

**INFLUENCE OF ISO 9001:2008 QUALITY MANAGEMENT SYSTEM ON
ACADEMIC STAFF'S SERVICE DELIVERY IN PUBLIC
UNIVERSITIES IN KENYA**

BY

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DECLARATION

DECLARATION BY THE CANDIDATE

This Thesis is my original work and has not been presented for a degree in any other university.

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DEDICATION

This work is dedicated to my parents Mmboga Ezina and Joash Andiva; my husband Patrick Agesa and my children, Laura Agesa, Billgates Agesa, Cindy Agesa and Joylin Agesa for the effort they put into my life and their inspiration towards my education. Thank you and God bless you all.

ABSTRACT

The implementation of International Organization for Standardization (ISO) 9001:2008 Quality Management System (QMS) in education has become a debated trend on whether or not the certification is appropriate for the Education sector. Some scholars consider its adoption as a strategic decision by educational institutions to ensure delivery of quality service therein while others do not. Complaints by some academic staff and students in public universities in Kenya on the impact of ISO 9001:2008 QMS casts doubt on their level of satisfaction with it based on non-conformities. For instance between 2012 and 2015 one university recorded 5310 non-conformities and another one recorded 5340 non-conformities which were higher than the other 12 Universities that recorded below 3940 non-conformities in examination processing, curriculum review, teaching process and provision of quality teaching/learning facilities. The purpose of this study therefore was to establish the influence of ISO 9001:2008 QMS on academic staff's service delivery in public universities in Kenya. Objectives of the study were to; establish the influence of ISO 9001:2008 QMS on teaching, determine the influence of ISO 9001:2008 QMS on management of examinations, determine the influence of ISO 9001:2008 QMS on quality teaching/ learning facilities and establish the influence of ISO 9001:2008 QMS on curriculum review in public Universities. A conceptual framework was used to show the influence of the independent variable ISO 9001:2008 QMS on the dependent variables: teaching, management of examinations, quality teaching/learning facilities and curriculum review in public universities. Descriptive and correlational research designs were adopted. Study population was 759 academic staff consisting of 420 from one university and 333 from the other. Fisher's formula was used to determine sample size of 254 teaching staff. Proportionate and purposive sampling was used to select 254 teaching staff, that is, 142 from one university and 112 from another; and saturated sampling was used to select 4 students' leader and 2 management representatives. Questionnaire, interview schedule and document analysis guide were used to collect data. Face and content validity of the instruments was determined by experts in education administration. The content validity indices for the four instruments were academic staff questionnaire .89, interview schedule for academic staff .78, observation guide .89 and document analysis guide .89 This means that all the instruments were valid. Cronbach's alpha was used to determine reliability of the instruments using 75(10%) of study population whereby a coefficient of .7 and above at a p-value of 0.05 was considered reliable. The instruments were reliable as their coefficients exceeded .7 at p-value of .05. Quantitative data was analyzed using frequency counts, means, percentages and regression analysis. Qualitative data was transcribed and analyzed in emergent themes and sub-themes. The study established that ISO 9001:2008 QMS had significant influence on teaching, management of examination, provision of quality teaching /learning facilities and curriculum review such that for every one unit increase in ISO 9001:2008 QMS conformities in teaching, management of examination, provision of quality teaching /learning facilities and curriculum review improved academic staff's service delivery by .738 units, .689 units, .617 units and .479 units respectively. This means that when non conformities decline there is improvement in academic staff's service delivery in public universities. ISO 9001:2008 QMS was a significant predictor of academic staff's service delivery in the four areas; teaching, ($F(1,252) = 32.328, P < .05$), management of examination p ($F(1,252) = 32,942, P < .05$), provision of quality teaching/learning facilities ($F(1,252) = 24.976, P < .05$) and curriculum review ($F(1,252) = 6.085, P < .05$). The study concluded that ISO 9001:2008 QMS improved service delivery in the public universities. The study recommended that public universities should strive to minimize non conformities for excellent service delivery. This study provides information to lecturers, Kenya Bureau of Standards and university management on the way forward in improving the teaching, management of examinations, provision of quality of teaching/learning facilities and curriculum review in public universities.

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ABBREVIATIONS AND ACRONYMS

BSI	:	British Standard Institute
CUE	:	Commission for University Education.
ICT	:	Information Communication and Technology
ISO	:	International Organization for Standardization
KEBS	:	Kenya Bureau of Standards
KU	:	Kenyatta University
NACOSTI	:	National Council for Science, Technology and Innovation
Ph.D	:	Doctor of Philosophy
QMS	:	Quality Management systems.
SSP	:	Self Sponsored Programme

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The ISO 9001:2008 quality management systems were created by the International Organization for Standardization (ISO) which is an international non-governmental organization based in Geneva Switzerland (Goetsch & Davis, 2002). The founding of International Organization for Standardization (ISO) was part of a global action to rationalize the thousands of conflicting standards of various nations that had been developed after World War II to promote standards in international trade, communication and manufacturing. The family of ISO 9000 standards is made up of four standards, which are: ISO 9000:2005, ISO 9001:2008, ISO 9004:2009 and ISO 9011:2002. The work of preparing international standards is normally carried out through ISO Technical Committees (Mangula, 2013).

International organization for the standardization has authorized a technical committee called TC 176, comprising of 113 members from different countries to be responsible for preparing, establishing, documenting and maintaining the ISO 9001:2008 standard document. The first standard was published in 1987. From 1987 until today the standard has been revised three times. The latest one which is being used worldwide is the ISO 9001:2008 standard for the quality management system and the 2008 reflects the publishing year of the standard. An ISO 9000 registration means that an organization's quality management system meets the requirements of the standard as issued by the international organization for standardization (ISO).

ISO 9000 introduces users to the eight quality management principles as well as the use of the process approach to achieve continual improvement. ISO 9001 is used when you are seeking to establish a quality management system that provides confidence in the organizations ability to provide products that fulfils customer needs and expectations. It is the standard in the ISO 9000 family against whose requirements the quality management system can be certified by an external body. The standard recognizes that the term “product” applies to services, processed material, hardware and software intended for the customer. There are five sections in the standard that specify activities that need to be considered when implementing the system; overall requirements for the quality management system and documentation; management responsibility, focus, policy, planning and objectives; resource management and allocation; product realization and process management and measurement, monitoring, analysis and improvement (ISO, 9000).

The objectives of ISO 9000:2000 standards are the systematic pursuit of errors and other adverse outcomes, the reduction of variation and organization waste such as non -value added activities (Adolfas, 2008), provision of a quality framework without changing how the organization operates (ISO, 2009), improve competitive advantage, promote brand image and a useful tool of marketing (Singels, Ruel &Water, 2001), effective quality management that is focused on customer satisfaction and continual improvement of the system through objective evaluation (Hoyle, 2003). If properly implemented certification may be used as a practical step towards introduction of total quality management which is strongly emphasized by the new ISO 9000:2000 edition of the series (Kanji, 1998).

One of the emerging philosophies in quality management concepts is that Quality Management System (QMS) is applied to organizations, experimented and implemented in institutions of higher learning so as to provide high quality standards for both industry and education (Ruzevicius, 2005). There is a prevailing belief that higher education has entered a new environment in which quality plays an increasingly important role (Bergman, 1995). Felgenbaum (1994) believed that quality of education is the key factor in invisible competition between countries since the quality of products and services is determined by the way that managers, teachers, workers, engineers and economists think, act and make decisions about quality. The increasing International recognition of economic, environmental and social importance of International standards are being reflected by the inclusion of standardization as a subject in higher education programmes. The late 1980's saw the introduction of industrial quality concepts such as total quality management in a few education and training institutes. In the early 1990s, some pioneers embraced ISO 9000 and since then there has been increasing evidence that the adoption of total quality management principles and methods including those embedded in the ISO 9000 requirements could be relevant and useful for education and training organizations (Berg, 1996).

Education and training organizations seek ISO 9000 certification to improve or maintain the quality of their education or training provision, promotion of a high quality image with high visibility and credibility, a way of responding to external factors such as customers, governments or funding bodies, a method for developing a full quality assurance system which covers the whole organization and the need to improve a number of specific activities of the organization. Freeman (1993) and Chesterton (1944) believed that the ISO 9000 series

of quality standards is one way to upgrade the quality of the schools. Healy (1994) believed that the ISO 9000 series of quality standards clearly defines the scope, goal, responsibility, process system, implementation, supervision and evaluation to effectively establish the quality of the school systems. Sallis and Hingley (1991) as cited in Chan, Lee and Chang (2007) pointed out that the implementation of ISO can improve tedious administration procedures at Universities. A research gap which this study attempted to fill.

The ISO 9001 standards are being implemented around the world and it has more than a million organizations in one hundred and seventy six (176) countries (ISO 2010) and over 560 scholarly papers have investigated the ISO 9000 family of standards (Low Sui Pheng & Goh; Kim Kwang, 2005). Individual countries may participate in International Organization for Standardization (ISO) by having their National standard body such as Kenya Bureau of Standards (KEBS) in Kenya.

International Organization for Standardization is still dominated by industrialized countries from Western Europe (Heires, 2008). Several European governments have established programmes that provide financial support for the implementation of the ISO 9000:2008 quality systems. Since the early 1990's a number of education and training institutions in Europe have obtained ISO 9001:2008 certificate. The education and training organizations are generally positive about ISO 9001:2008 and recognize a number of problems and drawbacks in the operation of the system such as: continuous volume of paperwork involved, cost of certification and ongoing cost of maintenance, the risk of evolving towards a bureaucracy focused on procedures and registrations and the difficulty of implementing changes fast. The certifying body has to be paid for its services which may involve a considerable cost for an

education and training institution. The lion's share of the expenditure is represented by the salaries of the staff members involved with the implementation of the quality system and payment to external consultants (Inaki, 2011).

The British National Standard on quality management systems (BS 5750), which was the main precursor of ISO 9000 was just published in 1979. BS 5750 was developed partly as a reaction to the Japanese quality management movement with its emphasis on employee behavioural change and Total Quality Management (TQM) principles. After the development of the ISO 9000 standards British companies could easily convert their BS 5750 certificate into an ISO 9000 certificate by incorporating minor changes. According to Dick (2000) the principal motivation for pursuing ISO 9001:2008 quality management system among firms in the UK was the ability of the certificate to open customers' doors that were previously closed, or would close if ISO certification were not achieved.

Swedish researchers Landmark and Weslius (2006) revealed that the strongest and most valuable effects of the ISO 9000 standard are clearer and more apparent working procedures and responsibilities. The most apparent problem is bureaucracy which can lead to a reduced flexibility. Findings by Elg, Gremy (2012) in Sweden concur with those of Poksinka and Dahlgaard (2003) that ISO 9000 quality management system was viewed as a tool for improving company image rather than for supporting improvement process in the firm

Rodriquez-Escobar and Martinez-Lorente (2006) in their study indicated that in Spain certification is only a guarantee that the company is using a quality management system according to a list of requirements and procedures. However, the benefits that have been

attributed to ISO 9001:2008 standards have been overstated so that companies tend to generate high expectations that are difficult to realize completely. The researchers concluded that, overvaluation and exaggeration of the possibilities of certification and the consequent formation of unrealistic expectations give rise to the dissatisfaction of managers when the results do not measure up to their plans.

In Hong Kong, the main motivator behind the implementation of ISO 9001:2008 Certified quality systems was to meet customer requirements while the principal perceived benefits included more systematic record keeping, improved internal communication and enhanced competitiveness of the firms. The implementation of ISO 9001:2008 was not without its share of negative outcomes which included more paperwork arising from addressing ISO 9001:2008 requirements and preparing written documents for all activities at operational level, more time spent in management, higher overall project cost (Kumaraswamy & Dissanayaka, 2000), an extra administrative burden to statutory agents (Chan & Chan, 2000), employee turnover and keeping records up to date (Kwok, 1997).

In developing countries, only 2-3% of the total number of ISO 9001:2008 certificates has been issued. The main reasons for the relatively low number of certified companies in developing countries are the lack of quality awareness and the perceived high cost of implementing the ISO 9000:2008 quality management systems. ISO 9001:2008 is perceived as important primarily for exporters. The ISO survey (1996) further concludes that awareness of ISO 9001:2008 is reasonable, because most countries were promoting quality awareness in general. On the other hand, few countries operate special funding or technical assistance programmes related to ISO 9000:2008 implementation. Technical support services such as

information, training and consultancy are generally available, but trained auditors and internationally recognized certification services are less available. The recognition of existing testing and certification bodies in developing countries is still moving with difficulty. Few certification bodies have signed memorandum of understanding with foreign bodies and national accreditation schemes are present in few countries.

According to a study by Sampaio (2009) China was the country with the largest number of ISO 9000 issued certificates in 2004. The first ISO award was won in 2007 by the China Jiliang University Peoples Republic of China (ISO, 2009). In most of the countries in developing Asia the primary motivation for implementing the ISO 9001:2008 standards has been to facilitate exports, especially to the European Union.

The reasons for certification among Egyptian companies is to improve efficiency of the quality systems, pressures from competitors and foreign partners, maintain and increase market share, meet government demands and to comply with customers' requirement (Magd & Curry, 2003). Tunisian Companies are driven to seek ISO 9001:2008 Certification by external circumstances such as the suppliers relationships, improvement and market shares increase. In South Africa, Ham (2000) study indicated that the main constraints to certification were costs and the excessive administration involved in the certification process.

In Kenya, one hundred and forty two (142) firms are ISO 9001:2008 quality management system certified by Kenya Bureau of Standards (KEBS, 2012) and all universities are pursuing the international organization of standardization certification (Fuchaka & Swaleh, 2012). The study by Anyango (2012) indicated that the University of Nairobi adopted the

ISO 9001:2008 quality management system in their academics, management and administration which had improved the quality of education, management and service. The study concluded that management should develop the potential of each employee in such a manner that a feeling of belonging to the institution is established through offering maximum opportunity for self development and the top managements' commitment to empower the employees by delegating sufficient authority for them to make both individual and collective decision. Magutu, et al (2010) studied quality managerial practices and academic services at the University of Nairobi and concluded that the University of Nairobi had applied quality management and to a very great extent had ensured that the quality management policy is appropriate to its purpose.

The study by Baraza (2013) revealed that there is an effect of ISO 9001:2008 quality management systems certification to the competitive advantage of Kenya's universities. Universities should embrace quality management systems like ISO 9001:2008 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 Kaizen.

Vande Berghe (1997) study of ISO 9000:2008 in Education and training institutions states that ISO 9000:2008 is not an appropriate goal for any organization in any circumstance while Corbelt and Kirsch (2001) noted that the standard has not been the subject of sustained scholarly analysis. A healthy university environment will not only increase the job satisfaction of academic staff but it will at the same time improve the learning environment and increase the productivity of the university (Khalid, 2012). When academic staff perceives

lack of support for their work, they are not well motivated to perform their job best in the classroom, and that when lecturers are not satisfied with their working conditions, they prefer to change institutions or leave the profession at once (Smith, 2007).

According to Berg (1995) many practitioners in the education and training world over wonder whether this development is the best way to improve quality within education and training institutions while Gudo, Ongachi and Olel (2011) concluded that ISO is fairly technical, formal and proved that things do not change because of new procedures, regulations and documentation. Fuchaka and Swaleh (2012) study indicated that employees did not have a sense of belonging and ownership to the university systems in Kenya and would not go extra mile to add value to them. They also stated that though universities use certification as a proof of their quality management system, ISO 9001:2008 merely look at the adequacy of procedural and management processes and not the actual practice on the ground with respect to job satisfaction of teaching staff.

In Kenya ISO 9001:2008 QMS is generally appreciated despite the contradictions advanced by Fuchaka and Swaleh (2012) and Vusa (2016). Whereas Fuchaka and Swaleh (2012) argue that ISO 9001:2008 QMS has little influence on quality management of universities, Vusa (2016) contends that ISO 9001:2008 QMS has improved quality services in universities.

Vusa's (2016) findings are supported by Ruzevicius (2005) whose aim of the study was to highlight peculiarities, problems and inconsistencies of quality assurance in university and university college education established that, the quality of final product of university activities is the result of achievements of all stages of educational process, and that the implementation of TQM and ISO 9001 system in universities and colleges resulted in

optimum involvement by personnel into the process of quality improvement, better usage of personnel competency; more precisely measurement and assessment of work results; better identification and control of processes, rise of satisfaction of clients, social partners and society with universities work results. These discrepancies or contradictions constituted the gap in knowledge this study sought to fill by determining the influence of ISO 9001:2008 QMS on academic staffs' service delivery in public universities in Kenya.

In universities in Kenya, the Directorate of Quality Assurance is charged with the responsibility of ensuring that quality and standards in universities are improved and maintained as per the ISO certification. Thus Directorate of Quality Assurance is the secretariat of ISO 9001:2008 QMS. All public universities that are ISO 9001:2008 QMS certified have "Quality Manuals" in which universities have pledged to comply with the ISO 9001:2008 QMS requirements. For instance in the manual of university "F," the Vice Chancellor in his forward remarks:

The university is committed to providing quality higher education through quality teaching and learning, research, consultancy and community outreaches services, good governance and management. To achieve these, the university management has endeavored to streamline its Quality Management System in order to deliver services that can be benchmarked against international standards. Mechanisms for effective systems have been put in place, including documented procedures for various activities in the university. The staff have been trained on QMS and are expected to learn to become responsive and plan for continual improvement. ISO 9001:2008 is our guiding QMS standard. The university will put more emphasis on implementation of plans, review changes and focus on quality service provision to our customers and stakeholders. Quality starts with every one of us and it is our collective responsibility to achieve it. Let us together strive for excellence by creating an environment where processes are effective and efficient in achieving our goals.

And the Vice Chancellor of university “E” remarks

The university is committed to quality through teaching, research and development; providing on time services to foster and develop academic excellence in basic and applied research at all levels of study by training practice oriented manpower, who can contribute effectively to social, intellectual and academic development in the community, the nation and the community of nations. The university is committed to communicating exhaustively with its customers, and internally with its employees, to continually improve its services, products, processes, methods, and the work environment to ensure each customer is receiving the highest quality service in compliance with statutory and other regulatory requirements at the committed cost and on time. In order to realize this commitment the university management will monitor and review established quality objectives and the quality policy once every two years. It shall ensure provision of resources for implementation of an effective Quality Management System based on ISO 9001:2008.

The Quality Manuals are evidently guided by ISO 9001:2008 QMS requirements / principles.

These requirements /principles are;

- i) Customer focus: Organizations depend on their customers, and therefore need to shape activities around the fulfillment of market need.
- ii) Leadership: Is needed to provide unity of purpose and direction.
- iii) Involvement of people: Creates an environment where people become fully involved in achieving the organization’s objectives.
- iv) Process approach: To achieve organizational objectives, resources and activities need to be managed as processes with an understanding of how the outputs of one process affects the inputs of another.
- v) System approach to management: The effectiveness and efficiency of the organization depends on a systematized approach to work activities.
- vi) Continuous improvement: Adopting this as a part of everyday culture is a key objective for an organization.

vii) Fact based decision- making: Effective decisions are based on the logical and intuitive analysis of data and factual information.

viii) Mutually beneficial supplier relationships: Such relationship enhance the ability to create value.

In a nutshell, in the quality manuals, objectives, quality policy, normative reference, QMS, management responsibilities, resource management, realization of education service /product realization; and measurements, analysis and improvement constitute the QMS of the university. All of which are tailored to ISO 9001:2008 QMS and The Management Representative (MR) who is one of the top officers in the university management, normally a Deputy Vice Chancellor or Registrar is the accounting officer of ISO 9001:2008 QMS and also the implementers of the same through the Directorate of Quality Assurance. This means that he/she oversees the implementation of quality service /product in the university. It is also important to note that all the requirements of ISO 9001:2008 QMS are generic and are intended to be applicable to all organizations regardless of the size and products produced. It is also worth noting the benefits of ISO 9001:2008 QMS. First it involves Top Management in the improvement of quality management system; facilitates the organization to become a customer-focused organization; ensures sustained customer satisfaction by producing, delivering and providing support functions that meet the customer's needs and expectations; and increases the effectiveness and efficiency of the organization through continued improvements in systems and product /service quality. The site of the study was universities "E" and "F" (Table 1).

