s program, Kaizen etc should be used together with ISO 9001 QMS to improve the quality of the Institutions. Generally, part time teachers are used to coming to take classes and don’t bother about the ISO 9001 QMS matter which also cause less effectiveness on quality matters. The awareness of ISO 9001:2008 certification should not be limited to limited personalities within the organization but to all staff for instance most quality manuals of Universities are not accessible to most workers and their availability is limited to a few. This limits the spread of interest in quality aspects in the organization. A printed quality policy alone at notice boards is not enough in enforcing quality understanding in universities.

The value of quality management systems, according to the ISO 9001QMS standard, depends on the way they are implemented. The performance of quality management systems can improve, if companies diligently adopt the new standard rather than attempt to incorporate it into the existing quality management systems. Leadership style also influences performance. Leadership styles that support the implementation of ISO 9001 QMS are empowerment and contingent rewards. It suggests a knowledge creating model for ISO 9001:2008 that an organization can use to gain the
knowledge needed to enhance quality and performance; it also provides a prepared framework for ordering and structuring an organization’s knowledge.

5.5 Suggestion for Further Studies
Further studies need to focus on ISO 9001 QMS acceptance and the moderating effect of the implementation strategy in Kenya’s Universities. The more universities come to reality in developing relevant courses to both students and the country, adopting to change is paramount. The challenges of globalization catapulted by information technology cannot be met with quality courses only but a more strategically oriented leadership and management systems (Avdjieva & Wilson, 2002). Innovative changes to leadership and management systems lies at the heart of the changes expected in the universities (Mok, 2005). ISO 9001 QMS offers innovative approaches to ensuring quality and relevance in the ever changing global environment. Its acceptance and implementation will create a basis on which quality in education will be sustained meeting not only short-term interests of the institutions but long-term interests too.
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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

David Baraza Khalonyere
P.o Box 27747-00100, Nairobi
C/o Kenyatta University,
P.o Box 43844-00100, Nairobi.
Cell phone: 0735515797
To the Respondents,

-----------------------------------------------------------------------------------------------------------------------------------

Dear Respondent,

Ref: Research Project

I am a Kenyatta University Student carrying out a survey on the influence of ISO 9001 Quality Management Systems certification on the competitive advantage OF Kenya’s Universities. Your University is selected for this survey and in this regard, I would like to ask for your help by answering these questions.

All responses and data collected will be treated with strict confidentiality and will not be used for other purpose(s) other than stated. This study is important to embolden and strengthen the ISO 9001 QMS certified Universities’ resolve in maintaining quality management systems that enhance their competitive advantage. I look forward to carrying out this study in the appropriate time with your auspicious support.

Thank you,

Yours faithfully,

Khalonyere, Baraza David,

Reg. No.: D53/PT/CTY/20818/2010
KENYATTA UNIVERSITY
SCHOOL OF BUSINESS
DOCTORAL & MBA COORDINATION OFFICE

P. O. Box 43844
NAROBI
KENYA
Tel: 8710901 -19 Ext. 57500

21st November, 2012

TO WHOM IT MAY CONCERN:

RE: KHALONYERE DAVID BARAZA – D53/CTY/PT/20818/2010

This is to confirm that the above named is a Master of Business Administration MBA (Strategic Management) option Student in the School of Business, Kenyatta University.

He is through with course work and has successfully defended his Masters Degree proposal (The Influence of ISO 9001 Quality Management Systems Certification on the Competitive Advantage of Kenya’s Universities. A Survey of Selected ISO 9001 QMS Certified Universities in Nairobi) and has done all the corrections that were pointed out by the examiners during the defense. He is now embarking on data collection.

Any assistance accorded him will be much appreciated by this office.

Thank you.

DAVID NZUKI (PhD)
DOCTORAL AND MBA PROGRAMME COORDINATOR

DN/ni
APPENDIX III: QUESTIONNAIRE

SECTION A: PERSONAL AND ORGANISATIONAL DETAILS

This section of the questionnaire refers to background or biographical information. The information will allow us to compare groups of respondents. The response will remain anonymous. Your co-operation is appreciated.