Table 1: Public Universities in Kenya: Non –conformities 2012 to 2015

S N	University	Year of ISO certification	Areas of Focus and Non –Conformities					Total
			Examination processing procedures	Curriculum review process	Teaching process	Teaching/ learning facilities	Processing of University Continuous assessment Tests	
1	A	20 th June 2012	1650	180	230	870	850	3780
2	B	29 th July 2009	1520	130	210	850	660	3370
3	C	30 th Oct 2014	1630	100	240	820	750	3540
4	C	8 th May 2012	1720	170	270	920	780	3860
5	E	1st January 2011	2300	280	360	1100	1300	5340
6	F	26th Sep 2013	2100	270	340	1200	1400	5310
7	G	20 th June 2012	1620	210	180	940	880	3830
8	H	4 th Dec 2009	1670	180	210	830	860	3750
9	I	5 th March 2012	1640	160	240	830	780	3650
10	J	25 th Nov 2014	1540	170	220	860	830	3620
11	K	15 th August 2012	1820	210	240	820	850	3940
12	L	6 th April 2009	1450	140	170	860	740	3360
13	M	16 th June 2010	1550	180	210	840	860	3640
14	N	2 nd Dec 2014	1730	220	230	870	870	3920

Source: KEBS (2015) Standards, Training, Testing and Certification of (14) ISO

9001:2008 Certified Public Universities in Kenya.

From Table 1, it can be noted that universities “E” and “F” for the period 2012 to 2015 experienced more non conformities than other universities. Thus university “E” reported 5,340 non conformities and university “F” 5,310 compared with the other 12 universities that reported 3,940 and less individually for the same period. The non conformities, deviations or non fulfillment of ISO 9001:2008 QMS requirements in the areas of examination management, teaching process, teaching /learning facilities and curriculum review.

The non conformities noted raised the issues of influence of ISO 9001:2008 quality management system on the specified variables that were focused on when certification was done. Thus, it was necessary to investigate the variance accounted for by ISO 9001:2008 quality management systems so that improvement would be earmarked. This is because some studies posit that ISO 9001:2008 quality management system is not a real valuable tool for improvement on quality education while others assert that ISO 9001:2008 quality management system model is the driver of quality in educational organizations (Fuchaka & Swaleh, 2012; Vusa, 2016 & Ruevicius, 2016).

1.2 Statement of the Problem

The concern about quality of education in universities is on the rise as it plays a vital role in economic growth of a country. As a result universities are re-examining their position on the global market and redefining their core business by introducing ISO 9001:2008 quality management system which is geared towards enabling them to systematize and improve their internal processes. Despite efforts of many universities getting ISO certification, its influence on academic staff's service delivery was doubted. Many practitioners in education sector wonder whether this development is the best way to improve quality within education due to numerous counter arguments such as: interpretation problems as the standard was initially designed and written for the manufacturing industry, the system is fairly technical, time consuming, costly and increased bureaucracy. Besides, according to some studies on ISO 9001:2008 quality management system state that it merely looks at the adequacy of procedural and management processes and not the actual practice on the ground with respect to core university functions namely teaching, research and community outreach. This was evidenced in too many non conformities reported in ISO 9001:2008 certified public

universities. Moreover, some studies assert that ISO 9001:2008 quality management has proved that things do not change because of new procedures, regulations and documentation. However, some studies assert that it is an important marketing tool and that improves performance and public image of the institutions that are ISO 9001:2008 quality management system certified. From the foregoing discrepancies, it was clear that there was a knowledge gap which this study intended to fill on the influence of ISO 9001:2008 quality management system certification on university academic staff's service delivery in relation to teaching process, provision of quality teaching/learning facilities, curriculum review and processing of university examinations.

1.3. Purpose of the Study

The purpose of this study was to establish the influence of ISO 9001:2008 quality management system on academic staff's service delivery in public universities in Kenya.

1.4. Objectives of the Study

The objectives of the study relating to public universities in Kenya were to:

- i) Establish the influence of ISO 9001:2008 quality management system on academic staff's service delivery in teaching.
- ii) Determine the influence of ISO 9001:2008 quality management system on academic staff's service delivery on management of examinations.
- iii) Determine the influence of ISO 9001:2008 quality management system on academic staffs service delivery in provision of quality teaching/learning facilities.
- iv) Determine the influence of ISO 9001:2008 quality management system on academic staff's service delivery on curriculum review.

1.5. Hypotheses

1.5.1 Null Hypotheses

Ho₁: The ISO 9001:2008 quality management system does not influence teaching process in public universities.

Ho₂: The ISO 9001:2008 quality management system does not influence management of examinations in public universities.

Ho₃: The ISO 9001:2008 quality management system certification does not influence provision of quality teaching/learning facilities in public universities.

Ho₄: The ISO 9001:2008 quality management system does not influence curriculum review in public universities.

1.5.2 Alternative Hypotheses

Ha₁: The ISO 9001:2008 quality management system influences teaching process in public universities.

Ha₂: The ISO 9001:2008 quality management system influences management of examinations.

Ha₃: The ISO 9001:2008 quality management system influences provision of quality teaching /learning facilities in public universities.

Ha₄: The ISO 9001:2008 quality management system influences curriculum review in public universities.

1.6. Assumptions of the Study

The study was guided by the following assumptions:

- i) The ISO 9001:2008 certification at universities “E” and “F” quality management system requirements were adhered to.
- ii) The top management at universities “E” and “F” were committed to the requirements of ISO 9001:2008 QMS.
- iii) Academic staff are aware of ISO 9001:2008 certification in their institutions.
- iv) Academic staff are aware of the implication of ISO 9001:2008 certification in relation to delivery of services.

1.7. Scope of the Study

- i) The study was confined to Universities “E” and “F” for the academic years 2014/15 to 2015/16.
- ii) The study focused on the influence of ISO 9001:2008 QMS on academic staffs service delivery in teaching, management of examinations, provision of quality teaching/learning facilities and curriculum review in public universities in Kenya.

1.8 Limitations of the Study

The following was the limitation of the study. Two (0.79%) of academic staff respondents did not fill the questionnaire in total. Some information was therefore not captured. However since the percentage (.079%) was small, it did not affect the study significantly as Mugenda and Mugenda (2003) notes that a return rate of more than 80% is good enough for analysis of the data collected to proceed.

1.9. Significance of the Study

The findings of this study could:

- i) Assist the university management to put in place suitable strategies on staff performance improvement by maintaining and operationalizing the ISO 9001:2008 quality management system.
- ii) Benefit employees as studies have found that quality certification entails improvements in employee working conditions, occupational health, training, promotion and job satisfaction (Sun, 2000). Employees who enjoy favorable working conditions tend to be more committed to their employer and more willing to make an extra effort on behalf of the company (Brunet & Alarcon, 2007).
- iii) Benefit students as lecturers will be able to teach, examine and release the results in time.

1.10 Conceptual Framework

The conceptual framework (Figure 1) was based on Vusa's (2016) and Ruevicius (2016) assumptions that ISO 9001:2008 QMS influences service delivery in universities.

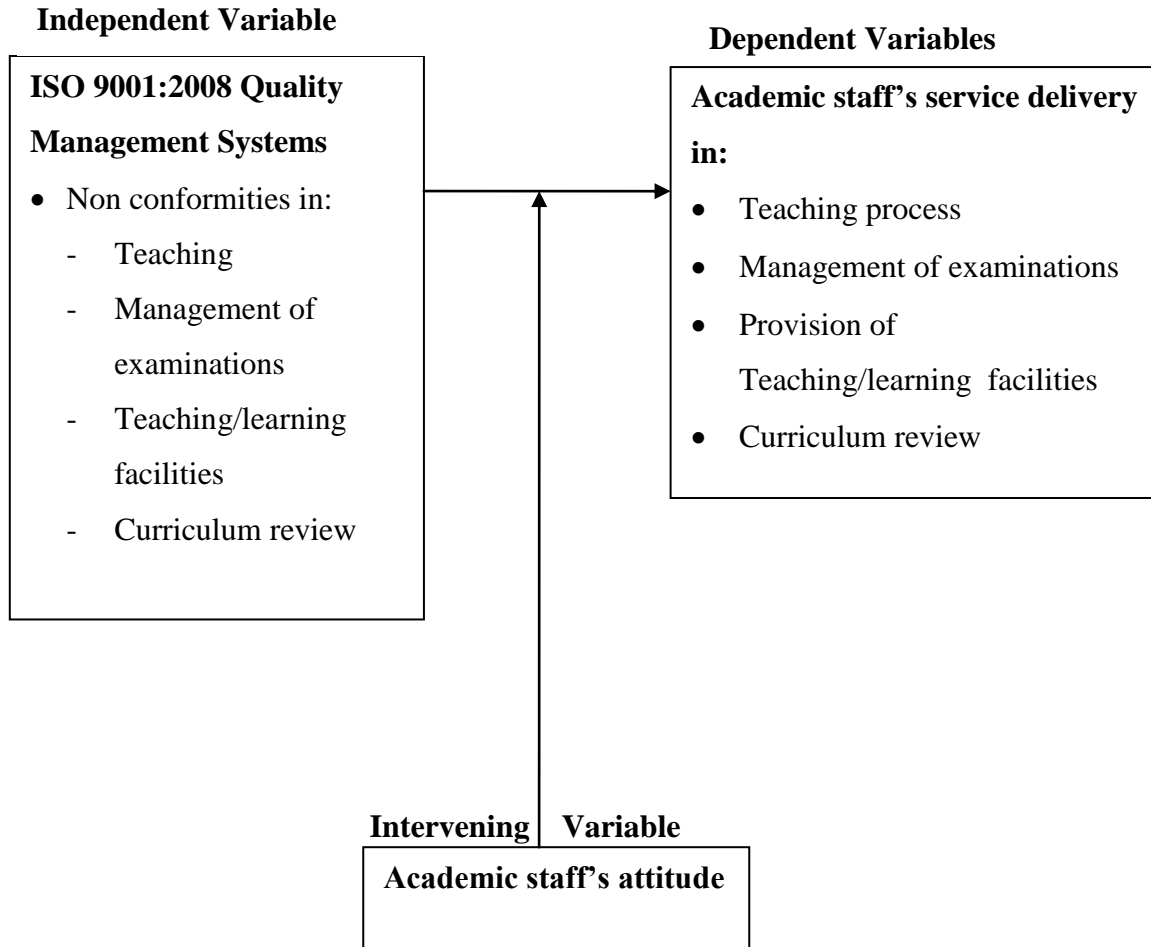


Figure 1: Conceptual framework showing the influence of ISO 9001:2008 Quality Management System on Academic Staff's Service Delivery in Public Universities in Kenya.

Source: Researcher (2016)

ISO 9001:2008 QMS require that universities focus on fulfillment of customer satisfaction. It also requires that university management invoke quality leadership, involve stakeholders, apply system approach to management, emphasize continuous improvement, make effective decisions and foster health relationship. Once these requirements are met academic staffs service delivery will improve. This also means that non conformities should be corrected

whenever they occur. If they are not corrected as they occur, they lead to decline in service delivery. This is because the ISO 9001:2008 QMS is measured in terms of non conformities that require to be corrected for effective and efficient service delivery. The academic staffs attitude moderate the influence thus, when the attitude is positive, service delivery improves and when negative, service delivery diminishes. The areas of service delivery include; teaching, provision of quality teaching/learning facilities, management of examinations and curriculum review. All of them being dependent variables.

1.11 Operational Definition of Terms

In this study the following terms are used in the contexts indicated:-

Academic staff: lecturers in the universities.

Challenges: the obstacles faced by the University in implementing ISO 9001:2008 quality management system that are not beyond human control.

Curriculum: academic programmes approved by Commission for University Education.

Employee job satisfaction: the degree to which a person feels satisfied with his or her job or rather job fulfillment.

Employee commitment: the dedication of staff to their work

Information and Communication technology: all information and communication technology hardware and software, data and associated methodologies, infrastructure and devices that are owned, controlled or operated by the university.

Management representative: members of top management who are in charge of ISO 9001:2008 QMS implementation in the universities.

Non conformity: Refers to non fulfillment of quality requirements as a result of an error or an omission. Whenever an organization fails to meet one of the requirements a non conformity occurs. ISO 9001:2008 QMS lists quality management system requirements such that when an organization deviates from these requirements non conformities occur. Non conformities are used to measure the status of ISO 9001:2008 QMS. These non conformities are used as a measure of ISO 9001:2008 QMS status

because details of non conformance identified in a quality audit is to make unambiguous, defensible, clear and concise definition of the problem so that corrective action can and will be initiated by management. Hence the focus on non conformities.

Quality management: the application of principals, practices and techniques keyed towards customer satisfaction. Philosophy or approach to management that can be characterized by its principles, practices and techniques (Dean & Bowen, 1994).

Requirement: Is a need, expectation or obligation.

Strategies: Refers to ways and means which is used by the universities in maintaining ISO 9001:2008 quality management system.

Student: Refers to those pursuing undergraduate studies.

Total quality management: a set of principles and practices whose core ideas include understanding customer needs, doing things the right way and striving for continuous improvement through teamwork.

Teaching: imparting of the desired knowledge, skills and attitudes to the learner or trainee.

Work procedures: are processes used by staff in performing their assignments.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section deals with review of literature on the influence of ISO 9001:2008 quality management system on academic staffs' service delivery in relation to teaching, management of examination processing, provision of quality teaching /learning facilities and curriculum review.

2.2 Influence of ISO 9001:2008 QMS on Academic Staff's Service Delivery in Teaching in Public Universities

According to Fernandez Chung (2009) quality agencies do not specify details on the minimum standards in teaching quality, as the focus is on the peripherals such as curriculum, minimum teacher qualifications and clarifications of all qualifications in higher education which have been benchmarked internationally. In higher education industry ISO 9001:2008 has been used as one of the indicators for providing quality education (Sohail et al, 2013). Similarly Karapetrovic, et al (1998) postulated that the implementation of ISO 9000 quality systems has a positive impact on the programs provided by universities. ISO 9001:2008 specifies the requirements for quality management system which an organization needs to demonstrate consistently in its ability to provide products (or services) that meet customer expectation at the same time adhere to statutory requirements. The objective is to enhance customer satisfaction through effective practice governed by a quality management system as well as assimilating processes for continual improvement of the system.

Various reasons at universities require implementation of ISO 9001:2008 quality management system standard. These are required to enhance awareness in its employees with respect to document procedure and a proper format for carrying out different functions at various levels as well as to promote standardization in all departments and students satisfaction. Quality in education enables the students to enhance their skills and abilities by implementing the knowledge through quality education. The students and teachers need to be treated differently by knowing their respective needs. Currently quality education is the critical factor for famous universities and develops an entirely different view of the university management. Institutions should develop multiple ways to satisfy themselves that staff involved with the teaching is qualified and competent (Sareh & Shifted, 2014).

There are basically two approaches to teaching which are the Information Transmission /Teacher Focused (ITTF) and the Conceptual Change /Student Focused (CCSF). The ITTF teaching approach is the teacher centered approach with the intention of transmitting to the students information about the discipline. In this transmission, the focus is on facts and skills, but not on the relationships between them. The prior knowledge of students is not considered to be important and it is assumed that students do not need to be active in the teaching – learning process (Trigwell & Prosser, 2004).

The conceptual change/student focused teaching approach is a student centered approach to help students change their world views or conceptions of the phenomenon they are studying. Students are seen to have to construct their own knowledge and so the teacher has to focus on what the students are doing in the teaching –learning process. A Student focused strategy is

assumed to be necessary because it is the students who have to reconstruct their knowledge to produce a new world view or conception. The teacher understands that he /she cannot transmit a new worldview conception to the students. The conceptual teaching strategy includes mastery of techniques including those associated with transmission, but this is an empty display if the students do not learn anything (Trigwell & Prosser, 2004).

In the classes where teachers describe their approach to teaching as having a focus on what they do and on transmitting knowledge, students are more likely to report that they adopt a surface approach to the learning of that subject. While in classes where students report adopting a deeper approaches to learning, teaching staff report adopting approaches to teaching that are more oriented toward students, encourage students to construct their own knowledge, involve the students and challenge the students conceptions and current ideas through questions ,discussions and presentations. The teaching philosophy of the lecturer is to teach and help students to learn to maximize their potential and grow as global citizens who demonstrate forward looking in the way they think and do. Lectures believes in the student's infinite potential to learn and grow as useful citizens able to contribute towards the nations' development. This belief guides the lecturer by adopting the student-centered approaches to teaching (Trigwell & Prosser, 2004).

A study by Garwe (2015) on the impact of involving students in managing the quality of Higher Education in Zimbabwe indicated that the reasons for poor quality of teaching included in order of importance: Limited reading material (25%), poorly qualified Lecturers (20%), substandard teaching venues (18%), inadequate assignments (15%), part-time lecturers who abscond (10%), sexual harassment (8%) and inadequate fieldtrips and practical

work (4%). In addition the students decried the poor state of the classrooms. Some classrooms were too small and students were squashed or they were very large and packed with students such that it was virtually impossible to hear what the lecturers were saying. The furniture in the rooms was also substandard, at times there were no tables or desks or there was shortage of furniture. In addition, some of the classrooms lacked proper ventilation. Staff members also felt the same and indicated that staff offices reveal illogical or misplaced priorities in the allocation of resources.

The literature review indicates the importance of provision of quality teaching /learning facilities in public universities which is emphasized by ISO 901:2008 QMS certification. It was therefore necessary to establish the actual influence of ISO 9001:2008 QMS on provision of teaching /learning facilities.

A study by Mhlanga et al (2013) focusing on University teaching staff in Engineering Department in Zimbabwe found ratios of 51%, 34% and 15% for Masters, Bachelors and Phd degree holders respectively. The average ration of lecturers with doctorate degrees (11%) fell below the international standards. Nigeria for example had 40% of the lecturers holding doctorate degrees (Adeyemo, 2012). However, the lecturers argued that these ratios resulted from the brain drain challenges experienced by Zimbabwean Universities from 2005 to 2009. In addition, there were no funds and opportunities available for staff development.

According to the Commission for University Education (2014) a university should promote highest standard of teaching and learning. A University should institutionalize internal quality assurance mechanism. The CUE (2014) guidelines on quality of teaching includes:

availability of delivery modes and methods should be employed while promoting creativity and critical thinking in learning, facilitate lifelong learning through provision of adult and continuing education, keep abreast with current trends in their discipline, latest technologies of teaching and learning, avail themselves for consultation, guidance and mentoring of students.

Each university should have quality assurance policy, structures and budgetary provisions. A university should show evidence of promoting quality research and innovation by facilitating its staff to carry out research, having a mechanism of providing incentives to members of staff who undertake research, attract research funds, innovate and patent and taking into account research activities when determining academic staff workload and documentation and dissemination of its research outputs (MOEST, 2014).

The most commonly cited functions of teaching include enabling the learners to acquire knowledge, skills, values and ideas. The functions of teaching in a university is to impart knowledge and skills and help students to develop attitudes, values and ideas. Teaching has an important role to clarify beliefs and attitudes held by people in the society which are not necessarily true. Teaching exposes students to learning experiences by putting them in situations that bring about learning such as learning laboratories, operation theatres, art studios or field trips. Teaching develops team spirit and socializes the students by participating in discussions, debates and group projects. Teaching builds confidence and emotional stability in students (Kiruhi, 2009).

Universities “E” and “F” are ISO 9001:2008 certified and have developed procedures for Course allocation for teaching as indicated in Table 2.1.

Table 2.1

Procedure for Course allocation for Teaching in University

Action By	Procedure
COD	<p>6.1 Course Allocation Shall:</p> <p>6.1.1 Allocate courses in consultation with academic members of staff based on the lecturers area of specialization, at least one (1) one week before the beginning of the academic year/semester/term</p> <p>6.1.2 Request for part-time lecturers at least one(1)month before the beginning of each semester as per the procedure for appointment of part time staff</p> <p>6.1.3 Ensure that all course outlines are submitted one (1) one week before the start of the semester.</p>
Lecturer	<p>6.2 Reading and Learning Materials</p> <p>Shall:</p> <p>6.2.1 Prepare reading and learning materials for their respective courses in line with the course content, prior to the beginning of the academic year/semester/term</p> <p>6.2.2 Give course outlines to students during the 1st week of each semester</p>
Lecturer	<p>6.3 Lectures/Tutorials/Supervision of practical’s and setting of exams</p> <p>Shall:</p> <p>6.3.1 Deliver lectures//tutorials/clinicals and supervise group work, practical’s, clinicals, fieldwork, farm, industrial attachment and demonstration</p> <p>6.3.2 Ensure that reading materials are forwarded to distance learning students in time.</p>

- 6.3.3 Give Continuous Assessment Tests CATS and assignments in accordance with the university examination schedule
 - 6.3.4 Give continuous Assessment performance Records of every CAT to CODs before the next CAT is administered.
 - 6.3.5 Set examinations for the respective courses within the 1st four weeks of the Semester.
 - 6.3.6 Return all marked CAT scripts to the students before the next CAT is Administered.
 - 6.4 Attendance Register
 - 6.4.1 Monitor students attendance of lectures, tutorials, practical's, clinical using Attendance Register and report to the COD any cases of irregular attendance
 - 6.4.2 Ensure students seek permission in case they have to, miss scheduled CATS by formal application
-

Source: Fields Data, 2016

The 3rd Surveillance Audit report for “E” (2013) revealed that, sampled part time lecturers had not been paid which led to job dissatisfaction and there was no clear system to capture complaints from internal staff. The Auditors noted that top management commitment was lacking while some lecturers had not been inducted or trained on the requirements of ISO 9001:2008. Most departments in universities are understaffed leading to work overload and demotivation. The promotion of 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).

In circumstances that public universities are experiencing shortage in learning and teaching physical facilities it will lead to further deterioration of quality teaching and learning services

offered in these universities. Attempt to meet the objectives of University education will turn into a mirage and exercise in futility. It will be mass production of University graduates who have certificates without marching academic, technical and psychological competencies. Therefore this study attempted to find out the influence of ISO 9001:2008 quality management system on Academic staffs' service delivery in relation to teaching in public universities in Kenya.

2.3. Influence of ISO 9001:2008 Quality Management System on Academic Staff's Service Delivery in Management of Examination

Many researchers have pointed out a number of factors that influence students to cheat in examinations. Davis, Drinan and Gallant (2009) reported that the situations that students find themselves are to blame for cheating. These situations include stress and pressures for good grades. They further reported that students also willingly enter collusion with other students to cheat, while large crowded classrooms also fostered cheating.

Research by Ruto (2011) revealed that among the factors cited by students for cheating in examinations included poor preparation for examinations, confusion that made students to enter examination room with written papers, pressure from parents, place of work pressures, delayed fees payments, late clearance to do the examinations and reported parental illness. In order to minimize cases of cheating in examinations, the lecturers and students recommended provision of large examination rooms, students to strictly sign lecture attendance lists, thorough searching before entering examination rooms and giving severe punishments to those found cheating. This corroborates with the fact that most Universities

in Kenya lack adequate facilities such as lecture halls and other facilities. This results in congestion and the situation worsens during examination periods where more space is required. This results relates to Earthman (2004) view that students' achievement was linked to the quality of facilities. On the severity of the deterrents, it is evident that those found with serious examinations irregularities get away unpunished or are given higher punishments. This view is in agreement with past research where it was evident that punishment were mild and frequently not supported by the University administration (Bailey, 2001).

The political leadership in Kenya has been quoted in the recent past of its intentions to increase student intake to public universities through double intake. The increased enrolment were accompanied by an increase in examination irregularities such as cheating while staff applied less rigorous criteria in grading examination. Measures recommended by the senate to curb such malpractices did not succeed mainly because of the unmanageable size of many classes. Other measures taken to improve on the efficiency of administering examinations such as the introduction of multiple choice tests only added to further dilute the quality of education offered in public universities. The quality of education in Kenyan universities is lowered by among other reasons, cases of missing marks, sexually transmitted grades and people who write papers for students in return for pay (Mutisya, 2010).

Research by Bichanga and Kimani (2013) on effectiveness of ISO certification on service delivery in public universities in Kenya used descriptive research design specifically means and percentages. These means and percentages were used to establish the extent to which ISO certification influenced effectiveness of service delivery. The study established that ISO certification affected service delivery to a great extent; defined responsibilities clearly,

improved communication with universities, facilitated data gathering for management, improved attitude of staff and overall improved university management. This study relied on descriptive statistics which would not establish the actual effect of ISO certification on service delivery. The service delivery were also generalized in terms of responsibilities and attitude. Bichanga and Kimani (2013) studies did not focus clearly on the core functions of the universities which are teaching, research and community service. Teaching is the central function of the universities and the quality of teaching lies in actual teaching, examination management and curriculum review. Since these three areas were not effectively dealt with by Bichanga and Kimani's (2013) study, it was necessarily to carry out a study on the influence of ISO 9001:2008 quality management system on academic staff's service delivery in public universities with the focus on teaching, examination processing, provision of teaching learning facilities and curriculum review. These were the gaps in knowledge that this study sought to fill.

According to research by Mbirithi (2013), 80% of the deans of schools sampled in University of Nairobi perceived lecturers not setting and marking examinations on time as a great challenge. Furthermore, 62% of deans of schools in Kenyatta University, 70% of deans in Egerton University and 90% in University of Nairobi indicated that there was late submission of examinations by staff, less staff leading to overwork and some lecturers have challenges in setting examinations. On marking and submission of results, 46.2% of the Deans of schools in Kenyatta University, 50% in Egerton and 50% at the University of Nairobi indicated that there was also lateness in marking and submission of results and there were too many scripts for the teaching staff.

On examination data storage, 38.5% of deans in Kenyatta University, 60% in Egerton and 73.3% at the University of Nairobi indicated that there cases of loss of data due to computer crash. In regard to cheating in examinations, 54% of deans in Kenyatta University, 96.7% in University of Nairobi and 70% in Egerton indicated that there were cases of cheating due to high student numbers and low numbers of invigilators. This problem is compounded by challenges of marking examinations and continuous assessment tests for very large numbers of students. Lecturers are at times under considerable pressure when giving and marking examinations due to large numbers of students and short deadlines for marking. There exists an imbalance in the ratio of staff to students. The system of mentoring tutors and graduate assistants to help in marking examinations, counselling and some routine tasks associated with lectureship are no longer evident. This study indicates that there was need to establish the influence of ISO 9001:2008 QMS on quality of academic staff service delivery in processing of examinations since these were non conformities to be addressed in public universities. This in essence was the gap in knowledge that the study sought to fill.

A study by Gudo et al (2011) indicated that inadequate invigilation and supervision of examinations in public Universities was negatively affecting the quality of education provided in these universities .With regard to frequency of students cheating in examinations in the university it was found that 21.9% and 31.32% of students from private and public universities respectively reported frequent examination cheating, meaning that frequency of students cheating in examinations was higher in public universities' than in private universities. Cheating in examinations is an opportunistic behavior attributed to inadequate student preparation and lack of confidence to face examinations.

In public universities, the external examinations system was in use but faced significant challenges such as: the number of students in some classes and department were so large. Thus the external examiners' could not go through as many papers as required. This reduced quality of external examinations; pressure of work in that most external examiners were lecturers in other universities. Consequently, they did not have enough time for the exercise. They already had a lot of work in their work station. Thus pressure of work on the external examiners reduced efficiency as external examiners. The findings by Eshiwani (2009) and Mutisya (2010) indicated that the quality of education in Kenyan Universities is lowered by among other reasons cases of missing marks, sexually transmitted grades and people who write papers and projects for students in return for pay.

In university, the university examination procedures start with draft questions prepared by internal examiners and terminates with the publication of results approved by senate. All copies of draft examination papers except the moderated ones which go for typing must be destroyed. The entire process presupposes responsibility, integrity and confidentiality on the part of all university personnel involved.

According to University "E" ICT policy, whereas access to the internet for academic and research work is encouraged, the University recognizes that it is possible for some students to lift other peoples work from the internet and present them as their own. Therefore University "E" policy stipulates that: (a) student assignments, theses or project work will be presented in soft copy on CD'S and also paper copy. (b) All submitted work will be tested for plagiarism using University authorized software (c) All lecturers continue to acquaint themselves with usage of the anti- plagiarism software and be required to ensure that no final marks are awarded before plagiarism is tested.

With the increased enrolments, University classes in all public universities are major challenge in maintaining robust systems of conducting Continuous Assessment Test (CATs) as per University assessment policy and have the transcripts ready on time. It has become an expensive and time consuming exercise and sometimes some Universities are unable to provide results in time or provide adequate number of CATs. University “E” recognizes assessment as an important part of quality assurance and places a lot of importance to this. To this end, electronic means of assessment help reduce costs associated with examinations. It is therefore the University “E” ICT policy that: (a) where possible, electronic continuous assessment will be designed and delivered to students on a regular basis (b) All examinations will be regulated and approved by relevant organs (c) assessment system will become a mission critical system that will be secured and provided with redundancy to ensure that examinations proceed in case of any system failure (d) University provides the infrastructure and software needed to support provision of the assessments. The procedures for management of university examinations include:

Table 2.2

Procedure for Management of University Examinations

Responsibility	Detailed Procedure
Registrar Academic Affairs	6.1 Shall prepare examination processing schedule and forward to senate for consideration
Senate	6.2 Shall Consider and approve the above schedule
Chief Internal Examiner/COD	6.3 Shall ensure that internal examiners set and moderate exams accordance with examination schedules and forward to the external examiner
External Examiners	6.4 Shall moderate exams in accordance with timelines of schedule and return the same to chief internal examiners
Chief external examiner/COD	6.5 Shall ensure that comments from the external examiner are incorporated by the internal examiner and then submits to the examination office for typing
Assistant Registrar Examinations	6.6 Shall supervise the typing, proof reading and printing of the Examinations.
Registrar Academics	6.7 Shall coordinate the administration and conduct of examinations in accordance with examination time table, examination rules and Regulations.
Internal examiners	6.8 Shall coordinate the administration and conduct of examinations in accordance with the examination time table, examination rules and Regulations.

- Registrar Academics** 6.9 Shall invite external examiners to moderate the marked exams
- 6.10 Shall moderate the marked examination scripts and make
Recommendations
- External Examiners** 6.11 Shall discuss the comments with the CODs
- 6.12 Shall ensure the external examiners comments are
incorporated in the mark sheets during departmental board
meeting
- Chief internal
examiner/COD** 6.13 Shall forward the mark sheets to the faculty board of
examiners for approval
- 6.14 Shall convene a faculty board of examiners to approve the
examination results and present to the senate
- Dean Senate** 6.15 Shall consider and approve results
- 6.16 Shall release examination results
- Registrar (AA)** 6.17 Shall issue official transcripts to students, in accordance with
the examination provisions of regulations
-

**Source: Approved ISO 9001:2008 procedure for Management of University
Examinations at Universities “E” and “F,” 2016**

The above reviewed literature did not address the influence of ISO 9001:2008 quality management system on academic staffs 'service delivery in relation with examination processing procedures thus a knowledge gap that this study attempted to fill.

2.4. Influence of ISO 9001:2008 QMS on Provision of Quality Teaching /Learning Facilities in Public Universities

Most African universities do not have adequate physical facilities such as lecture rooms, office and library and laboratory spaces to provide a suitable learning and teaching environment. The existing buildings are often too old, poorly maintained and too small to meet all space requirements. Some universities such as Makerere have reached or even surpassed their optimal capacity in physical facilities and further increases in student enrolment are likely to yield diminishing returns (Okwakol, 2008). There are serious challenges in Africa with the rapid expansion of universities, inadequate infrastructure, lack of facilities and up to date instructional materials, obsolete and often non-existent equipment, outdated curricula and limited financial resources and administrative support. Library facilities and information systems in almost all universities are antiquated, books and scholarly journals are not only few but very old, some dating to 1950's and are therefore irrelevant to current institutional needs and priorities. In many universities library services are not yet computerized. The problem of scarcity of relevant and current journals continues to be the concern of most universities. This means inability of staff to do research, publish and meaningfully contribute to knowledge (Okwakol, 2011).

Research finding by Abend et al (2006) reveal a link between student achievement and the quality of learning facilities provided to support educational programmes. While quality of learning facilities is an important concern to educators, there is no consensus what a quality facility is or how to effectively measure it. However, several writers have suggested a number of criteria that may be used to measure quality of facilities. Such questions as whether the facility adequately supports the desired educational programme or enables the

development of learning environment that support students and teachers in achieving their goals are critical measures of quality learning facility. According to Yurko (2005) space quality is a function of an education facility. Examples of space qualities are a learning facility having adequately sized classrooms, availability of natural lighting and a welcoming atmosphere. Other aspects such as level of comfort, cleanliness, and maintenance are also important measures of quality facility.

Research by Garwe (2015) indicated that students complained that some lecturers especially those employed on a part time basis gave students just one assignment per course. In addition the assignments would be marked and returned just before they sit for exam or at times even after the examination. This unsatisfactory situation of inadequate and infrequent assignments coupled with the poor quantity and quality and timelines of this feedback caused a serious dent in the quality of learning. Many studies have underscored the importance of formative assessment in that they help students to assess themselves for purposes of learning and directing their future studies.

Most private universities in Zimbabwe just like in Kenya rely on part time lecturers and have relatively less academic staff members who work on fulltime basis. Ten percent of the students blamed poor teaching on part time lecturers who abscond themselves from lectures. The lecturers will therefore either fail to complete the syllabus or if they do they will make it a crash programme and it is usually very difficult for the student to understand and internalize the information. In addition, they do not have time to consult and mentor students outside the lecture times. Part-time lecturers also tended to be less committed to the institution since they did not participate in university service activities like meetings and

taking up some academic and non-academic roles (Garwe, 2015). These practices are what is being referred to as non-conformities in ISO 9001:2008 QMS because they work against the requirements for ISO certification. It is for this reason that the study was envisaged to determine the actual influence on academic staff service delivery in teaching in public universities.

Although no regional infrastructure audit has been conducted, it is reported that there are severe infrastructure constraints in most institutions in Africa. These constraints are affecting the capacity for both teaching and research. Teaching effectiveness is being limited by inadequate facilities, laboratory equipment and computing infrastructure, while student access is limited due to insufficient classrooms or accommodation. Resources for research are of critical importance as the lack of them could be a primary contribution to the brain drain of scientists to industrialized countries (Nyaigoti, 2001 & SARUA, 2009).

It is clear that there are several challenges facing higher education in Kenya and many developing countries. The specific quality issues faced by the public higher education institutions in Kenya are also connected to a number of issues that include: deteriorating physical facilities, rigid programmes that are not responsive to the market, student unrest which leads to long closures and the political appointments of higher education leadership. It is well documented that among other infrastructure and academic problems, windows and doors are falling apart in public universities, residential halls are stinking, there are no subscriptions to journals and no tutorials and that large lecture halls lack efficient microphones. In many universities, academic infrastructure can no longer cope with the

number of learners, so the learners have to attend lectures in overcrowded conditions that are not conducive to effective communication and learning (Odhiambo, 2011).

Ngome (2003) indicated that in Kenya, as in other African countries, higher education is in deep crisis, preview of pertinent data shows declining public expenditures on higher education, deteriorating teaching conditions, gross over-employment in universities, decaying educational infrastructure and facilities, on increasing rate of unemployment among university graduates, a mass exodus of experienced lecturers; shortage of adequate opportunities for thousands of young people seeking higher education, the absence of academic freedom and a decline in the quality of university graduates. Some of these problems could be partly solved by an effective quality assurance mechanism (Odhiambo, 2011) such as ISO 9001:2008 quality management system.

The Commission for University Education in Kenya (2014) guidelines states that a specialized degree awarding institution should have adequate academic resources to ensure quality delivery of programmes. The institution should i) have a critical mass of qualified staff in a specific discipline of national importance, ii) specialized facilities and equipment that meet the standards of the discipline and iii) a specialized library that meets the needs of the discipline. Furthermore, every University should provide appropriate and adequate facilities to cater for the number of programmes on offer and students enrolment. As a minimum, a university should provide the following facilities: a) Lecture theatres or lecture rooms, departmental areas, staff offices and seminar rooms, central administration offices, library, auditorium or lecture theatre, staff common rooms, student common rooms with indoor recreation facilities, outdoor recreation facilities inform of games or sports facilities

and drainage system with proper sanitation and water supply, health unit, ICT infrastructure and spaces for workshop. At the award of Charter a university should have facilities that can accommodate students in four academic programmes. The University should provide lecture rooms which are adequate in number and size and are well lit and ventilated.

Research by Mbirithi (2013) indicated that Kenyatta and Egerton Universities had inadequate textbooks as it was reported by Heads of Department. Libraries had most inadequate facilities in terms of space and books in Public Universities, both self-sponsored and regular students' complain that the Universities have not invested much in the acquisition of textbooks to cope with the increased student intakes (Mwiria Ngome & Odero, 2007). Many students in public universities conduct their studies in their rooms where they do not make any references due to lack of enough textbooks and sitting space in the libraries. These have implications on the Universities effectiveness in transmitting knowledge and skills by making them possible to avail content, influence the scope and depth of coverage of that content to student and the faculty (Republic of Kenya, 2008).

Ahemba (2006) observed that most libraries in African Universities are depleted. Available literature indicates a shortage of funding and investment in many sub-Saharan African universities resulting into deficiencies in key learning resources such as books and other physical infrastructure. Mbirithi's (2013) and Ahemba's (2006) findings concurs with ISO 9001:2008 QMS findings on the fact that provision of quality facilities in universities are necessary for provision of quality service delivery. Therefore it was desirable to establish the influence of ISO 9001:2008 QMS on provision of these facilities in public universities.

The taskforce on Higher Education and Society (World Bank, 2000) observed that most of the teaching practices in African Universities major on rote memorization of factual information and called for learning methods that emphasized greater intellectual engagement, participation and discovery during the learning process, rather than rote learning. Rote learning is most likely to proliferate in resource deficient environments. A Kenyan taskforce for the development of the National Strategy for Higher Education argues that Kenyan University students rely on lecturers notes because library books are insufficient (Republic of Kenya, 2008). In Knowledge economies libraries and computers are critical indicators of quality.

The biggest challenge faced by public universities in Kenya is lack of enough teaching and learning resources like textbooks, computers and in general, teaching and learning infrastructure (Chacha, 2005). Research by Mwangi et al (2011) showed that the quality of the library, online resources and lecture facilities did not meet quality measures of adequacy. The facilities were the antithesis of healthy and secure facilities that can provide stimulating setting for the users. Therefore, insufficient resources has a negative impact on the quality of education.

Research by Waswa and Katana (2008) showed that academic staff in Public Universities in Kenya viewed promotion criterion as being unnecessarily inflexible with an overemphasis on chronological teaching duration and refereed publications in international journals. Combined these problems appear to undermine the quality of service delivery as do various counter reactions from staff such as moonlighting, the use of old teaching notes, zero

research based teaching and learning, a lack of commitment in mentoring of students and examination oriented teaching rather than education for sustainable development. The reviewed literature indicate that academic staff require provision of quality learning materials to provide quality teaching which is envisaged by ISO 9001:2008 QMS requirements.

According to study by Owino (2011) that there is shortage of learning physical facilities in public universities and effective teaching and learning in public universities was hampered by lack of enough essential facilities. Furthermore, the study found that management of quality assurance in private and public universities in Kenya was significantly different. Private universities were doing better in quality assurance than public universities. This was mainly because private universities had better physical facilities and effectively engaged their stakeholders in management of the institutions. Lack of sufficient physical facilities also impacted negatively on the leadership of universities. This was mainly because funding, purchase and maintenance of facilities in public universities was controlled by the relevant government ministry and budgeted funds were hardly received in full by the universities. A consequence public universities suffered repercussions of demoralized staff and an agitating student body.

According to Okibo et al (2013) in many institutions, students face difficult conditions for study. Severely overcrowded classes, inadequate library and laboratory facilities, distracting living conditions and few if any student services are the norm. The financial strain currently faced by most universities are making conditions even worse. The developing world is littered with deteriorating buildings, inadequate libraries, computer laboratories that are rarely open and scientific equipment that cannot be used for want of supplies and parts.

A study by Munene (2008) indicated that in Kenyatta University threat to academic quality emanated from the rapid involvement of privately sponsored students which did not commensurate with an equal increase in the number of teaching staff, library and laboratory facilities as well as staff development opportunities. There have also been problems with infrastructure (lack of staff accommodation, land for expansion and research and poor roads). Abagi (1999) observes that the increasing student numbers over the years has not been matched by a corresponding expansion in teaching and /learning facilities and class sizes of above 300 are not uncommon in public Universities especially in humanities and education courses. Libraries, laboratories, lecture theatres and halls of residence are all overstretched. The increase in student population has not resulted in more recruitment of teaching staff, resulting in those who have remained being manifestly overloaded.

According to Eshiwani (2009), Kenyan universities are forced to work under adverse conditions, poor services, and lack of resources for non-salary academic expenditure such as textbooks, journals, teaching and research equipment and maintenance of such equipment. He asserted that the situation had resulted in lowering of academic standards and of quality of graduates. Graduates are deficient in written communication and technical proficiency which make them unfit for the market.