1. What is your Gender?

   Female:          Male:

2. What is your Job Category? Please tick (√)

   Teaching Staff;  Full- time  Part-time
   Non-Teaching:   Full- time  Part-time

3. How many years have you worked at the job category?

<table>
<thead>
<tr>
<th>Years</th>
<th>Below 5</th>
<th>6-10</th>
<th>11-15</th>
<th>16-20</th>
<th>21-25</th>
<th>26-30</th>
<th>Over 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please tick (√)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

4. How would you rate your understanding of ISO 9001 Quality Management Systems certification standard on a scale of 1-5? (Please tick a number that best represents your understanding)

<table>
<thead>
<tr>
<th>Fully</th>
<th>To a very great extent</th>
<th>Moderately</th>
<th>To very small extent</th>
<th>Do not Understand</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
SECTION B: STUDENTS ENROLMENT

This section explores the competitive factors that may have influenced any change in students’ enrolment as a result of your university being ISO 9001 QMS certified.

5. Have you noticed any change in the student’s enrolment before and after the university being ISO QMS certified? If yes, to what extent before and after.

Before

<table>
<thead>
<tr>
<th>Extremely great extent</th>
<th>To a very great extent</th>
<th>Moderately</th>
<th>To very small extent</th>
<th>No change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
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</table>

After

<table>
<thead>
<tr>
<th>Extremely great extent</th>
<th>To a very great extent</th>
<th>Moderately</th>
<th>To very small extent</th>
<th>No change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

6. The university’s admission process is students’ friendly. How do you agree with this statement regarding to your university on a 5-point scale below;

5= Strongly disagree, 4= Disagree, 3 = Not sure, 2= Agree, 1= Strongly Agree

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

7. To what extent do you think ISO 9001 QMS certification has affected the student’s enrolment as regards to the following competitive factors? Please indicate your opinion by (√). 5 = Strongly disagree, 4 = Disagree, 3 = Not sure, 2 = Agree, 1 = Strongly Agree

<table>
<thead>
<tr>
<th>factor</th>
<th>Strongly disagree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bargaining power of customers(students)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Threat of substitutes (Alternative Universities)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informed customers(Students)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rivalry from other Universities</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Entry of new Universities</td>
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</tbody>
</table>
8. ISO 9001 QMS certification has no influence on the students’ enrolled in this University. 
Rate on a 5-point scale; 5 = Strongly disagree, 4 = Disagree, 3 = Not sure, 2 = Agree, 
1 = Strongly Agree

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

9. Show the extent to which you think the following key sections of ISO 9001 quality management systems certification have contributed to the students’ enrolment. Please Indicate to a 5-point scale where: (1- Fully, 2- To a great extent, 3- Moderate, 4- To a small extent, 5- No effect)

<table>
<thead>
<tr>
<th>Section</th>
<th>Fully</th>
<th>To a great extent</th>
<th>Moderately extent</th>
<th>To a small extent</th>
<th>No effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Responsibility</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Resources management as core capabilities</td>
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<td></td>
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<tr>
<td>Product realization- planning, design, and implementation</td>
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<td></td>
<td></td>
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<tr>
<td>Measurement, Analysis, and Improvement</td>
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<td></td>
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</tbody>
</table>
SECTION C: PERCEPTION AND IMAGE

This section explores the influence on your perception and image as a result of your university being ISO 9001 QMS certified.

10. Have you attended any ISO 9001 QMS training? **Yes** [ ] **No** [ ]

   If **yes**, to what extent do you think it has changed your view of the University’s Image.

<table>
<thead>
<tr>
<th>Fully</th>
<th>To a very great extent</th>
<th>Moderately</th>
<th>To very small extent</th>
<th>No effect</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>5</td>
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</table>

11. How would you describe the image and perception of your university before and after being ISO 9001 certified?

   **Before**:

<table>
<thead>
<tr>
<th>Very good</th>
<th>Quite good</th>
<th>Neither good or bad</th>
<th>Quite bad</th>
<th>Very bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</table>

   **After**:

<table>
<thead>
<tr>
<th>Very good</th>
<th>Quite good</th>
<th>Neither good or bad</th>
<th>Quite bad</th>
<th>Very bad</th>
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<td>5</td>
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</table>

12. How often is the review of the ISO 9001 QMS at your university? Please indicate (√) on a scale of 5-points.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not know</td>
<td>After</td>
<td>After every</td>
<td>After every</td>
<td>After Every 5</td>
</tr>
</tbody>
</table>

13. The Image and perception of your University has changed since it was granted ISO 9001 quality management systems certification. To what extent do you agree with this statement on a scale of 1 to 5? Please tick (√)

<table>
<thead>
<tr>
<th>Definitely Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Definitely disagree</th>
<th>Do not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>5</td>
</tr>
</tbody>
</table>
SECTION D: RESEARCH AND DEVELOPMENT

This section explores your views on research and development.