Analysis by Gudo et al (2011) on adequacy of trained staff for library staff in private and public universities showed that 87.50% and 73.33% of librarians in private and public universities respectively were satisfied with the number of trained library staff available. The interpretation was that both private and public universities had enough trained library staff to

support effective library services for teaching and learning. The researchers wanted to find out the adequacy of library facilities such as space, print, journals, e-journals, internet and current books. It was found that 100% and 66.66% of librarians in private and public universities respectively were satisfied with library space. It meant that the library staff were of the opinion that private and public universities had enough reading space in the libraries to accommodate the students. Investigations was done on the perceived adequacy of print journals in university libraries. It was found that 100% and 46.6% of librarians in private and public universities were satisfied with available print journals. It meant that print journals were not adequate in public universities. It was interpreted that public universities did not have a satisfactory number of print journals for effective teaching and learning. Results on the perceived adequacy of internet facilities in university libraries indicated that 100% and 40% of librarians in private and public universities respectively were satisfied with internet facilities. It meant that public universities did not have adequate internet facilities for effective teaching and learning. Analysis was done on the perceived satisfaction with availability of current books (2005-2010). Responses showed that 100% and 60% of librarians in private and public universities were satisfied with the available current books and journals. It meant that quality teaching and learning in private and public universities was not negatively affected by shortage of current books and journals.

The rapid expansion of university education since the 1990's, both in terms of increase in student enrolment and the mushrooming of new universities has stretched physical, academic and financial resources to their limits. It has also posed challenges on how to manage, organize, finance, regulate and integrate university education to ensure sustainable quality and relevance to current and future national human resource requirements. Almost without

exception resources fail to match the rate of increase in enrolment, and universities are expected to do more with less in terms of infrastructure, teaching and research facilities (Okwakol, 2008).

Developing Countries are able to attract highly skilled workers from developing countries especially in the critical fields of science and ICT. There is a growing mobility of academics, professionals' and skilled workers, especially given the usually less attractive terms and conditions of service, salary structures and work environments in developing countries (Magagula, 2005).

Mulryan-Kyne (2010) has found out that large classes of between 300 and 1,000 and even more at the undergraduate level are common at institutions of higher learning in a number of countries. This occurrence according to research poses challenges to both experienced and inexperienced educators who are assigned to teach larger classes. According to Macgregor et al (2001) introductory courses or classes that fulfill general education requirements often carry enrolment of hundreds of students. These large-class settings have historically been heavily lecture-centered, requiring minimal student engagement and expecting little more than memorization of terms and concepts as evidence of student learning.

Exley and Demnick (2004) and Bligh (2000) established that when educators are confronted with large classes, they tend to present their lessons using lecture based format rather than engaging themselves in other teaching strategies that promote discussions, critical thinking, change attitudes or behavioral skills. Laurillard (2002) concludes that higher education is made up of students with different academic abilities and as such most students will have to

struggle to learn materials presented to them through lectures. The reviewed studies did not address provision of quality teaching /learning facilities and therefore this study attempted to fill the gap.

2.5 Influence of ISO 9001:2008 Quality Management System on Academic Staff's Service Delivery in Curriculum Review

Universities endeavor to maintain standards of academic programmes through various mechanisms. They include (a) programme assessment normally done by a committee of senate. Professional accreditation bodies examine the general structure and content of curriculum, academic standards and course length, entry level to courses, practical experiences, minimum standards of courses to be studied and mode of study. This process enables universities to compare quality of their academic activities with other universities and to ensure that their graduates are well equipped to operate at the cutting edge of their profession (b) merit based admission criteria. (c) Quality of academic staff ensured by stipulating minimum qualifications for appointment to various academic posts and enhanced staff development programmes (d) different arrangements for the assessment improvement of staff teaching and research (Okwakol, 2008).

There are a variety of models of quality assurances on the continent. The Kenya model for instance, entails assisting the universities to meet standards set by the commission for Higher Education (Irina, 2005). It involves: (a) establishment of institutional standards with respect to physical facilities, staffing levels, teaching loads and curriculum standards (b) peer-review, making use of visitation and inspection of the institution and internal self-assessment by the

institutions concerned, (c) instituting quality control and quality assurance measures, and monitoring how these are being applied, (d) ensuring adequate finance resources to run the academic programmes, (e) ensuring viability of financial resources on long term basis, (f) instituting a planning culture based on three year financial plans, six year development plans and ten year projections and (g) development of a master plan.

In the Koech Report, submissions were made to the effect that one of the greatest challenges facing the academic faculties in each of the Universities is the need to review the curricula and content for each teaching subject in order to keep abreast with the rapidly growing body of knowledge, hence the need for faculties, teaching departments and individual teaching staff to familiarize themselves with that latest information in their specific areas of specialization. According to the Inter-university Council of East Africa (IUCEA) and the Commission for Higher Education (CHE, 2008) all academic departments need to be headed by a qualified, academically trained individual with relevant and appropriate experience in university teaching preferably a professor or associate professor holding a PhD in the relevant field of study.

Universities in Kenya have the freedom to develop their programs and adapt them to the market needs (Commission for University Education, 2013). This kind of education system tends to borrow from the American education system which is much renowned for its flexibility and academic freedom (Mautusi, 2013). One of the characteristic features according to CUE guidelines University curriculum is often designed by the individual departments with the more experienced lecturers giving their input regarding the curriculum. The content is often internally peer reviewed at the department and school /faculty before it

is presented to the senate for adoption. After the senate has adopted the programme, it is then presented to the commission for University education for external review (CUE, 2013). Once it has been accepted by the commission for university education, the university can go ahead and implement the curriculum after incorporating the recommendations suggested by the CUE. The portfolio of course units and programmes that are offered by the University are compiled in the university course catalogue. The catalogue among others contains detailed descriptions of the course content to be covered at a particular time, the programme offering and the respective lecture hours for that particular course. The course description, however, does not specify the depth and breadth of content coverage in respect of the particular course. This in essence means that the course lecturer has the freedom to design a course outline skewed to his or her competencies in the subject. The other major weakness of this approach is that in the event two lecturers are assigned to teach the same course there are bound to be variations in content coverage (Mautusi, 2013).

At university level, the statutes vest the development and delivery of curriculum in academic departments led by Heads of Departments (H.O.D). However, the Deputy Vice Chancellor (Academic Affairs) is responsible for ensuring that curriculum development and review is carried out in accordance with university regulations. Quality management in curriculum development at the departmental level requires qualified staff to develop curricula relevant to current community needs and problems, keep in mind requirement of Kenya government and observe standards requisite to an internationally respected education.

Curriculum development is initiated by teaching staff in departments that identify areas in need of developing a new curriculum and point out curriculum that require review. They then

call for department meetings to brainstorm on their needs chaired by the Heads of department. The H.O.D identifies and tasks specialized staff (Sub- committee) to initiate the process of curriculum development and review with a time frame of two months .The specialized staff collect relevant information from their colleagues, related departments ,the market for and consumers of the program, relevant government ministries, industry and key experts. The sub -committee prepares a memorandum of suggested new curriculum or revision to existing curriculum. The memorandum is submitted to the H.O.D who tables it in a special department academic board meeting for discussions.

The department's academic board (all teaching staff) considers the proposals submitted by the subcommittee and possibly makes some revisions. The subcommittee then integrates these suggestions of the department academic board and drafts a new or revised curriculum within one month. On receipt of the draft curriculum and its amendments the H.O.D distributes it to academic staff in the school for further input within two weeks. On receipt of the input from academic staff, the H.O.D organizes a workshop to deliberate the draft courses and revisions. The workshop is facilitated by resource persons (who are subject specialists) from outside the department. The participants of the curriculum workshops are departmental academic staff, stakeholders' representations (students, parents, industry, private sector, Ministry of Education and Tertiary institutions). The aim of the workshop is to improve the quality of the proposed curriculum to suit the market demand, community expectation, maintain an international standard and create awareness among consumers. The findings of the workshop are compiled by the subcommittee and submitted to the H.O.D who circulates it to department academic staff for further input. The H.O.D then holds a departmental

academic board meeting to discuss the advanced draft curriculum and potentially recommend for onward transmission to the school board.

The H.O.D compiles an advanced curriculum draft and submits it to the dean for consideration by the school curriculum committee. The committee recommends amendments to the source department for consideration. When the school curriculum committee is satisfied the draft is submitted for further discussion in the school board. The school board may propose amendment for the source department to consider. When the school board is satisfied with the draft curriculum and course revision, it authorizes the dean to submit the draft curriculum and review recommendations to the chair committee of deans. The Deans committee may propose amendments for the source department to consider the amendments and resubmits the draft to the committee of deans through the dean. If the committee of deans is satisfied it authorizes their chairpersons to submit the proposed curriculum and course revision to the Deputy Vice Chancellor (Academic Affairs) for onward presentation to university senate for discussion.

The Deputy Vice –Chancellor (Academic affairs) in the receipt of the proposed curriculum and revision, tables it in the University senate for discussion. Within two weeks, the senate discusses the proposed curriculum and course revision and may suggest amendments for the source department to consider. The department considers the senate amendments and resubmits the proposed curriculum and revisions to the senate through Deputy Vice Chancellor (Academic affairs). If the senate is satisfied with the draft curriculum and course revisions the curriculum is approved and becomes a bona fide university curriculum to be run

in the source department. Since curriculum review is driven by directorate of quality assurance principles, this study sought to establish the influence of ISO 9001:2008 quality management system on academic staff's service delivery in curriculum review.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section presents the research design, area of study, target population, sample and sampling techniques, instruments for data collection, data collection procedure and data analysis.

3.2 Research Design

The study used descriptive survey and correlational research designs. Descriptive research design involves collecting data in order to test or answer questions concerning the current status of the subject of the study. A descriptive study determines and reports the way things are without manipulation (Gay, 1987; Leeds & Ormonds, 2007). Descriptive research design is used in assessment of attitude, opinions, demographic information, conditions and procedures. Descriptive data are collected through a questionnaire, survey interviews and observation (Gay, 1987; Mugenda & Mugenda, 2003). The design is used to measure what already exists. Descriptive research at its best can provide very valuable data. It involves careful design and execution of each of the components of the research process, including the formulation of hypotheses, and may describe variables and relationships between variables. The statistics used in data analysis include frequency counts, percentages, means and Pearson's Product Moment Correlation coefficient. This research design was suitable because it allowed the study to use questionnaires, interviews and observation. It also allowed use of descriptive statistics to analyze quantitative data in order to establish the influence of ISO 9001:2008 quality management system on academic staff's service delivery in public universities.

Correlational research design is sometimes treated as a type of descriptive research design, primarily because it does describe an existing condition (Gay, 1987; Borg & Gall, 2003; Best, 1977). However, the condition it describes is distinctly different from the conditions described in self-report, interview or observational studies which is characteristic of descriptive research design. Correlational research design allows description in quantitative terms the degree to which variables are related. The design involves collecting data in order to determine whether, and to what degree, a relationship exists between two or more quantifiable variables. Degree of relationship is expressed as a correlation coefficient. A relationship does not imply “causes.”

Regardless of whether a relationship is a cause – effect relationship, the existence of a high relationship permits prediction (Gay, 1987; Best, 1977; Leeds & Ormonds, 2007) Correlation design provides an estimate of just how related two variables are. If two variables are highly related, a correlation coefficient near +1.00 (or -1.00) will be obtained; if two variables are not related a coefficient near .00 will be obtained. The more highly related two variables are the more accurate are predictions based on their relationship. Correlation research design allows regression analysis. This design was suitable because the study was on influence of ISO 9001:2008 QMS on academic staff’s service delivery in public universities.

3.3 Area of Study

The study was carried out in University “E” and University “F” of Kenya (Appendix I). University E was established in 1991 and became a fully fledged university in the year 2000. University F was established through legal Notice No. 373 of 5th December, 2002. It became

a fully-fledged University in 2006. The two universities are among the 14 public universities in Kenya that were ISO 9001:2008 certified between 2009 and 2014. Both universities E and F were chosen as the site for the study because they had the highest number of complaints raised by the teaching staff under the various variables such as examination processing procedures, curriculum review, teaching process, teaching facilities and processing of University Continuous Assessment tests. Thus complaints by some academic staff in public universities in Kenya on the impact of ISO 9001:2008 Quality Management Systems had casted doubt on their level of satisfaction with it based on non conformities. For instance between 2012 and 2015 university F recorded 2100 non-conformities and university E recorded 2300 non-conformities which were higher than other Universities that recorded below 1820. In examination processing procedures, in curriculum review process the non conformities recorded were 270 and 280; in teaching process 340 and 380, in provision of quality teaching /learning facilities 1200 and 1100 respectively (Table 1.1).

3.4 Target Population

The target population for this study was 759 academic staff consisting of 420 from university E and 333 from university F, 2 management representatives and 4 student leaders from both universities. (Universities “E” and “F” 2016). Management representatives were in charge of ISO 9001:2008 quality management systems in the universities. In university “E” the management representative was the registrar in charge of administration, finance and development. He was responsible for ISO 9001:2008 QMS implementation in the university. In university “F” the Deputy Vice Chancellor in charge of administration and finance was responsible for ISO 9001:2008 QMS implementation. Students’ leaders were the chairman and the secretary general of the student council for universities “E” and “F.” The justification

for choice of academic staff was that they are the ones whose function are teaching; setting and managing examinations, recommending and selecting the teaching/learning facilities and participating in curriculum review. These four variables are the core functions of universities in the realization of achieving the three roles of universities, namely teaching, research and community service. Management representative on the other hand were the heads of ISO 9001:2008 directorate at the university level while the students leaders were the key stakeholders who were representatives of students (customers) that is, students are the key recipients of the services. The student leaders represent the entire student body and they are responsible for gathering data on the quality of services offered to them in the universities and therefore they are well placed in responding to matters pertaining to service delivery. It is for this reason that they are the official representatives of the students in the university senate.

3.5. Sample Size and Sampling Techniques

The sample size for academic staff was determined by Fisher's model (Mugenda & Mugenda, 2003).

$$nf = \frac{n}{\left(1 + \frac{n}{N}\right)}$$

Where:

nf - is the desired sample size (when the population is less than 10,000

n- is the desired sample size (When the population is more than 10,000) in this case 384

N- is the estimate of the population size.

The sample size was therefore determined as follows;

Academic staff

$$nf = \frac{384}{\left(1 + \frac{384}{753}\right)}$$

$$nf = \frac{384}{1.50996}$$

$$nf = 254$$

The sample size was proportionately distributed to two universities as follows:

Step I

$$\frac{254}{753} \times 100 = 33.73\%$$

Step II

University E

$$\frac{33.73}{100} \times 420 = 142$$

University F

$$\frac{33.73}{100} \times 333 = 112$$

All the two management representatives and four student leaders constituted their sample sizes respectively.

The sample sizes used in the study were as shown in Table 3.1.

Table 3.1

Sample Frame

University	Category of Respondents	Target Population	Sample Size
E	Academic staff	420	142
	Management representative	1	1
	Student leaders	2	2
F	Academic staff	333	112
	Management representative	1	1
	Student leaders	2	2
Total		759	260

Saturated sampling was used to select the four (4) student leaders and the two (2) management representatives from the two public universities. Purposive sampling was used to select the in charge of ISO audit in each department. At most two academic members of the department were randomly chosen to participate. The justification for this approach was that these are the respondents that were highly conversant with ISO 9001:2008 QMS in the universities.

3.6. Data Collection Instruments

The instruments that were used to collect data were questionnaire, interview schedules, observation guide and document analysis guide. Primary data was collected using both open and closed ended questions on a 5-point rating scale which addressed the objectives of the study. Gray (1996) explains that descriptive data are usually collected through questionnaire

while Cohen and Manion (1998) have positively identified questionnaire as crucial instruments of data collection in a descriptive research. The researcher also used in-depth interview to get the nitty-gritty information from the management representatives of ISO 9001:2008 in the two universities. Documents on ISO 9001:2008 such as reports on ISO 9001:2008 audit by the two Universities were used.

3.6.1 Academic Staff's Questionnaire (ASQ)

The questionnaire were structured to provide information on ISO 9001:2008 quality management systems on academic staff's service delivery in teaching, management of examinations, quality teaching and learning facilities and curriculum review in public universities (Appendix A).

3.6.2 Interview Schedule for Management Representatives and Students leaders

In-depth interview was used to collect information on ISO 9001:2008 quality management systems on academic staff's service delivery in teaching, management of examinations, quality teaching and learning facilities and curriculum review in public universities (Appendix B). The respondents who were interviewed were management representatives and student leaders.

3.6.3 Observation Guide (OG)

The researcher used the observation guide (Appendix C) to collect information on ISO 9001:2008 quality management systems on academic staff's service delivery in teaching, management of examinations, quality teaching and learning facilities and curriculum review in public universities.

3.6.4 Document Analysis Guide (DAG)

Document Analysis Guide was used to collect information on ISO 9001:2008 quality management systems on academic staff's service delivery in teaching, management of examinations, quality teaching and learning facilities and curriculum review in public universities (Appendix D).

3.7. Validity of the Instruments

Validity is the degree to which the results obtained from data actually represent the phenomenon under study (Silverman, 2008; Mugenda & Mugenda, 2003; Gay, 1987). According to Joppe (2000), validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. Face and content validity ensures that there is a logical link between the independent and dependent variables as depicted by research hypothesis. Kumar (2011) observes that face and content validity are crucial in ensuring that each question or item on the sub scale have a logical link with an objective of the study.

Zamanzader, Ghahramanian, Rassonli, Abbaszadeh, Adavimajd, and Nikanfar (2015) indicate that 6 to 10 experts is the number adequate that can be used in determining face and content validity. Face validity also known as logical validity is a simple form of validity where a superficial assessment of whether or not the instrument can measure what it is supposed to measure. That is, it is "face value" where one just skims the surface in order to form an opinion. It is the easiest form of validity to apply to research. It is criticized as the weakest form of validity.

Content validity is the degree to which an instrument has an appropriate sample of items for the construct being measured and is an important procedure in scale development. Content validity is determined by experts in the realm of study by obtaining content validity index. To obtain content validity index for relevancy and clarity of each item (I-CVIs) the number of those who judged the items as relevant and clear (ratings 3 and 4) was divided by the number of experts.

$$\text{Formula CVI} = \frac{A}{N}$$

Where A = is the number of experts who rated the items as relevant and clear (3 and 4)

N = the number of experts in a panel.

I- CVI expresses the proportion of agreement on the relevancy of each item which is between zero and one. The ratings of one and two (1 and 2) means the item is not relevant. The ratings of 3 and 4 means that the items are relevant and clear. If all items are judged as relevant the CVI equals 1. If the CVI is higher than 0.79 the item will be appropriate. If it is between .7 and .79 it needs revision and if it is less than .70 it is eliminated. In this study 9 experts were used and the results were as shown in Table 3.2.

Table 3.2

Expert Ratings of Items

Sub scale	Number of Experts who rated 3 and 4	Number of Experts who rated 1 and 2	Total number of experts	Content Validity Index
Questionnaire for academic staff	8	1	9	.89
Interview schedule for academic staff and student leaders	7	2	9	.78
Observation schedule	8	1	9	.89
Document Analysis Guide	8	1	9	.89

From Table 3.2 it can be observed that Content Validity Index for academic staff was .89, Interview Schedule .78, Observation schedule .89 and Document Analysis Guide .89. This results show that the instruments were valid.

3.8. Reliability of Instruments

Reliability of instruments is the degree to which the instruments measure consistently the variables under study, that is, the findings are independent of accidental circumstances of the research (Silverman, 2008). To ascertain the reliability of staff questionnaires, interview schedules, observation guide and document analysis guide, a pilot study was conducted. Yaseen (2015) observes that a pilot study is a small scale preliminary study conducted in order to evaluate the feasibility in an attempt to improve upon the study design upon prior to

performance of a full scale. The pilot involved 75 academic staff from universities “E” and “F” who were consequently not used in the study. Mugenda and Mugenda (2003) observe that in a pilot study 1% to 10% of the target population is adequate for a pilot study. In order to improve reliability of interview guides, observation guides and document analysis guides, the corrected items that were either ambiguous or displayed difficulty in being understood by the respondents were included in the final drafts.

With regard to questionnaires, reliability was tested by being assessed for internal consistency – the degree to which items or constructs that make up the scale “hang together” or support one another. This was computed using Cronbach’s alpha. Thus the reliability of the multi –items or constructs for all scales were computed. The results were as shown in Table 3.3.

Table 3.3**Internal consistence of constructs in the Academic Questionnaire**

Scale	Number of Items	Cronbach's Alpha	Cronbach's Alpha based on standardized items
Teaching	12	.720	.709
Provision of teaching facilities	11	.927	.934
Management of Examination	10	.900	.882
Curriculum Review	10	.905	.908
Non conformities in teaching	8	.899	.891
Non conformities in provision of teaching facilities	8	.709	.712
Non conformities in management of examination	6	.870	.878
Non conformities in curriculum review	5	.750	.728

From Table 3.3 it can be observed that all independent and dependent variables in all, scales had coefficients greater than .7. Therefore Cronbach's test revealed that all the items in the

subscales were reliable. This means that the items supported one another and therefore correlated with the total scale. On the same note, it can be stated that internal consistence for the scales in the questionnaire was established to be adequate enough for the study.

3.9. Data Collection Procedures

The researcher sought and obtained the research permit for carrying out the study in the two Universities from the National Council for Science, Technology and Innovation (NACOSTI) through the Dean, School of Graduate Studies, Maseno University (Appendix H). Letters notifying the Management representatives of the universities of the intended study were sent to them in two weeks before the researcher visited the universities in order for the respondents to prepare and set aside time for the researcher to collect data. The researcher personally visited the two Universities to administer the questionnaires, make observations and conduct interviews. The respondents were assured of confidentiality and anonymity in reporting the findings of the study. The questionnaire were administered to 254 respondents and collected two weeks from the dates of issuance. The process took two months.

Interviews were conducted for one month and the respondents were two Management Representatives in charge of ISO 9001:2008 QMS and four student leaders from Universities E and F. During the interviews, observations were made and document analysis guide (Appendix D) was used to collect data on the status of ISO 9001:2008 QMS status based on the existing documentation on ISO 9001:2008 QMS audits in the departments. Interviews took about 45 minutes with each respondent and another 40 minutes to 1.5 hours for each observation. The interviews and document analysis guided focused on the areas of teaching, management of examinations, provision of quality teaching and learning facilities and

curriculum review. The study focused on evidence of quality requirements by the institution and the state. For instance CUE has prescribed standards in all these areas and the universities have set requirements that departments should meet. Therefore under ISO 9001:2008 QMS these standards should be met. Failure to meet these requirements denotes non-conformities. Therefore non-conformities is a measure of ISO 9001:2008 QMS. The less the non conformities the higher the status of ISO 9001:2008 QMS of the institution and vice versa. Therefore it is the non conformities that influence the quality of service delivery. For instance if departments fail to adhere to CUE and external examiners advice in management of examinations, service delivery in management of examinations will decline in terms of quality, hence in observing the influence of ISO 9001:2008 QMS on academic staff's service delivery, non conformities are used.

3.10. Data Analysis

The data collected was both quantitative and qualitative in nature, hence quantitative and qualitative approaches were used in analysis of data.

3.10.1 Quantitative Data Analysis

Descriptive and inferential statistics were used to analyze quantitative data. First the responses in the questionnaire were assigned numerical values. This was done to closed-ended questions. In order to reduce the mass of data, five point rating scale was used in measurement of variables, namely; influence of ISO 9001:2008 QMS and status of dependent variables. All numerical numbers representing responses from the questionnaires were transferred to code sheet, then entered into the computer and analyzed by use of SPSS version 22. Specifically, quantitative data was analyzed using descriptive statistics in form of

frequency counts, percentages, means and inferential statistics in form of regression analysis (Table 3.4).

Descriptive statistics were used in this study because in data analysis the first step is to describe, or summarize the data. This is because descriptive statistics permit the researcher to meaningfully describe many scores with a small number of indices. Such indices are calculated for a sample drawn from a population, which was the case for this study. The types of statistics that were used were frequency counts, percentages and means, being measures of central tendency, measures of variability, measures of relationship, and measures of relative position (Gay, 1987). Measures of central tendency are used to determine the typical or average scores; measures of variability indicate how spread out a group of scores are; measures of relationship indicate to what degree two sets of scores are related; and measures of relative position describe a subject's performance compared to performance of all other subjects. In essence all these measures were the subjects of this study. Furthermore, it is important to note that descriptive statistics were the precursor of regression analysis of data. Descriptive statistics present the state of affairs without manipulation and therefore objective.

With regard to ISO 9001:2008 status the non conformities qualitative data was converted into interval scale type data using a 5 point rating scale whereby non conformities tending towards opportunities for improvement were rated as 1 = Very Low Non conformities (very minor), 2 = Low non conformity (minor), 3 = Moderate non conformities (major), 4 = High Non conformities (Tending towards putting on hold continued use of ISO 9001:2008 QMS certification) and 5 = Very High non conformities (will definitely put on hold use of ISO

9001:2008 certification if not immediately corrected). This was based on secondary data in audit report for each of the 91 departments.

The data was provided by the in charge of audit in every department. Non conformities were used because they were indicators used to determine continued certification of ISO 9001:2008 for the institutions. When more than three major non conformities are recorded certification can be put on hold. To determine the status of service delivery in each department, the in charge of ISO: 2008 audit and two to three members of the department rated service delivery on a five point rating scale meaning rating of the two or three respondents' responses were computed to give a mean rating of each department for every category of service delivery. These mean ratings were then used in regression analysis.

Inferential statistics deal with inferences or generalization about a population based on the behaviour of samples. Sample values such as the mean, coefficients are referred to as statistics. The types of inferential statistics used include regression analysis; Regression analysis (model summary) specifically coefficient of determination was used to establish the variations in dependent variables that were accounted by the independent variable. These revealed the degree to which the independent variables influenced the dependent variables.

Analysis of Variance was used to establish whether the independent variables were significantly predictors of the influence of the dependent variables. This was important to decide on whether compute linear regression analysis so as to generate a model that can be used in prediction.

Linear regression analysis was computed so as to generate regression equation that can be used as a prediction model. Thus prediction model allows for generalization of studies of similar paradigms or phenomenon.

Table 3.4
Quantitative Data Analysis Matrix

Objective	Independent Variable	Dependent Variable	Analytical tool
To establish the influence of ISO 9001:2008 quality management system on teaching process.	ISO 9001:2008 QMS	Academic staff's service delivery in relation to teaching process.	Descriptive statistics Regression analysis ANOVA
To determine the influence of ISO 9001:2008 quality management system on management of examinations.	ISO 9001:2008 QMS	Academic staff's service delivery in relation to management of examinations.	Descriptive statistics Regression analysis ANOVA
To determine influence of ISO 9001:2008 quality management system on provision of quality teaching/learning facilities.	ISO 9001:2008 QMS	Academic staff's service delivery in relation to provision of quality teaching/learning facilities.	Descriptive statistics Regression analysis ANOVA
To establish the influence of ISO 9001:2008 quality management system on curriculum review	ISO 9001:2008 QMS	Academic staff's service delivery in relation to curriculum review.	Descriptive statistics Regression analysis ANOVA

The hypotheses were tested at the 95% confidence level (5% of significance). When p-value was less than .05, the null hypothesis was rejected but when the p-value obtained was greater than .05, the null hypothesis was accepted. For regression analysis to be computed, it was necessary to establish the normality and homoscedasticity of the data. The results of the diagnostic test were as shown in Table 3.5.

Table 3.5

Normality Test of Data for the variables

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Teaching	.117	254	.082	.945	254	.059
Teaching Facilities	.114	254	.084	.959	254	.079
Curriculum Review	.128	254	.057	.948	254	.061
Exam Procedures	.155	254	.058	.939	254	.058
Non Conformities in Teaching	.191	254	.101	.839	254	.061
Non Conformities in management of examinations	.203	254	.080	.879	254	.072
Non Conformities in provision of teaching facilities	.275	254	.060	.809	254	.056
Non Conformities in Curriculum Review	.216	254	.091	.894	254	.073

From Table 3.4 both Kolmogorov Smirnov and Shapiro –Wick tests were not significant ($p > .05$) in all the variables, indicating that data in each subscale were normally distributed. Similarly, residual scatter plots which provide a visual examination of the assumption of

homoscedasticity between the predicted dependent variable scores and the errors of prediction were plotted for the dependent and independent variables (Appendix F). They indicate a random displacement of scores that take on a rectangular shape with no definite clustering or systematic pattern. This suggests that the assumption of homoscedasticity was not violated. Hence the regression analysis was used in the analysis because it assumes that data is normally distributed.

3.10.2 Qualitative Data Analysis

Thematic analysis is a method of identifying and analyzing pattern in qualitative data (Clarke & Braun, 2013). Clarke and Braun's (2013) six steps in thematic analysis were used.

Step one, familiarization with data and this enabled the researcher to immerse and become intimately familiar with the written data in form of notes that were taken during interviews.

Step two, coding was done. Through this pithy labels were generated for important features of data relevant for broad research question guiding the analysis. Coding helped in data reduction by capturing both semantic and conceptual reading of data. Thus all data items from interviews were coded and collated using their codes and relevant data extracts.

Step three, searching of themes was done. Themes were constructed from coded data and then collated all the coded data relevant to each theme.

Fourth step was reviewing of themes. This was done by checking that the themes "work" in relation to both the coded extracts and the full data set. The researcher reflected on whether the themes expressed a convincing and compelling story about the data. The nature of each

individual theme and the relationship between the themes was defined. In some cases two themes were collapsed together and at times a theme was split into two or more themes.

Step five, themes were defined and renamed. Detailed analysis of each theme was written by identifying the “essence” of each theme and constructing a concise, punchy and informative name for each theme.

Step six, the researcher did a write up by weaving together the narrative and vivid data extracts in order to provide the coherent and persuasive information about the data, and contextualizing it in relation to existing literature.

In a nutshell, data collected from interviews was analyzed for content as themes and sub themes emerged on an ongoing process. The researcher categorized all the responses according to research objectives. Open -ended questions responses were included in the study as qualitative data. Official documents on ISO 9001:2008 QMS, audit reports were examined and the information observed revealed in the note book. The sample excerpts, themes and subthemes were as shown in Table 3.6.

Table 3.6**Qualitative Analysis of Data Matrix**

Transcript	Themes /Sub themes	Codes
Indeed ISO 9001:2008 QMS has boosted teaching in our university due to improved documentation pertaining to teaching, such as course outline (Lecturer 10)	Teaching	T
ISO 9001:2008 QMS has improved teaching as the lecturers prepare course outlines in advance and issue them to students to guide them (Lecturer 40/ Student leader 1)	Teaching Course outline	T C O
Our libraries are well stocked with relevant books and e-journals due to ISO 9001:2008 QMS certification (Lecturer 11// Student leader 2)	Teaching /learning facilities Library	T /LF L
In response to ISO 9001:2008 QMS certification, CATS are well prepared and administered to all registered students (Lecturer 7)	Management of Examinations CATs	MOE CATs
In response to ISO 9001:2008 quality management system certification requirements, examinations are internally and externally moderated. Examinations are marked, moderated, approved by senate, and released in time to students via students portal. (Lecturer 11)	Management of examinations Semester examinations	MOE SE
In response to large number of students leading to shortage of chairs, lecture rooms, computers, library space, poor lighting and ventilation; and in response to ISO 9001:2008 QMS certification, the university has put in place maintenance policy and asset inventory. And during this financial year the university has budgeted	Provision of Quality Teaching and Learning facilities Chairs Computers	QT/LF C Comp

for purchase of additional facilities to cater for the deficit (Lecturer 15)	Library space Lecture rooms	LS LR
In response to CUE requirements and in compliance ISO 9001:2008 QMS certification the university is reviewing academic programmes across the schools. In fact in the schools of medicine due to ISO 9001:2008 QMS, the curriculum offered will make the graduate very competitive. (Lecturer 21)	Curriculum Review School of Medicine	CR SoM
In order to comply with CUE requirements, the university has reviewed academic programmes in Engineering. This has enabled the Engineers Board of Kenya to approve some of the Engineering programmes offered by the university courtesy of ISO 9001:2008 QMS certification (Lecturer 6)	Curriculum Review Engineering Programme	CR EP

3.11 Ethical Considerations

First, the research permit was sought and obtained from NACOSTI (Appendix H) as a state requirement by law. In conducting the study, the researcher ensured utmost confidentiality of the respondents. No inducements were given to any individual in order to solicit information. The researcher sought informed consent from the participants before they took part in the study. The researcher respected individual autonomy as the respondents in the study were given freedom to decide on whether to participate in the study or not. Those who agreed to participate in the study were assured of their freedom to withdraw from the study without giving prior explanations to the researcher. Fortunately all respondents including those who were hesitant agreed to participate. The respondents were assured of access to the research findings once the study was concluded and bound for use.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This section presents demographic characteristics of the respondents, results and discussion of the findings of the study. The study objectives were to:

- i) Establish the influence of ISO 9001:2008 Quality Management System on Academic Staff's Service Delivery in Teaching in Public Universities.
- ii) Determine the influence of ISO 9001:2008 Quality Management System on Academic Staff's Service delivery in Management of Examinations in Public Universities.
- iii) Establish the influence of ISO 9001:2008 Quality Management System on Academic Staff's Service Delivery in Provision of quality teaching/ learning facilities in public universities.
- iv) Determine the influence of ISO 9001:2008 Quality Management System on academic staff's service delivery in curriculum review in public universities.

4.2 Return Rate of Questionnaires

Table 4.1: Return Rate of Questionnaires

Respondents	Number Issued	Number returned	Percentage
University E Lecturers	142	142	100
University F lecturers	112	112	100

Source: Field Data 2016

From Table 4.1, it can be noted that the return rate of questionnaire was 100%. This means that they were adequate for analysis of data. Thus according to Mugenda and Mugenda (2003) a response rate of 50% is adequate for analysis and reporting. A response rate of 60% is good and a response rate of 70% and over is very good. In essence these figures serve as guidelines, otherwise a response rate of 100% is the best because it is a representative sample for meaningful generalizations. Since the response rate was 100%, it means the results of this study are generalizable.

4.3 Institution Data

The institution data for the universities that were used as the site of the study were as shown in Table 4.2.

Table 4.2: Institution Data

Institution	Number of Schools	Number of Academic Departments
University E	11	55
University F	11	36

Source: Field Data 2016

From Table 4.2, it can be noted that universities had schools and departments. It is important to note that an “institution” is defined as an organization founded for purpose of university education and research. “Public university” means a university established and maintained or assisted out of public funds. “Academic staff” means any person who has been appointed to teach, train or to do research at a university. “Department” means an academic division into

which a faculty or school is divided for purposes of teaching, examinations and administration. “Curriculum” means any documented programme of study. “Faculty /school” means an academic division so designed or established under the instruments constituting a university (Ministry of Education, Science and Technology, 2014).

Examination on the other hand means an official test that reveals a student knowledge or ability in a particular subject. There are two types of examinations formative and summative evaluations. Formative evaluation are examinations or tests administered in the course of study while summative evaluation are examinations administered at the end of the course /semester. The purpose of examination is fourfold; one, examinations are used to diagnose the strengths and weaknesses of students; two, to inform students of progress in the curriculum; three, help in grading or classifying students, and four, to help in selecting students into correct career and programmes for further studies. Thus without good examinations, an education system can collapse and put the country’s development scorecard into disarray.

4.4 ISO 9001:2008 QMS Status Based on Departmental Audit Report in sampled Public Universities in Kenya (n=91) 2014/2015

In order to establish the influence of ISO 9001:2008 QMS on academic staff’s service delivery in public universities in Kenya data on ISO 9001:2008 QMS status was first established from the departmental audit report using document analysis guide. The results were as shown in Table 4.3.

Table 4.3**Data on ISO 9001:2008 QMS Status Based on Departmental Audit Report (n=91)
2014/2015**

S/N	Non Conformities- Curriculum Review	Non Conformities- Teaching Facilities	Non Conformities- Exam Processing	Non Conformities- Teaching
1	1.8	1.78	1.67	2.75
2	1.2	1.61	2.41	1.89
3	1.6	1.33	1.5	1.64
4	1.6	2.2	1.33	1.64
5	2.2	1.67	1.52	2.51
6	1.6	1.56	1.51	1.57
7	1.4	1.78	1.69	1.56
8	1.6	2.42	1.81	1.5
9	2.2	1.88	2.34	1.85
10	2.4	2.44	2.32	2.11
11	1.2	1.67	1.82	1.75
12	1.6	2.1	1.33	1.62
13	2.2	1.77	1.56	2.32
14	1.2	1.56	1.67	1.36
15	1.4	1.33	1.71	1.38
16	1.4	2.89	1.81	2.14
17	2.1	2.44	2.34	2.05
18	1.6	1.33	1.5	1.63
19	1.2	1.67	1.84	1.75
20	1.6	1.67	1.67	1.64
21	1.6	1.33	1.5	1.63
22	1.2	1.56	2.21	1.88
23	1.2	1.67	1.82	1.77
24	2.1	2.3	2.33	1.86
25	2	2.45	2.31	2.04
26	1.6	2.44	1.82	1.5
27	1.6	2.44	1.8	1.51
28	1.8	1.78	1.67	2.78
29	1.6	2.2	1.33	1.64

30	1.6	1.66	1.5	1.54
31	1.4	1.56	1.33	1.35
32	1.7	2.4	1.33	1.61
33	1.2	1.67	1.84	1.75
34	1.1	1.56	2.21	1.89
35	2.2	2.44	2.33	2.44
36	2.3	1.67	2.34	1.88
37	1.4	2.89	1.83	2.14
38	1.3	1.56	1.67	1.36
39	1.6	1.66	1.52	1.51
40	1.6	1.56	1.52	1.54
41	1.3	1.56	1.67	1.41
42	1.2	1.56	1.67	1.38
43	2.4	1.74	1.54	2.40
44	1.5	1.67	1.66	1.63
45	1.2	1.7	1.84	1.77
46	1.2	1.56	2.31	1.86
47	2.3	1.33	2.31	1.86
48	1.6	2.42	1.81	1.54
49	1.4	2.89	1.84	2.12
50	1.6	2.1	1.32	1.62
51	2.2	2.43	2.33	2.01
52	2.3	1.62	1.52	2.21
53	1.8	1.81	1.67	2.74
54	1.6	2.43	1.83	1.54
55	1.4	1.78	1.69	1.5
56	1.2	1.56	1.67	1.38
57	1.3	2.85	1.84	2.12
58	1.2	1.58	1.69	1.35
59	1.5	2.33	1.31	1.62
60	1.2	1.65	1.82	1.76
61	2.3	1.67	1.52	2.34
62	1.7	1.72	1.67	2.76
63	1.6	2.15	1.32	1.64

64	2.1	2.43	2.32	2.31
65	1.3	2.89	1.81	2.13
66	1.6	1.56	1.51	1.52
67	1.3	1.57	2.43	1.88
68	1.4	1.56	1.34	1.38
69	1.2	2.44	1.65	1.36
70	2.1	1.78	2.34	1.88
71	1.7	1.33	1.54	1.63
72	1.3	1.56	1.34	1.38
73	1.6	1.67	1.54	1.53
74	1.7	1.68	1.67	1.63
75	1.6	1.33	1.54	1.63
76	1.8	1.78	1.67	2.75
77	2.2	1.68	2.34	1.87
78	1.6	1.72	1.67	1.63
79	1.2	1.81	1.68	1.5
80	1.3	1.57	1.67	1.39
81	1.8	2.42	1.83	1.54
81	1.4	1.79	1.69	1.36
82	1.2	1.68	1.84	1.76
83	2.1	2.43	2.33	2.23
84	1.6	2.42	1.82	1.54
85	1.4	1.78	1.55	1.55
86	2.1	1.69	1.55	2.21
88	1.2	1.56	2.41	1.88
90	1.4	1.56	1.33	1.38
91	1.3	1.78	1.68	1.53

From Table 4.3 it can be observed that the status of ISO 9001:2008 QMS varied from one variable to another. With regard to teaching the audit reports revealed that non conformities were low across the departments. This means that the conformities were high. The implication was that preparation of course outlines, allocation of workload, quality teaching

and timetabling were in line with ISO 9001:2008 QMS requirements. This audit reports were expected to have an impact on subsequent teaching activities, hence the need for this study to establish the influence.

In reference to management of examinations, that is, management of examinations, that is, management of CATs, semester examination, setting and moderation of examination items, adherence to external examiners reports, marking and processing of examinations at all levels were rated low between 1.45 and 2.44. This means that the conformity was high. Similarly, this implies that the university was putting efforts to survive by the ISO 9001:2008 QMS certification. However, the influence ISO 9001:2008 QMS had on management of examinations was not documented. This was the task of this study.

With regard to provision of teaching /learning facilities audit reports revealed a low non conformity. An indication that conformity was high with respect to furniture in tuition blocks offices, workshops, laboratories, computer labs and libraries. It also meant that universities are live to the fact that textbooks, reference books and other educational resources are vital in universities in their endeavors to teach, conduct research and provide community service.

With regard to curriculum review the non-conformities were high meaning that conformity was low. This means that curriculum review was not being taken seriously. The reviews are supported to be regular, however since curriculum are normally broad, the frequency of review cannot be as high as in case of teaching examination management and provision of teaching /learning facilities.