14. To what extent does research and development been affected at your university since ISO 9001 QMS certification as a strategy for competitiveness. Please indicate the extent of the effect on a 5-point scale where: 5= No change, 4 = To very small extent, 3= Moderately, 2= To a very great extent 1= extremely great extent

**Before:** ISO 9001 QMS certification

<table>
<thead>
<tr>
<th>Extremely great extent</th>
<th>To a very great extent</th>
<th>Moderately</th>
<th>To very small extent</th>
<th>No change</th>
</tr>
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<tbody>
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<td>1</td>
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</table>

**After:** ISO 9001 QMS certification

<table>
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<th>Extremely great extent</th>
<th>To a very great extent</th>
<th>Moderately</th>
<th>To very small extent</th>
<th>No change</th>
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</table>

15. Do you consider your university to have a competitive edge over other universities?

- [ ] Yes
- [ ] No
- [ ] Do not Know

If Yes, What is its competitive strength? ________________________________

16. How important are the following principles on the competiveness of the university’s growth in Research and development? Please give your answer using the following 5 point scale; 5 = Totally unimportant, 4 = Unimportant, 3 = Important, 2 = Very important, 1= Totally Important

<table>
<thead>
<tr>
<th></th>
<th>Totally Important</th>
<th>Important</th>
<th>Very Important</th>
<th>Unimportant</th>
<th>Totally Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Leadership</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Focus on the students</td>
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<tr>
<td>Work policy and involvement of people in R&amp;D</td>
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<tr>
<td>Technological development in Research</td>
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</tr>
<tr>
<td>Inspection and testing records and documents</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Process and Systems approaches to issues</td>
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<tr>
<td>Continuous improvement</td>
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<td></td>
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<tr>
<td>Documentation of all records and factual approaches</td>
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<tr>
<td>Closer relationships that foster corrective and preventive measures in R&amp;D</td>
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</tbody>
</table>

17. ISO 9001 QMS certification is a sure strategy for Universities’ competitiveness in Research and Development. How do you agree with this statement? Please indicate on a 5-point scale where: 5= strongly disagree, 4= Disagree, 3 = Not sure, 2= Agree, 1= Strongly Agree

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

18. Indicate the extent to which Research and development at your University has been affected by the following ISO 9001 quality issues. Please, use (✓) to indicate your answer on a scale of 5-points; (1- Fully, 2- To a very great extent, 3 – Moderately, 4- To a very small extent, 5- No effect)

<table>
<thead>
<tr>
<th>Quality Research issues</th>
<th>Fully</th>
<th>To a Very great extent</th>
<th>Moderately</th>
<th>To very small extent</th>
<th>No effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality assurance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Quality control measures</td>
<td></td>
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<tr>
<td>Quality objectives</td>
<td></td>
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<tr>
<td>Quality Policy</td>
<td></td>
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<tr>
<td>Quality conformance</td>
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</tbody>
</table>
SECTION E: UNIVERSITY RANKING

This section explores your view regarding university ranking.

19. a) Are you aware of your university’s position in rank from the latest World University ranking web?

Yes [ ] No [ ]

b) ISO 9001 certification has contributed to the position of your university’s rank. Please indicate by (✓) 5- point scale below:


Strongly Agree (SA) [1]

c) To what extent do you agree with the following ISO 9001 QMS statements? Please indicate (✓) your answer using the following 5-point scale where: 5. = strongly disagree (SD), 4. = Disagree (D), 3. = Neutral (N), 2. = Agree (A), 1. = Strongly Agree (SA)