The data on ISO 9001:2008 QMS status based on departmental audit report 2014/2015 was analyzed for each of the four variables namely; teaching, management of examinations, provision of teaching /learning facilities and curriculum review. The results were as shown in Tables 4.4, 4.9, 4.14 and 4.19. This was to enable determination of the influence of ISO 9001:2008 QMS on the academic staff's service delivery in public universities based on the objective.

4.5 Influence of ISO 9001:2008 Quality Management System on Academic Staffs' Service Delivery in Teaching in Public Universities

The research question responded to was: What is the influence of ISO 9001:2008 quality management systems on academic staff's service delivery in teaching in public universities? To respond to this question the null-hypothesis: ISO 9001:2008 has no significant influence on academic staffs' service delivery in teaching in public universities in Kenya, was generated. In this respect the audited data on ISO 9001:2008 quality management system status in the public universities (Table 4.4) and status of teaching service (Table 4.5) were used in regression analysis to establish the influence.

Table 4.4

Status of ISO 9001:2008 Quality Management Systems in Teaching in Public Universities (2014/2015 academic year)

Level of Non conformity in Teaching (Ratings)	Frequency	Percentage
1.00 -1.44	14	15.40
1.45 -2.44	71	78.00
2.45 -3.44	06	6.60
3.45 -4.44	00	00
4.44 -5.00	00	00
Total	91	100

Source: Field Data 2016

Interpretation of Mean Rating

Numeric strength	Practical strength
1.00 -1.44	Very Low non conformity
1.45 -2.44	Low non conformity
2.45 - 3.44	Moderate non conformity
3.45 – 4.44	High non conformity
4.45 - 5.00	Very High non conformity

The areas of focus that were audited were; course outlines, allocation of workload, timetables, quality of course outlines, student attendance, staff class attendance, internship and lecture notes. Majority 71(78%) respondents provided evidence that showed that teaching non conformities in university teaching were low, 6(6.6%) as moderate while 14(15.4%) as very low. These results meant that in all audited areas, the standards were not

fully met for the academic years 2015/2016. Observation results based on audit report pertaining to non conformities in teaching were quite informative. Thus, the non-conformities in course outlines included absence of learning outcomes, core reference, text books, time allocation among others. Nevertheless, observation revealed that quite a number of lecturers strived to meet the targets. With regard to allocation of workload, there were no supporting documents, that is, departmental minutes. A few departments however had minutes to this effect. Documentation of student attendance of lectures and practicals were scanty, particularly for large classes of over 90 students. In some cases class representatives seemed not to care about the documentation. Nevertheless, for self sponsored students programmes, class attendance register were somewhat maintained. This was attributed to the fact that lecturers were paid in addition to normal salary provided they produced evidence for having taught these self sponsored students programmes, privately sponsored students were also eager to sign the attendance registers. Staff class attendance similarly seemed not to have been taken seriously as some documents did not bear signatures of course lecturers. Lecture notes were hardly documented except practical manuals. This was attributed to the fact that lecture notes were continually reviewed to tally with the regular curriculum reviews. Internship was well documented and non conformities were low.

Status of teaching after certification of ISO 9001:2008 QMS was established by use of rating scale and the results were as shown as shown in Table 4.5.

Table 4.5

Status of teaching after ISO 9001:2008 QMS Certification in Public Universities in 2015 /2016 academic Year

Level of Teaching (Ratings)	Frequency	Percentage
1.00 -1.44	0	0
1.45 -2.44	0	0
2.45 -3.44	33	36.26
3.45 -4.44	49	53.85
4.44 -5.00	09	9.89
Total	254	100

Source: Field Data 2016

Interpretation of Mean Rating

Numeric strength	Practical strength
1.00 -1.44	Poor
1.45 -2.44	Below Average
2.45 – 3.44	Average
3.45 – 4.44	Good
4.45 - 5.00	Very good

The areas of focus were course allocation, quantity and quality of instructional materials like text books, supervision of practical lessons, monitoring of lecture and practical attendance, research supports and workshops for improvement of academics and research skills, accessibility to timetables, availability of research grants, supervision of students on internship, engagement of the university in local and international linkages and partnerships, lecturing and lecture notes.

Majority 49(53.85%) of the respondents indicated that the status of teaching was good after ISO 9001:2008 quality management systems certification, 33(36.26%) rated the teaching as average while 9(9.89%) as very good. This means that ISO 9001:2008 certification had impacted positively on academic staff's service delivery in teaching.

Observation revealed that there were inadequacies in providing desired teaching at all levels due to shortages in textbooks in some areas of study such as Kiswahili, literature among others. Monitoring of lecture attendance by staff and students was also observed to be having challenges. The universities did not have audit departments to monitor their aspect of the curriculum. In some few cases though not common place practical were not being supervised 100% by technicians as required. Nevertheless, document analysis guide revealed that in almost all cases principles of teaching were being adhered to whereby use of textbooks and practical manual were embraced. This was in agreement with questionnaire finding.

To estimate the influence of ISO 9001:2008 quality management system on teaching, academic staff's service delivery in teaching, regression analysis was computed and the results were as shown in Table 4.6

Table 4.6**Influence of ISO 9001:2008 QMS on Academic Staffs' Service delivery in Teaching**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.435 ^a	.189	.180	.57208	.189	20.787	1	89	.000

a. Predictors: (Constant) ISO 9001:2008 Quality Management Systems

From Table 4.6, it can be noted that ISO 9001:2008 quality management system had significant influence on academic staff's service delivery in teaching as the p value was less than .05. The null hypothesis "ISO 9001:2008 quality management system has no significant influence on academic staff's service delivery in teaching" was rejected and therefore the alternative hypothesis H_{a1} "ISO 9001:2008 quality management system has significant influence on academic staff's service delivery in teaching" was accepted. It can also be observed that ISO 9001:2008 quality management systems accounted for 18% of the variation in academic staff's teaching services as signified by Adjusted R Square coefficient .180. This means that ISO 9001:2008 QMS explained eighteen percent (18%) of the variance in teaching service while 82% was due to others factors that were not subject to this study.

The interview findings pertaining to management representatives and student leaders concurred with those questionnaire findings that ISO 9001:2008 quality management system had improved the quality of teaching at the university. In this regard they asserted:

ISO 9001:2008 quality management systems has improved the teaching process as lecturers prepare course outlines in advance and avail them to students. The students are also guided by being given reference books and journals which are available in our well stocked library. Therefore the student cope well with lectures given by lecturers. Lecturers on the other hand remain focused in their lectures and students really appreciate the quality of lectures.

To determine whether ISO 9001:2008 quality management systems was a significant predictor, ANOVA was computed and the results were as in Table 4.7.

Table 4.7

ANOVA of ISO 9001:2008 QMS and academic staff's service delivery in teaching

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	6.803	1	6.803	20.787	.000 ^b
1	Residual	29.127	89	.327		
	Total	35.930	90			

a) Dependent Variable: Academic Staff's Service delivery in Teaching

b) Predictors: (Constant) ISO 9001:2008 Quality Management Systems

From Table 4.7 it can be noted that ISO 9001:2008 quality management systems was a significant predictor of the status of teaching service in public universities ($F(1,89) = 20.787$, $p < .05$). This means that ISO 9001:2008 significantly influenced the status of teaching services in public universities in Kenya.

To determine the actual influence of ISO -9001:2008 quality management systems on the status of teaching services in public universities linear regression analysis was computed (Table 4.8).

Table 4.8

Coefficients: Linear Regression analysis of ISO 9001:2008 Quality Management Systems and academic staff's service delivery in Teaching

Model		Unstandardized		Standardized	t	Sig.	95.0% Confidence	
		Coefficients		Coefficients			Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.978	.296		16.807	.000	4.389	5.566
		-.738	.162	-.435	-4.559	.000	-1.1060	-.416

a) Dependent Variable: Academic Staff's Service delivery in Teaching

$$\text{Regression Equation} = Y = B_0 + B_1X_1 + \dots + \varepsilon$$

From Table 4.8 it can be noted that, for every one unit increase in non conformities in service delivery in teaching reduced by .738 units as signified by the coefficient .738. The regression equation is $Y = 4.978 + .738X_1$. Conversely for every one unit reduction in non conformities in teaching service, status of teaching improved by .738 units.

Example

When X_1 is rated at 2.75 and later reduces to 1.35, the predictions will be as follows:

$$\begin{aligned} \text{Example i) } Y &= 4.978 + (-.738 \times 2.75) \\ &= 4.978 - 2.0295 \\ &= 2.9485 \\ &= 2.95 \end{aligned}$$

This means that when the non conformities are 2.75 (rated as moderate) academic service delivery in teaching will be 2.95 (rated as average).

$$\begin{aligned} \text{Example ii) } Y &= 4.978 + (-.738 \times 1.35) \\ &= 4.978 - 0.9963 \\ &= 3.9817 \\ &= 3.98 \end{aligned}$$

This means that when non-conformities is reduced to 1.35 (rated as very low) the academic staff's service delivery in teaching will improve to 3.98 (rated as good). Y is the dependent variable namely academic staff's service delivery in teaching. The model can therefore be used in prediction of academic staff's service delivery in teaching in public universities (Appendix E).

Universities in Kenya have provided financial support for the implementation of international organization for standardization ISO 9001:2008, commonly known as ISO 9001:2008. This approach was adopted from Western or developed countries. For instance since the early 1990's a number of education and training institutions in Europe have obtained ISO 9001:2008 certificates (Heires, 2008). The investment has always been necessitated by the fact that ISO certification had implementation promotes the standards and quality of services and goods that institutions offer to their customers, and /or clients. The main objective of ISO certification is to increase credibility and trust of an organization. In essence ISO 9001:2008 quality management systems is focused on meeting customer expectations and delivering customer satisfaction.

Basically what ISO 9001:2008 quality management systems helps, is to evaluate whether quality management system is appropriate and effective while informing identification and implementation of improvements. In fact continuous improvement assures customers benefit by receiving services and products that meet their requirements. Internally, universities benefit from increased satisfaction, morale, reduced operational costs and increased efficiency. Although ISO 9001:2008 will be obsolete in September 2018 and be replaced by

ISO 9001:2015, its impact in organizations' improvement worldwide remains a major benefit, only upon which ISO 9001: 2015 will rest as a standard and help organizations to grow and meet their demands while providing customer satisfaction.

With regard to influence of ISO 9001:2008 quality management systems on teaching service in universities the study established that indeed teaching was significantly influenced. The universities endeavoured to ensure that lecturers were allocated on average three courses. Such workload was good enough as it allowed lecturers to effectively conduct their courses to the satisfaction of students who are the primary customers. Furthermore, lecturers were also satisfied as they were also able to play the two other roles, namely research and community service. Lecturers find it fulfilling when they provide the services to their customers in the three realms of operation. In fact generation of knowledge and development of skills to deal with emerging challenges, issues and problems is the preserve and priority for university lecturers. Provision of instructional materials as set out in the framework of quality management system after ISO 9001:2008 QMS certification makes it easy and comfortable for both lecturers, students and support staff to operate and achieve the desired results. This is much more so because the persons involved are focused and there is mutual trust and confidence. In fact learning resource centres in educational institutions of this calibre are considered to be the heartbeat of the organizations. These materials encourage independent scholarship a quality that is desired at university level.

The requirements that students be supervised and attendance of classes continually registered as provided for in the quality management system framework that should be met under the ISO 9001:2008 QMS, has enhanced customer satisfaction and credibility in public

universities. This is because the required contact hours are met for the programs offered. Research support and workshops for improvement of academics' research skills has remained on course courtesy of ISO 9001:2008 quality management systems. Universities prioritize research and is one of the must condition for upward mobility of staff. Without research there cannot be generation of knowledge, developing and sharpening of skills in the current world that is yearning for creativity and innovation.

The tendency to adhere to course outlines and timetables, motivated by ISO 9001:2008 quality management systems ensures good coordination and reduction in operational costs with great benefit to customers. Thus only about 20% of the effort and resources is utilized with the outcome of 80% while guaranteeing quality in services and products. Ideally coordination is central to excellent performance of organizations. Efficiency and effectiveness of organizations is highly dependent on coordination as envisaged in ISO 9001:2008 quality management systems.

With ISO 9001:2008 quality management systems in place universities have endeavoured to attract grants /funds, conducted internship with dignity and engaged local and international linkages and partnership within the professional demands. The partnerships and linkages are the pillars of universities that uphold their growth development and vibrancy. Thus the study established that ISO 9001:2008 quality management systems was a significant predictor of quality teaching services in public universities.

The findings of this study concur with those of Sohail, Rajadurai and Rahman (2003) who established that ISO 9001:2008 QMS is used as one of the indicators for providing quality education. This is vital because universities are expected to demonstrate consistently in their

ability to provide products that meet expectation of customers and at the same time adhere to statutory requirements. These findings also concur with those of Vusa (2016) in a study titled “ISO 9001:2008 quality management systems certification and service quality in Kenyan public universities: A case of the University of Nairobi.” In this study Vusa (2016) established that there was a strong relationship between ISO 9001:2008 QMS and service quality ($r = .871$). The adjusted R square was .696 which means that ISO 9001:2008 QMS accounted for 69.6% of the variation in service quality. Vusa’s (2016) study also established that ISO 9001:2008 QMS was a significant predictor of service quality ($F(8, 83) = 1.389$, $p < .05$). This means that the study established that indeed ISO 9001:2008 QMS influenced service quality in the university.

Martinez – Mediano and Diaz (2014) in their study “contributions of the quality management systems ISO 9001 in schools organizations and its results” in Spain with a focus on the influence of the quality management system ISO 9001 through indicators of efficiency, effectiveness, results and satisfaction established that improvement in quality of education, school organization and teacher training was associated with the use of quality management system ISO 9001 among other models. They assert that ISO 9001 quality management system promotes improvement in curriculum design and its implementation, and its results in students’ achievement, customer satisfaction, that is teachers, students and families. They further emphasize that international studies have indicated that adopting ISO in schools has advantages such as improvement of teaching and learning standards, improvement in management processes and documentation, adoption of strategies of continuous improvement and fault prevention rather than correction among other things. (Supradith Na Ayudhya, 2001).

Sang Hoon Bae (2007) found out that ISO provided a positive influence in school achievements through better functioning of essential operations thereof. Aristizabal, Cardenas, Buitrago and Martin (2009) found out that ISO 9001 contributed to improvements on the formative processes that in turn, have a positive impact on student learning and teachers' satisfaction. In addition it improves the image of the organization and enhances systematization of managerial processes.

In a Spanish educational context, just like in Kenyan universities context, Hnegun, Larek, Sola and Aramendi (2009) attribute success to the adoption ISO; quality management, improvement in institutional projects and teacher training as well as increment in the educational community satisfaction. Perez Juste (2005) adds that truly ISO are relevant as an effective way to develop quality educational projects and to improve the quality of educational institutions.

4.6 Influence of ISO 9001:2008 Quality Management System on Academic Staffs'

Service in Management of Examinations in Public Universities

The research hypothesis responded to was: ISO 9001:2008 quality management system has no significant influence on academic staff's service delivery in management of examinations in public universities. To determine the influence of ISO 9001:2008 quality management systems on academic staff's service delivery in management of examinations, data on status of ISO 9001:2008 quality management systems was factored in regression analysis with data on status of management of examinations after institutions had been ISO 9001:2008 quality management systems certified.

Table 4.9

Status of ISO 9001:2008 Quality Management System in management of examinations in Public Universities 2014 /2015 Academic year

Level of Non conformity in Management of Examinations (Ratings)	Frequency	Percentage
1.00 -1.44	10	10.99
1.45 -2.44	81	89.01
2.45 -3.44	00	00
3.45 -4.44	00	00
4.45 -5.00	00	00
Total	91	100

Source: Field Data 2016

Interpretation of Mean Rating

Numeric strength	Practical strength
1.00 -1.44	Very Low non conformity
1.45 -2.44	Low non conformity
2.45 – 3.44	Moderate non conformity
3.45 – 4.44	High non conformity
4.45 - 5.00	Very High non conformity

The areas of focus were Continuous Assessment Tests items, semester examinations, marking schemes, External examination reports, Examination scripts and minutes of examination moderation committees. Majority 81(89.01%) indicated based on audit reports that non conformities in academic staff’s service delivery in management of examinations were low while 10(10.99%) indicated that the non conformities were very low.

Document analysis guide research supported questionnaire finding. For instance the record of Continuous Assessment Tests, semester examination result, marking guide, external examination report, examination scripts and minutes of moderation of examinations were available indicating issues raised and how they were addressed to minimize non conformities. Observation guide also supported these findings. Examination process was live to the fact that staff meeting in progress were spotted going on and dispatching and receiving of examinations to and from external examiners.

This means that academics staff's strived to meet the ISO 9001:2008 quality management systems standards. Non conformities were noted in areas of Continuous Assessment tests, where missing marks were unexplained in a few departments, in some cases poor filing of examination reports was glaring. Keeping or storage of examinations scripts in some departments was in disarray. These non conformities normally make it difficult to retrieve scripts when need arises. Notwithstanding the non conformities, it was noted that on the whole service delivery was satisfactory. This then informed the status of ISO 9001:2008 quality management systems staff's service delivery in management of examinations.

Table 4.10

Status of Service delivery in Management of Examination after ISO 9001:2008 QMS

Certification in Public universities 2015 /2016 academic year

Level of Service delivery in Management of Examinations (Ratings)	Frequency	Percentage
1.00 -1.44	00	00
1.45 -2.44	00	00
2.45 -3.44	13	14.40
3.45 -4.44	59	64.80
4.45 -5.00	19	20.80
Total	91	100.00

Source: Field Data 2016

Interpretation of Mean Rating

Numeric strength	Practical strength
1.00 -1.44	Poor
1.45 -2.44	Below Average
2.45 – 3.44	Average
3.45 – 4.44	Good
4.45 - 5.00	Very good

The areas of focus were, procedures for preparation of examinations processing schedules, setting and moderation of examinations by departments, moderation of examinations by external examiners, coordination and administration of examinations by the Office of Registrar ASA as per the rules and regulations, coordination of administration and

coordination of examinations by internal examiners, approval of examinations in schedule by Senate, timely release of examination results to students, accessibility of examination results by students and strategies to avoid missing marks.

From Table 4.10, it can be noted that majority 59(64.80%) of the respondents rated academic staff's service delivery in management of examinations as good, 19(20.80%) as very good, while 13(14.40%) as average. Complaints were raised in the areas of accessibility to examination results, missing marks and eradication of cheating in examinations. Notwithstanding the con conformities observed it was generally noted that ISO 9001:2008 quality management systems had positively influenced service delivery in management of examinations.

To estimate the influence of ISO 9001:2008 quality management systems on academic staffs service delivery in management of examinations, regression analysis was computed and the results were as shown in Table 4.11.

Table 4.11

Influence of ISO 9001: 2008 Quality Management System on Academic Staff's Service delivery in management of examinations in public universities

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.389 ^a	.151	.142	.53148	.151	15.882	1	89	.000

a. Predictors: (Constant), ISO 9001:2008 Quality Management Systems

From Table 4.11, it can be noted that ISO 9001:2008 quality management system had significant influence on academic staff's service delivery in management of examinations in public universities as the p value was less than .05. The null hypothesis "ISO 9001:2008 quality management system has no significant influence on academic staff's service delivery in management of examinations in public universities was rejected and therefore the alternative hypothesis H_{a1} ISO 9001:2008 quality management system has significant influence on academic staff's service delivery in management of examinations in public universities was accepted. It can be observed that ISO 9001:2008 quality management systems accounted for 14.2% of the variation in academic staff's service delivery in management of examinations as signified by the Adjusted R Square coefficient .142. This means that ISO 9001:2008 explained 14.2% of the variance in academic staff's service delivery in management of examinations while 85.8% was due to other factors that were not subject of this study.

The interview findings pertaining to management representatives and student leaders agreed with these empirical findings. Thus they categorically stated:

Continuous Assessment Tests are set in advance and administered to all registered students. Our examinations are internally and externally moderated as per the CUE ISO 9001:2008 QMS and Quality Assurance requirement. The examinations are marked by internal examiners, moderated by the external examiners. They are then compiled and presented to departments and schools for approval and then senate approves before the results are released to students portal. The cases of missing marks are addressed at departmental level by internal examiners who are course lecturers.

To determine whether ISO 9001:2008 QMS was a significant predictor of academic staff's service delivery in management of examinations, ANOVA was computed and the results were as shown in Table 4.12.

Table 4.12

ANOVA of ISO 9001:2008 Quality Management Systems and Academic Staffs Service delivery in Management of Examinations

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	4.486	1	4.486	15.882	.000 ^b
1	Residual	25.140	89	.282		
	Total	29.626	90			

a. Dependent Variable: Academic Staff's service delivery in Management of Examinations

b. Predictors: (Constant) ISO 9001:2008 Quality Management Systems

From Table 4.12, it can be observed that ISO 9001:2008 QMS was a significant predictor of academic staffs service delivery in management of examinations ($F(1,89) = 15.882, P < .05$).

This means that ISO 9001:2008 quality management systems indeed did influence academic staff's service delivery in management of examinations.

To determine the actual influence of ISO 9001:2008 quality management systems on academic staffs service delivery in management of examinations, linear regression analysis was computed (Table 4.13).

Table 4.13

Linear Regression analysis of ISO 9001:2008 QMS and Academic Staffs Service delivery in Management of Examinations

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	5.168	.309		16.731	.000	4.554	5.781
1 ISO 9001:2008 QMS in Examination Processing	-.689	.173	-.389	-3.985	.000	-1.032	-.345

a. Dependent Variable: Management of Examinations

$$\text{Regression Equation } Y = B_0 + B_1X_1 + \dots + \epsilon$$

From Table 4.13, it can be observed that, for every one unit increase in non-conformities in management of examinations, service delivery in management declined by .689 units as signified by the coefficient -.689 The regression equation is $Y = 5.168 + (-.689X_1)$.

Conversely, for every one unit reduction in non conformities in management of examinations, academic staff’s service delivery in management of examinations improved by .689. This means that ISO 9001:2008 QMS when adhered to improved management of examinations in public universities.

Examples:

When X_1 is rated at 2.33 and later reduces to 1.33 the predictions will be as follows:

$$\begin{aligned} \text{Example i) } Y &= 5.168 + (-.689 \times 2.33) \\ &= 5.168 - 1.60537 \\ &= 3.56263 \\ &= 3.56 \end{aligned}$$

This means that when the non conformities are 2.33 (rated as low) academic service delivery in management of examinations is 3.56 (rated as average).

$$\begin{aligned}\text{Example ii) } Y &= 5.168 + (-.689 \times 1.33) \\ &= 5.168 - .91637 \\ &= 4.5163 \\ &= 4.25\end{aligned}$$

This means that when non-conformities are reduced to 1.33 (rated as very low) the academic staff's service delivery in management of examinations will improve to 4.25 (rated as good). Y is the dependent variable namely academic staff's service delivery in management of examinations. The model can therefore be used in prediction of academic staff's service delivery in management of examinations in public universities.

Examinations whether at primary school level or university level elicit mixed reactions from all and sundry. To some examinations are a blessing while to others, it is a curse. In any university programme, the most discussed subject is examination. Examination is a major component of any given curriculum. This is because examinations have fourfold functions. One, it is an instrument that is used to measure acquisition of the desired knowledge, skills and attitudes or simply competencies that each curriculum intends to achieve. Two examinations are means by which students' progress is measured at each level of education. Thus students are informed of the progress they make in college. Examinations also help to diagnose strengths and weaknesses among students academically. Three, examinations are used to classify or grade students. Classification is important as students have diverse talents and skills that need to be identified for them to exploit and use them in development of society and the whole world at large. Four, examinations are used as an instrument to select

students into different careers and occupations. It is important also to note that passing examinations is a passport to good life. It is as such used to break many vicious circles. For instance, vicious indiscipline, illiteracy, immorality corruption and so on.

In view of the foregoing, academic staff's service delivery in management of examinations is very important. Service delivery in management of examinations is satisfying only when students and staff enjoy participating in it. Thus, it is satisfying when the entire examination process is handled carefully and prudently by the academic staff. This then makes institutions to meet institution and statutory requirements. Cheating in examinations is highly degrading both to academic staff and students. Thus it is devastating and has led to self inflicted injury and death of students and academic staff apart from through assaults, intimidation and depression. In support of these findings, Zhang, Su, Peng, Yang and Cheng_(2011) in their study titled examination anxiety induces significant blood pressure and Heart rate increase in college students investigated the relationship between the anxiety and blood pressure and Heart rate increase in per-examination period, using 64 college students found that high blood pressure increased gradually. Thus all students completed the self-rating anxiety score questionnaire. Strong positive correlations were found between the self-rating anxiety score blood pressure and heart rate in examination period. The correlations were significant at the p-value of 0.05. Definitely if examinations are well managed as prescribed then anxiety can be kept low with positive results for students. In this respect, ISO 9001:2008 quality management systems is a model that is vital and must be reducing cases of anxiety among students. This is because the study established that it significantly improved academic staff's service delivery in management of examinations.

Hughes (2007) in his study titled examination and stress, Blood pressure assessments in college students also underscores the concerns on examinations in lives of college students. The study established the fact that factors such as fear of failure, impeding examinations and academic ability promote stress and depression among college students. Examinations that are well managed can be of value to the college students and the entire institutions as they are bound to be void of stress.

When the desired service delivery in management of examinations is achieved with minimal non conformities, cheating is reduced. Ruto (2011) concurs with this assertion when in their study found that cheating in examinations was motivated by poor preparation for examinations, confusion and other factors that make students to enter examination rooms with written papers, phones among other factors. In essence failure to adhere to examination guidelines is a serious non conformity according to ISO 9001:2008 quality management systems.

Bichanga and Kimani (2013) further to underscore the role of ISO 9001:2008 quality management systems certification in reducing non conformities in management of examinations among other areas of focus. Specifically, they assert that all universities should seek for ISO 9001:2008 quality management systems certification and streamline their processes which include enrolment processes, payment services, registration, hostels allocation, medical services, time table and examination results. This means that really ISO 9001:2008 quality management systems influences service delivery in management of examinations. Non conformities pertaining to examination management that ISO 9001:2008 quality management systems seeks to eradicate include; large number of students in

examination rooms, poor sitting arrangement in examination rooms, reduced quality of external examinations due to large numbers of students coupled with less number of days allocated to external examinations process, missing marks lower quality of examination; otherwise examination management process in all public universities was well documented.

4.7 Influence of ISO 9001:2008 Quality Management System on Academic Staffs' Service Delivery in Provision of Quality Teaching/ Learning Facilities in Public Universities

In order to establish the influence of ISO 9001:2008 QMS on academic staff's service delivery in provision of quality teaching /learning facilities the null hypothesis, "ISO 9001:2008 QMS has no significant influence on academic staff's service delivery in provision of quality teaching /learning facilities in public universities" was generated. Data on status ISO 9001:2008 QMS after certification (Table 4.14) and status of quality teaching /learning facilities (Table 4.15) were used in the computation.

Table 4.14**Status of ISO 9001:2008 QMS in relation to Teaching /Learning Facilities in Public****Universities 2014 /2015 Academic Year**

Level of Non conformity in Provision of Quality Teaching /learning Facilities (Ratings)	Frequency	Percentage
1.00 -1.44	7	7.7
1.45 -2.44	78	85.7
2.45 -3.44	06	6.6
3.45 -4.44	00	00
4.45 -5.00	00	00
Total	91	100.00

Source: Field Data 2016**Interpretation of Mean Rating**

Numeric strength	Practical strength
1.00 -1.44	Very Low non conformity
1.45 -2.44	Low non conformity
2.45 – 3.44	Moderate non conformity
3.45 – 4.44	High non conformity
4.45 - 5.00	Very High non conformity

From Table 4.14, it can be observed that the non conformities in provision of quality teaching /learning facilities were majorly low as majority 78(85.7%) rated them as low, 6(6.6%) as moderate while 7(7.7%) as very low. The areas of focus or indicators were

furniture in the lecture halls, office space, office computers, office furniture, library space, library books, and library furniture.

Table 4.15

Status of Provision of Quality Teaching /Learning Facilities after ISO 9001:2008 QMS Certification in Public Universities 2015 /2016 Academic year

Provision of Quality Teaching /Learning Facilities (Ratings)	Frequency	Percentage
1.00 -1.44	00	00
1.45 -2.44	10	10.99
2.45 -3.44	36	39.56
3.45 -4.44	30	32.97
4.45 -5.00	15	16.48
Total	91	100.00

Source: Field Data 2016

Interpretation of Mean Rating

Numeric strength	Practical strength
1.00 -1.44	Poor
1.45 -2.44	Below Average
2.45 – 3.44	Average
3.45 – 4.44	Good
4.45 - 5.00	Very good

From Table 4.15 it can be noted that provision of quality teaching /learning resources was rated good by 30 (32.97%), as average, by 36(39.56%) as below average, by 10(10.99%) and as very good by 15(16.48%). The areas of focus were provision of library space, book/

student ratio, toilets and washrooms, copies of textbooks per title, lighting in lecture rooms, lighting in offices, computers in offices, conditions of lecture rooms and office spaces, office space, furniture in lecture room and offices. Observation revealed that the quality of teaching /learning facilities provided was generally good. However, there were few cases of decaying conditions of building such as peeling paint, crumbling plaster, and non functioning toilet, poor lighting, inadequate ventilation and in operating temperature control systems that affected the learning as well as the morale of some staffs and students to some extent.

Regression analysis was computed to establish the influence of ISO 9001:2008 QMS on academic staff's service delivery in provision of quality teaching /learning facilities in public universities. The results were as shown in Table 4.16.

Table 4.16

Regression analysis of the influence of ISO 9001:2008 QMS in Provision of Quality Teaching/ Learning Facilities in Public Universities

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.336 ^a	.113	.103	.72255	.113	11.347	1	89	.001

a. Predictors: (Constant), ISO 9001:2008 Quality Management Systems

From Table 4.16, it can be noted that ISO 9001:2008 quality management system had significant influence on Academic Staff's Service Delivery in Provision of Quality Teaching/ Learning Facilities in Public Universities as the p value was less than .05. The null hypothesis "ISO 9001:2008 quality management system has no significant influence on

academic staff's service delivery in provision of quality teaching/learning facilities in public universities was rejected and therefore the alternative hypothesis H_{a1} ISO 9001:2008 quality management system has significant influence on academic staff's service delivery in provision of quality teaching/learning facilities in public universities was accepted. It can also be observed that ISO 9001:2008 QMS accounted for 10.3% of the variation in the provision of quality teaching /learning facilities in public universities. This was signified by the Adjusted R Square coefficient .103. The other 89.7% was due to other factors that were not the subject of this study.

During interviews the interviewees stated ISO 9001:2008 QMS had improved the provision of quality teaching /learning facilities. Thus:

In response to ISO 9001:2008 QMS and Quality Assurance requirements, the university has put in place maintenance policy and asset inventory to alleviate the insufficient or shortage of chairs, tables, computers, library books and space, lecture rooms and their accessories due to the large enrolment. In fact during this financial year the university has budgeted for purchase of additional facilities to cater for the deficit.

To determine whether ISO 9001:2008 QMS was a significant predictor of academic staff's service delivery in provision of quality teaching /learning facilities in public universities, ANOVA was computed and the results were as shown in Table 4.17.

Table 4.17

ANOVA of ISO 9001:2008 QMS and the Provision of quality teaching /learning facilities in public universities

Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	5.924	1	5.924	11.347	.001 ^b
	Residual	46.465	89	.522		
	Total	52.389	90			

a. Dependent Variable: Teaching learning Facilities

b. Predictors: (Constant), ISO 9001:2008 Quality Management Systems

From Table 4.17, it can be noted that ISO 9001:2008 QMS was a significant predictor of provision of quality teaching /learning facilities in public universities ($F(1, 89) = 11.347$, $P < 0.05$). This means that ISO 9001:2008 QMS can be relied upon to predict the provision of quality teaching /learning facilities in public universities.

To determine the actual influence of ISO 9001:2008 QMS on the provision of quality teaching /learning facilities in public universities, linear regression analysis was computed.

The results were as shown in Table 4.18.

Table 4.18**Linear Regression Analysis of the influence of ISO 9001:2008 QMS on the Provision of Quality Teaching /Learning Facilities in Public Universities**

Model	Unstandardized		Standardized	t	Sig.	95.0% Confidence	
	Coefficients		Coefficients			Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	4.680	.353		13.246	.000	3.978	5.382
1 ISO 9001:2008 QMS in Teaching/learning Facilities	-.617	.183	-.336	-3.369	.001	-.981	-.253

a. Dependent Variable: Teaching learning Facilities Regression Equation $Y = B_0 + B_1X_1 + \dots + \varepsilon$

From Table 4.18, it can be observed that for every one unit increase in non conformities in the provision of quality teaching /learning facilities, provision of quality teaching /learning facilities declined by .617 units as signified by the coefficient -.617. Conversely for every one unit reduction in non conformities in the provision of quality teaching /learning facilities, the provision of quality teaching /learning facilities improved by .617 units. The regression equation is $Y = 4.680 + -.617X_1$. These results support the fact that quality teaching /learning facilities are a basic requirement for establishing a university just like any other institution of learning. This means that value addition to quality teaching /learning facilities translate to better learning outcomes. It is for this reason that teaching /learning facilities are a requirement in ISO 9001:2008 QMS certification in universities. Good teaching /learning facilities are important preconditions for better student learning provided that other conditions are present that support a strong academic programme. A growing body of

research has established a positive link between student achievement and behaviour; and teaching /learning facilities (Ahawo, Simatwa & Yalo, 2015; Ahawo, Simatwa & Gidudu 2017).

These results indicate that ISO 9001:2008 QMS certification of public universities has really enhanced provision of quality teaching learning facilities. These findings concur with those of Vusa (2016) in a study entitled ISO 9001:2008 quality management system certification and service delivery in Kenyan public universities: A case study of the university of Nairobi, who established that ISO 9001:2008 quality management system enhanced quality service delivery in many dimensions such as customer focus, leadership involvement of people process approach, systems approach and decision making. These dimensions have a link to provision of quality teaching /learning resources. That is ISO 9001:2008 quality management system guide or form a basis for good decision making systems approach, customer focus and involvement of people in providing the desired quality teaching /learning facilities. In fact during the interviews, interviewees were unanimous on the fact that ISO 9001:2008 had guided university managements in making good decisions in providing the desired quality teaching /learning facilities in all departments and schools. In this respect the management representatives and student leaders stated:

ISO 9001:2008 QMS was awake up call upon university leadership /management to equip universities with the right teaching learning facilities. Having been ISO certified universities are struggling to improve standards by complying with the set requirements. All professional courses, be they medicine, Architecture, teaching engineering, nursing among others have the responsibility of providing quality training as this can only be achieved by use of quality teaching /learning facilities supported by other factors such as highly qualified academic staff, and support staff.

These findings also agree with those of Ali and Ensar (2014) who established that ISO 9001:2008 quality management systems enhanced the establishment and accreditation of Star University. This is majorly because ISO 9001:2008 QMS was used in meeting the requirements that led to accreditation. In this research quality was dealt with as a part of standards that was important in fulfilling the requirements.

The indicator used by Ali and Ensar (2014) are directly the product of provision of quality teaching /learning facilities studied by Vusa (2016) who attests to these findings. Indeed with quality teaching /learning facilities passing rates, average grade, evaluation of staff by students, students' satisfaction and number of publications cannot be realized. To this end interviewees both management representatives and student leaders stated:

Provision of quality teaching /learning facilities in accordance with ISO 9001:2008 are requisites to pass rates. This is because they immensely enhances teaching /learning processes. This in turn positively influence student grades. Students use the teaching /learning facilities to evaluate their teaching by assessing how the teacher selects and uses these facilities. It is also commonplace to hear students praising or condemning the quality of teaching /learning facilities which is an indicator of their level of satisfaction. Similarly without provision of quality teaching /learning facilities lecturers at universities cannot effectively conduct research and publish research articles.

The new knowledge generated is the empirical evidence that ISO 9001:2008 improved provision of quality teaching /learning facilities which in turn enhanced pass rates, average grades, student satisfaction and increased publications by staff.

4.8 Influence of ISO 9001:2008 Quality Management System on Academic Staffs’ Service delivery in Curriculum Review in Public Universities

To establish the influence of ISO 9001:2008 quality management system on curriculum review in public universities, the null hypothesis: “ISO 9001:2008 quality management system has no significant influence on academic staffs’ service delivery in curriculum review” was generated. Further the status of ISO 9001:2008 quality management system after certification (Table 4.19) and status of curriculum review (Table 4.20) were computed.

Table 4.19

Status of ISO 9001:2008 Quality Management Systems in Public Universities 2014 /2015

Academic year

Level of Non conformity in Curriculum Review (Ratings)	Frequency	Percentage
1.00 -1.44	37	40.66
1.45 -2.44	54	59.34
2.45 -3.44	00	00
3.45 -4.44	00	00
4.45 -5.00	00	00
Total	91	100.00

Source: Field Data, 2016

Interpretation of Mean Rating

Numeric strength	Practical strength
1.00 -1.44	Very Low non conformity
1.45 -2.44	Low non conformity

2.45 – 3.44	Moderate non conformity
3.45 – 4.44	High non conformity
4.45 - 5.00	Very High non conformity

From Table 4.19, it can be observed that the level of non conformities in Curriculum Review were majorly low as indicated by 54 (59.34%) and very low as indicated by 37(40.66%). This means that with regard to Curriculum Review compliance to the requirements of ISO 9001:2008 QMS was high in public universities. It also means that public universities were adhering to the prescribed ISO 9001:2008 QMS. The areas of focus or indicators were memos or circulars on curriculum reviews, minutes of curriculum reviews, old curriculum, new curriculum and approval of programmes and courses by senate and CUE.

Table 4.20

Status of Curriculum Review after ISO 9001:2008 Quality Management System Certification in Public Universities 2015 /2016 Academic year

Curriculum Review (Ratings)	Frequency	Percentage
1.00 -1.44	00	00
1.45 -2.44	00	00
2.45 -3.44	10	10.98
3.45 -4.44	69	75.82
4.45 -5.00	12	13.20
Total	91	100.00

Source: Field Data 2016

Interpretation of Mean Rating

Numeric strength	Practical strength
1.00 -1.44	Very Low non conformity
1.45 -2.44	Low non conformity
2.45 – 3.44	Moderate non conformity
3.45 – 4.44	High non conformity
4.45 - 5.00	Very High non conformity

From Table 4.20 it can be noted that non conformities in Curriculum Review after ISO 9001:2008 QMS certification was rated high by 69(75.82%) respondents, as moderate by 10(10.98%) and as very high by 12(13.20%) respondents. The areas of focus were; formal procedures and timetable for periodic evaluation of curriculum; implementation of memos on curriculum review; involvement of lecturers in curriculum development; approval, monitoring and evaluation of the curriculum, implementation of Commission for University Education recommendations; submission of new programmes and courses to senate and CUE for approval; approval of academic programme by senate and CUE before implementation.

Observation analysis guide concurred with questionnaire finding whereby it was clear that curriculum review was periodically undertaken and submitted to senate for approval and Commission for University Education before implementation.

Regression analysis was computed to establish the influence of ISO 9001:2008 QMS on Curriculum Review in public universities. The results were as shown in Table 4.21.

Table 4.21

Regression Analysis of ISO 9001:2008 Quality Management System on Curriculum

Review

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Change	F Change	df1	df2	Sig. F Change
1	.293 ^a	.086	.076	.54048	.086	8.388	1	89	.005

a. Predictors: (Constant), ISO 9001:2008 QMS

From Table 4.21, it can be noted that ISO 9001:2008 quality management system had significant influence on Academic Staff's Service Delivery in Curriculum Review in Public Universities as the p-value was less than .05. The null hypothesis "ISO 9001:2008 quality management system has no significant influence on academic staff's service delivery in Curriculum Review in public universities was rejected and therefore the alternative hypothesis H_{a1} ISO 9001:2008 quality management system has significant influence on academic staff's service delivery in Curriculum Review in public universities was accepted. It can also be observed that ISO 9001:2008 QMS accounted for 7.6% of the variation in Curriculum Review as signified by the Adjusted R Square coefficient .076. This means that ISO 9001:2008 QMS explained 7.6% of the variance while 92.4% was due to other factors that were not subject of this study.

In agreement with these findings, during interviews, the management representatives stated:

In order to comply with Commission for Education and ISO 9001:2008 QMS requirements the university has reviewed academic programmes in all areas, be they medicine, engineering or economics. This has enabled the professional bodies, like the Engineers Board of Kenya to approve the programmes offered.

To establish whether ISO 9001:2008 QMS was a significant predictor of curriculum review ANOVA was computed and the results were as shown in Table 4.22.