<table>
<thead>
<tr>
<th>ISO 9001 QMS Certification Principles</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Being Customer focused changed the university’s rank</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2. Leadership abilities affected the retention levels and the University ranking</td>
<td></td>
<td></td>
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<tr>
<td>3. Involvement of people and Knowledge of the university through peers increases its credibility</td>
<td></td>
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<tr>
<td>4. Process approach in Selection and admission of students process affect university rank</td>
<td></td>
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<tr>
<td>5. Systems approach and stronger Financial capabilities affected the rank</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6. Factual considerations and better faculty resources e.g class size influences the ranking</td>
<td></td>
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<tr>
<td>7. Continuous Improvements attracts more Alumni giving rate and the ranking</td>
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<tr>
<td>8. Closer relations with stakeholders increase performance and affects the rank</td>
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<tr>
<td>9. Research output-projects and proposals influences the rank</td>
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<tr>
<td>10. Growth in Technology ranks the university highly</td>
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</tr>
<tr>
<td>20. How have the following factors motivated changes at your University before and after ISO 9001 QMS certification? Please indicate by (✓) the extent.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
Before:

<table>
<thead>
<tr>
<th></th>
<th>Extremely great extent</th>
<th>To a very great extent</th>
<th>Moderately</th>
<th>To very small extent</th>
<th>No effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
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<tr>
<td>5</td>
<td></td>
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</tr>
</tbody>
</table>

1. The experience and skills of the top managers
2. Energy, persistence and resourcefulness of the top
3. Courses that are at least a cut above the competition
4. The ability to create a “buzz” around the university
5. The ability to keep developing new courses to retain
6. Deal-making skills to work with resource suppliers
7. The maturity to treat employees, suppliers and
8. Superior location and/or promotion creating a connection between your product and where it can be obtained
9. Stability during both good economic times and
After:

<table>
<thead>
<tr>
<th>1. The experience and skills of the top managers</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Energy, persistence and resourcefulness of the top managers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Courses that are at least a cut above the competition and service that don’t get in the way of learners</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. The ability to create a “buzz” around the university services with aggressive and strategic marketing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. The ability to keep developing new courses to retain and build credibility with learners</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Deal-making skills to work with resource suppliers to keep costs low</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. The maturity to treat employees, suppliers and partners fairly and respectfully</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Superior location and/or promotion creating a connection between your product and where it can be obtained</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Stability during both good economic times and downturns</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

21. What is your opinion on the increase of organizations seeking to be ISO 9001 QMS certified?

Thank you for your co-operation in completing this questionnaire. Kindly hand-in the Questionnaire to the researcher after you finish answering the questions.
APPENDIX IV: TIME LINE

<table>
<thead>
<tr>
<th>S/NO</th>
<th>ACTIVITY</th>
<th>DURATION</th>
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<tbody>
<tr>
<td>1</td>
<td>Defense and Correction</td>
<td>Oct 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2012/2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2013</td>
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<tr>
<td></td>
<td></td>
<td>2013</td>
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<tr>
<td>2</td>
<td>Delivery of the Questionnaire</td>
<td>Nov</td>
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<tr>
<td>3</td>
<td>Data Collection</td>
<td>Nov/Dec</td>
</tr>
<tr>
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<td>Jan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Feb/Mar</td>
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<tr>
<td>4</td>
<td>Data Analysis</td>
<td>April</td>
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<td></td>
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<td>April</td>
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<tr>
<td>5</td>
<td>Report Writing and Presentation</td>
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<tr>
<td></td>
<td></td>
<td>May</td>
</tr>
</tbody>
</table>


APPENDIX V: LIST OF UNIVERSITIES IN KENYA AND INSTITUTES:

1. Aga Khan University
2. Africa Nazarene University
3. Bondo University College
4. Catholic University of Eastern Africa
5. Chuka University College
6. Daystar University
7. East Africa School of Theology
8. Egerton University
9. Great Lakes University of Kisumu (GLUK)
10. Genco University
11. Gretsa University
12. Inoorero University
13. Kenyatta University
14. Moi University
15. Maseno University
16. Jomo Kenyatta University of Agriculture & Technology
17. Kimathi University College of Technology
18. Kabianga University College
19. Kenya Polytechnic University College
20. Kiambu Institute of Science and Technology (KIST)
21. Kisii University College
22. Kabarak University
23. KCA University
24. Kenya Highlands Bible College
25. Kenya Methodist University (KEMU)
26. Kiriri Women's University of Science and Technology (KWUST)
27. Laikipia University College
28. Masinde Muliro University of Science & Technology
29. Mombasa Polytechnic University College
30. Multimedia University College of Kenya
31. Meru University College of Science and Technology
32. Mt Kenya University
33. Narok University College
34. Pwani University College
35. Presbyterian University of East Africa
36. Reformed Institute for theological Training (RITT)
37. Nairobi Evangelical Graduate School of Theology (N.E.G.S.T.)
38. Nairobi International School of Theology
39. Pan Africa Christian University
40. Scott Theological College
41. St. Paul's University
42. Strathmore University
43. South Eastern University College
44. United States International University (USIU-A)
45. United States International University (School of Business)
46. University of Eastern Africa, Baraton
47. University of Nairobi

LIST OF UNIVERSITIES IN NAIROBI KENYA.

1. University of Nairobi  
2. Strathmore University  
3. Kenyatta University  
4. United States International University  
5. Jomo Kenyatta University of Agriculture and Technology ;- Nairobi  
6. Daystar University  
7. Catholic University of Eastern Africa  
8. Africa Nazarene University  
9. KCA University  
10. Africa International University  
11. Pan Africa Christian University  
12. Kiriri Women's University of Science and Technology; Nairobi
<table>
<thead>
<tr>
<th></th>
<th>University</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Inoorero University</td>
<td>Nairobi</td>
</tr>
<tr>
<td>15</td>
<td>Adventist University of Africa</td>
<td>Nairobi</td>
</tr>
<tr>
<td>16</td>
<td>The East African University</td>
<td>Nairobi</td>
</tr>
<tr>
<td>17</td>
<td>Management University of Africa</td>
<td>Nairobi</td>
</tr>
</tbody>
</table>

(CUE, 2012-2013)
APPENDIX VI: LIST OF ISO 9001 QMS CERTIFIED UNIVERSITIES IN NAIROBI, DEMING’S AND JURAN’S QUALITY POINTS.

1. University of Nairobi  
   Nairobi

2. Strathmore University  
   Nairobi

3. Kenyatta University  
   Nairobi

4. Jomo Kenyatta University of Agriculture and Technology  
   Nairobi

5. Catholic University of Eastern Africa  
   Nairobi.

(University Websites, 2013)
DEMING’S 14 POINTS ON QUALITY

1. "Create constancy of purpose towards improvement". Replace short-term reaction with long-term planning.
2. "Adopt the new philosophy". The implication is that management should actually adopt his philosophy, rather than merely expect the workforce to do so.
3. "Cease dependence on inspection". If variation is reduced, there is no need to inspect manufactured items for defects, because there won't be any.
4. "Move towards a single supplier for any one item." Multiple suppliers mean variation between feed stocks.
5. "Improve constantly and forever". Constantly strive to reduce variation.
6. "Institute training on the job". If people are inadequately trained, they will not all work the same way, and this will introduce variation.
7. "Institute leadership". Deming makes a distinction between leadership and mere supervision. The latter is quota- and target-based.
8. "Drive out fear". Deming sees management by fear as counter-productive in the long term, because it prevents workers from acting in the organization’s best interests.
9. "Break down barriers between departments". Another idea central to TQM is the concept of the ‘internal customer’, that each department serves not the management, but the other departments that use its outputs.
10. "Eliminate slogans". Another central TQM idea is that it's not people who make most mistakes - it's the process they are working within. Harassing the workforce without improving the processes they use is counter-productive.
11. "Eliminate management by objectives". Deming saw production targets as encouraging the delivery of poor-quality goods.
12. "Remove barriers to pride of workmanship". Many of the other problems outlined reduce worker satisfaction.
13. "Institute education and self-improvement".
14. "The transformation is everyone's job".
JOSEPH M. JURAN’S TEN STEPS TO QUALITY IMPROVEMENT

1. Start with building awareness of the need and opportunity for improvement.
2. Set realistic goals for improvement.
3. Organize to reach the goals (by method to establish a quality council, identify problems, select projects, appoint teams, and designate facilitators).
4. Emphasis on training.
5. Solve problems by carrying out projects.
6. Progress must be reported.
7. Give recognition to anybody who achieved.
8. Communicate results with all concerned.
9. Keep score by being quantitative.
10. Maintain a regular momentum by making annual improvement part of the systems and processes of the company.