Table 4.22

ANOVA of ISO 9001:2008 QMS and Curriculum Review

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	2.450	1	2.450	8.388	.005 ^b
	Residual	25.998	89	.292		
	Total	28.449	90			

a. Dependent Variable: Curriculum Review

b. Predictors: (Constant), ISO 9001:2008 QMS

From Table 4.22, it can be noted that ISO 9001:2008 QMS was a significant predictor of the quality of Curriculum Review in public universities ($F(1, 89) = 8.388, P > .05$). This means that ISO 9001:2008 QMS can be relied upon in predicting the quality of Curriculum Review. To establish the actual influence of ISO 9001:2008 QMS on quality of Curriculum Review in public universities, linear regression analysis was computed and the results were as shown in Table 4.23.

Table 4.23**Linear Regression Analysis of ISO 9001:2008 QMS on Curriculum Review**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	4.617	.269		17.165	.000	4.083	5.152
1							
ISO 9001:2008 QMS in Curriculum Review	-.479	.165	-.293	-2.896	.005	-.808	-.150

Dependent Variable: Curriculum Review Regression Equation $Y = B_0 + B_1X_1 + \dots + \varepsilon$

From Table 4.32, it can be noted that for every one unit increase in non conformities in Curriculum Review, the status of Curriculum review declined by .479 units as signified by the coefficient -.479. Conversely, for every one unit reduction in non conformities in Curriculum Review, the status of curriculum Review improved by .479 units. The Regression Equation is $Y = 4.617 + -.479X_1$. It is important to note that curriculum review entails evaluation of academic content taught in specific academic programmes with a view to, enhancing response to the needs and demands of communities for whom universities prepare graduates with skills and knowledge needed to compete globally. It is against this backdrop that universities were ISO 9001:2008 quality management system certified, whereby ISO 9001:2008 quality management system is viewed as a means of achieving quality curriculum.

Curriculum review in the context of ISO 9001:2008 quality management system is a response to a number of drivers or inherent demands on curriculum which are: changing nature of disciplines, avoiding duplication by rationalizing what is offered thereby reducing the assessment burden for staff and students, opportunity offered by new learning technologies, increasing cohort size, shifting students demographics, trends in students retention, progression and achievement, trends in student satisfaction surveys, changing expectations of professional statutory and regulatory bodies, outcomes of programme evaluations and original aims and outcomes of the programme having been lost over time.

The findings of this study therefore provide insight into the extent to which ISO 9001:2008 quality management system has influenced the response to the inherent demands on curriculum. In line with ISO 9001:2008 quality management system curriculum reviews are ongoing periodically as need arises. During interviews, interviewees stated:

Life is not static, neither are technologies nor challenges. The curriculum, that is, the lessons and academic subject matter taught in universities and other institutions of learning in specific academic programmes and courses are also subject to change. hence the need for a responsive mechanism. Many decades back, computer technology was unknown, today with scientific revolution, everything is being computerized and therefore the need for curriculum reviews. Curriculum reviews improve and sustain quality in education, by ensuring that it remains relevant to the ever-changing phenomenon in the world. It is a means of knowing where we are and where we want to move to. In essence the purpose of curriculum review is to improve student learning, engagement, experience and outcomes. To this end it is important to note that curriculum framework entails objectives, content, learning experiences and learning outcomes. ISO9001:2008quality management system therefore helps us to measure the extent to which the nitty gritty of curriculum framework is being achieved by way of improving on it.

The fact that influence was significant, and a prediction model was established, ISO 9001:2008 quality management system indeed influences curriculum reviews in public universities. This finding concur with those of Vusa (2016) who conducted a study titled “ISO 9001:2008 quality management system certification and service quality in Kenya and

public universities: a case of the University of Nairobi.”Vusa established that ISO 9001:2008 QMS highly influenced the quality of service in the university. The service referred to cuts across the entire university curriculum. It is worth noting that all services in the universities are angled in the curriculum offered. This study however did not provide empirical evidence specifically on the influence of ISO 9001:2008 QMS on curriculum review. This is the gap this study attempted to fill.

The new knowledge generated is the empirical evidence on the influence of ISO 9001:2008 QMS on curriculum review which culminated in a model that can be used to determine the influence of ISO 9001:2008 QMS on the nitty-gritty of the curriculum.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusion and recommendation of the study under the objectives of the study.

5.2 Summary of Findings

5.2.1 Influence of ISO 9001:2008 on Academic Staff's Service Delivery in Teaching in Public Universities

The study established that ISO 9001:2008 QMS accounted for 18% of the variation in lecturer's service delivery in teaching. ISO 9001:2008 QMS was a significant predictor of quality teaching in universities ($F(1, 89) = 20.787, <.05$). This means that ISO 9001:2008 QMS can be relied upon to predict the quality of teaching in universities. The regression equation is $\text{quality teaching} = 4.978 + (-.738X_1)$. That is for every one unit increase in ISO 9001:2008 QMS status teaching improved by .180 units. Interview findings concurred with these findings as the interviewee asserted that ISO 9001:2008 QMS had enhanced the quality of teaching in public universities.

5.2.2 Influence of ISO 9001:2008 on academic staff's service delivery in Management of Examinations in Public Universities

The study established that ISO 9001:2008 QMS accounted for 14.2% of variation in academic staffs services delivery in management of examinations in public universities. ISO 9001:2008 QMS was found to be a significant predictor of quality management of examinations ($F(1, 89) = 15.882, p<.05$) and had a prediction power of -.689 such that for

every one unit increase in ISO 9001:2008 QMS status management of examinations improved by .689 units. Regression Equation management of examinations = $5.168 + (-.689X_1)$. Interview findings and literature concurred with these findings as ISO 9001:2008 QMS was expressed as a catalyst element in examinations improvement.

5.2.3 Influence of ISO 9001:2008 on academic staff's service delivery in provision of quality Teaching /Learning Facilities in Public Universities

The study established that ISO 9001:2008 QMS influenced provision of quality teaching and learning facilities in public universities by 10.3% as was signified by the Adjusted R square coefficient .103. ISO 9001:2008 QMS was also found to be a significant predictor provision of quality teaching /learning facilities in public universities. ($F(1, 89) = 11.347, P < .05$). ISO 9001:2008 QMS has a prediction power of -.617 such that for every one unit increase in ISO 9001:2008 QMS status service delivery in provision of teaching /learning facilities reduced by .617 units. Regression Equation = $4.680 + (-.617X_1)$. Interview findings as interviewees asserted that in the recent past improvement in the provision of quality teaching /learning facilities was in response to ISO 9001:2008 QMS adherence.

5.2.4 Influence of ISO 9001:2008 QMS on Academic Staff's Service Delivery in Curriculum Review in Public universities

The study established that ISO 9001:2008 QMS accounted for 7.6% of the variance in curriculum review. The influence was significant and ISO 9001:2008 QMS was a significant predictor ($F(1, 89) = 8.388, P < .05$). For every one unit increase in ISO 9001:2008 QMS status, curriculum review activities improved by .479 units. Regression Equation is Curriculum Review = $4.617 + (-.479X_1)$. Interview findings concurred with these findings.

Interviewees expressed the fact that CUE and ISO 9001:2008 QMS coupled with Directorate of Quality Assurance have helped to improve curriculum review processes as institutional and state requirement.

5.3 Conclusion

The ISO 9001:2008 quality management system has positively influenced teaching in universities through academic staff's service delivery namely; courses allocation, course outlines, time tables, students lessons attendance, lecture notes, staff lesson attendance and internship. This has helped universities to increase their credibility, visibility and trust. Thus, there are marked improvement in teaching and learning standards, management processes and documentation and fault prevention rather than correction. ISO 9001:2008 quality management systems no doubt form a firm foundation for the ISO 9001:2015 quality management systems.

The ISO certification 9001:2008 quality management systems significantly influenced academic staff's service delivery in management of examinations in public universities. The non conformities in management of examinations were low. This means that compliance with the ISO 9001:2008 quality management systems requirement was high. The ISO certification by public universities has boosted their performance in management of examinations.

The ISO 9001:2008 QMS significantly influenced academic staff's service delivery in the provision of quality teaching/ learning facilities namely; provision of library space, book student ratio, toilets and washrooms, copies of textbooks per title, lighting in lecture rooms,

lighting in offices, computers in offices, conditions of lecture rooms and office spaces, office space, furniture in lecture room and offices. This helped universities to improve in public image and performance in teaching and research.

The ISO 9001:2008 QMS also significantly influenced academic staffs service delivery in curriculum review in terms of formal procedures and timetable for periodic evaluation of curriculum; implementation of memos on curriculum review; involvement of lecturers in curriculum development; approval, monitoring and evaluation of the curriculum, implementation of commission for university education recommendations; submission of new programmes and courses to senate and CUE for approval; approval of academic programme by senate and CUE before implementation. This improved service delivery in curricular activities.

5.4 Recommendations

- a) The gains made by adopting and implementing ISO 9001: 2008 quality management systems should be improved upon while adopting the ISO 9001:2015 quality management systems. All universities whether private or public should seek ISO certification to improve their standards of teaching as the study model suggests through empirical evidence.
- b) Public universities should endeavour to eradicate non conformities so as to improve compliance. This will improve on customer satisfaction and visibility of the universities. The areas that require urgent improvement on non conformities include management of formative evaluation which are commonly referred to as continuous assessment tests. Missing marks is another non conformity that need to be dealt with

- to improve the image of public universities. Syllabus coverage in setting of examinations should be improved upon so that measurement or assessment of students competencies are accurate for proper classification and placement.
- c) Public universities should endeavour to reduce the non conformities in the provision of quality teaching /learning facilities so as to enhance quality of education offered. This is because achievement in teaching research and curriculum development would be of high standards.
 - d) Public universities should strive to eliminate non conformities in curriculum review so that what is offered in academic programs meets the universities and regulatory bodies requirements for purposes of national development as universities as expected to provide the best.

5.5 Suggestions for Further Research

The study exposed the following areas that require further research.

- i) Perspective on university quality management systems by internal and external clients. This will provide the bigger picture of what the general public thinks and fee about management of quality university education.
- ii) Analysis of quality management system driving factors in universities. This will provide details on the real factors that influence QMS driving factors in universities.

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APPENDICES

APPENDIX A: QUESTIONNAIRE FOR ACADEMIC STAFF

The purpose of this questionnaire is to collect information on influence of ISO 9001:2008 quality management systems on academic staff's service delivery in public universities in Kenya from the academic staff in universities in Kenya. The Researcher is a PhD student at Maseno University in the department of Educational Management and Foundations. The information you give will be treated with the anonymity and confidentiality it deserves and will only be used for the purpose of this study.

Part A: Background Information

Please tick (✓) or fill in appropriately

1. What is your gender? Male [] Female []
2. What is your grade in the university?
Professor [] Associate Professor [] Senior Lecturer []
Lecturer [] Tutorial Fellow []
3. How long have you worked in this university? _____
4. What is your responsibility in university? _____
5. How long have you been an academic staff? _____
6. What is your role in the certification of the ISO 9001:2008 Quality Management System in your university?
 - i. Team Leader []
 - ii. Team Member []
 - iii. None []

Part B: Specific Information

a). Teaching

Using the 5-point rating scale, based on your knowledge and experience please tick appropriately your rating on the following statements which best describe the status of teaching services after ISO 9001:2008 QMS certification of institution Where 1 = Very Low, 2 = Low, 3 = Moderate, 4 = High 5 = Very High

	Aspect of Teaching	1	2	3	4	5
1	Course allocation/workload for undergraduate students					
2	Quantity and quality of instructional materials e.g. course books and references					
3	Supervision of practical lessons of students.					
4	Monitoring of students attendance of lectures and tutorials.					
5	Research support and workshops for improvement of academics research skills.					
6	Provision of course outlines					
7	Accessibility of timetable					
8	Availability of research grants					
9	Supervision of students on attachment, internship and teaching practice					
10	Engagement of the University in Local and international linkages/partnerships					
11	Lecturing					
12	Lecture notes					
	Any other (s) specify					

Any other important information

State:-----

b) Provision of Teaching/learning Facilities

Using the 5-point rating scale, based on your knowledge and experience please tick appropriately your rating on the following statements which best describe the status of teaching /learning facilities after ISO 9001 -2008 QMS certification of institution where; where; 1 = Very Low, 2 = Low, 3 = Moderate, 4 = High 5 = Very High

	Aspect of Teaching Facilities	1	2	3	4	5
1	Provision of library space					
2	Student –book ratio in the university					
3	Toilets /washrooms					
4	Copies of textbooks per title					
5	Lighting in lecture rooms and offices					
6	Computers in offices					
7	Ventilation in lecture rooms and library					
8	Adequacy of lecture rooms and furniture					
9	Condition of lecture rooms and furniture					
10	Core reference books					
11	Office space and furniture					
12	Any other (s) specify					

Any other important information specify-----

c) Curriculum Review

Using the 5-point rating scale, based on your knowledge and experience please tick appropriately your rating on the following statements which best describe the status of curriculum review after ISO 9001 -2008 QMS certification of institution where; 1 = Very Low, 2 = Low, 3 = Moderate, 4 = High 5 = Very High

	Aspect of Curriculum Review	1	2	3	4	5
1	Formal procedures and time-table for periodic evaluation of curriculum					
2	Implementation of memos on curriculum review					
3	Involvement of lecturers in curriculum development					
4	Quality assurance of all University programmes by Commission for university Education.					
5	Approval, monitoring and evaluation of the curriculum					
6	Implementation of the recommendations by the Commission of University Education.					
7	Submission of new programs and courses to Commission of University Education for approval /accreditation.					
8	Approval of academic programmes by senate and commission for university education					
9	Use of academic leaders in curriculum development					
10	Development of market driven curriculum					
	Any other (s) specify					

Any other important information specify-----

d). University Examination Processing Procedures

Using the 5-point rating scale, based on your knowledge and experience please tick appropriately your rating on the following statements which best describe management of examinations after ISO 9001 -2008 QMS certification of institution where; 1 = Very Low, 2 = Low, 3 = Moderate, 4 = High 5 = Very High

	Aspect of Examination Procedures	1	2	3	4	5
1	Procedures for preparation of examination processing schedules.					
2	Setting and moderation of examinations by departments					
3	Moderation of examinations by external examiners.					
4	Coordination of administration and conduct of examination by office of Registrar (AA) as per examination rules and regulations.					
5	Coordination of administration and conduct of examinations by the internal examiners.					
6	Implementation of the recommendations of the external examiners.					
7	Approval of examination schedules by senate.					
8	Timely release of examination results to students					
9	Accessibility of examination results by students					
10	Strategies to avoid missing marks					
	Any other (s) specify					

Any other important information specify-----

APPENDIX B

INTERVIEW SCHEDULE FOR MANAGEMENT REPRESENTATIVES AND STUDENT LEADERS

The respondents were asked to respond to the items listed below. Probing approach was used to solicit items from them.

1. What is the contribution of ISO 9001:2008 QMS to the university teaching process?
2. What is the contribution of ISO 9001:2008 QMS to provision of teaching/ learning facilities?
3. What are some of the academic programmes that have been reviewed after implementing ISO 9001:2008 QMS certification?
4. What is the contribution of ISO 9001:2008 QMS in the processing of University semester examinations?
5. What is the contribution of ISO 9001:2008 QMS in the preparation of University CATs?
6. What is the contribution of ISO 9001:2008 QMS on the general service delivery of the academic staff?
7. What are some of the academic programmes in your faculty /school that have been reviewed after ISO 9001:2008 QMS certification?

APPENDIX C

OBSERVATION SCHEDULE

Items to be observed	Remarks
Teaching facilities	
Lecture halls	
Lecture halls furniture	
Lecture halls white boards	
Office space	
Office Computers	
Office furniture	
Library space	
Library sections	
Library furniture	
Teaching materials	
Course outlines	
Allocation of workload	
Time Tables	
Quality of courses outlines	
Students attendance	
Staff class attendance	
Teaching practice activities	
Lecture notes	

University Examination processing	
CATs items	
Semester examinations	
Marking schemes	
External examinations reports	
Examination Scripts	
Minutes of exam moderation committee	
Curriculum Review	
Memos for curriculum reviews	
Minutes of committee reviews	
Old curriculum	
New curriculum	
Approval of programmes and courses	

APPENDIX D

DOCUMENT ANALYSIS GUIDE

Using a 5-point rating scale, rate the level of non-conformity of ISO 9001 -2008 QMS in your department based on the existing documentation on ISO 9001 -2008 QMS audit in your department for the academic year 2014/2015 where; 1 = Very Low Non conformities (Minor), 2 = Low non conformity (minor), 3 = Moderate non conformities (Major), 4 = High Non conformities (Tending towards putting on hold continued use of ISO 9001:2008 QMS certification) 5 = Very High non conformities) will definitely put on hold use of ISO 9001:2008 certification if not immediately corrected

	Documentation as per ISO 9001-2008 QMS	Rating				
		1	2	3	4	5
a)	Teaching					
1	Course outlines					
2	Allocation of workload					
3	Time Tables					
4	Quality of courses outlines					
5	Students attendance					
6	Staff class attendance					
7	Teaching practice activities/ internship					
8	Lecture notes					
b)	University Examination processing					
1	CATs items					
2	Semester examinations					
3	Marking schemes					
4	External examinations reports					
5	Examination Scripts					
6	Minutes of examination moderation committees					
c)	Curriculum Review					
1	Memos for curriculum reviews					
2	Minutes of committee reviews					

3	Old curriculum					
4	New curriculum					
5	Approval of programmes and courses					
d)	Teaching /learning facilities					
1	Lecture halls					
2	Furniture in lecture halls					
3	Lecture halls furniture					
4	Lecture halls white boards					
5	Office space					
6	Office Computers					
7	Office furniture					
8	Library space					
9	Library books					
10	Library furniture					

**APPENDIX E: DATA ON ISO 9001:2008 QMS STATUS BASED ON
DEPARTMENTAL AUDIT REPORT (n=91) 2014/2015**

S/N	Non Conformities- Curriculum Review	Non Conformities- Teaching Facilities	Non Conformities- Exam Processing	Non Conformities- Teaching
1	1.8	1.78	1.67	2.75
2	1.2	1.61	2.41	1.89
3	1.6	1.33	1.5	1.64
4	1.6	2.2	1.33	1.64
5	2.2	1.67	1.52	2.51
6	1.6	1.56	1.51	1.57
7	1.4	1.78	1.69	1.56
8	1.6	2.42	1.81	1.5
9	2.2	1.88	2.34	1.85
10	2.4	2.44	2.32	2.11
11	1.2	1.67	1.82	1.75
12	1.6	2.1	1.33	1.62
13	2.2	1.77	1.56	2.32
14	1.2	1.56	1.67	1.36
15	1.4	1.33	1.71	1.38
16	1.4	2.89	1.81	2.14
17	2.1	2.44	2.34	2.05
18	1.6	1.33	1.5	1.63
19	1.2	1.67	1.84	1.75
20	1.6	1.67	1.67	1.64
21	1.6	1.33	1.5	1.63
22	1.2	1.56	2.21	1.88
23	1.2	1.67	1.82	1.77
24	2.1	2.3	2.33	1.86
25	2	2.45	2.31	2.04
26	1.6	2.44	1.82	1.5
27	1.6	2.44	1.8	1.51
28	1.8	1.78	1.67	2.78
29	1.6	2.2	1.33	1.64
30	1.6	1.66	1.5	1.54
31	1.4	1.56	1.33	1.35
32	1.7	2.4	1.33	1.61
33	1.2	1.67	1.84	1.75
34	1.1	1.56	2.21	1.89
35	2.2	2.44	2.33	2.44
36	2.3	1.67	2.34	1.88
37	1.4	2.89	1.83	2.14
38	1.3	1.56	1.67	1.36
39	1.6	1.66	1.52	1.51
40	1.6	1.56	1.52	1.54
41	1.3	1.56	1.67	1.41
42	1.2	1.56	1.67	1.38
43	2.4	1.74	1.54	2.40
44	1.5	1.67	1.66	1.63

45	1.2	1.7	1.84	1.77
46	1.2	1.56	2.31	1.86
47	2.3	1.33	2.31	1.86
48	1.6	2.42	1.81	1.54
49	1.4	2.89	1.84	2.12
50	1.6	2.1	1.32	1.62
51	2.2	2.43	2.33	2.01
52	2.3	1.62	1.52	2.21
53	1.8	1.81	1.67	2.74
54	1.6	2.43	1.83	1.54
55	1.4	1.78	1.69	1.5
56	1.2	1.56	1.67	1.38
57	1.3	2.85	1.84	2.12
58	1.2	1.58	1.69	1.35
59	1.5	2.33	1.31	1.62
60	1.2	1.65	1.82	1.76
61	2.3	1.67	1.52	2.34
62	1.7	1.72	1.67	2.76
63	1.6	2.15	1.32	1.64
64	2.1	2.43	2.32	2.31
65	1.3	2.89	1.81	2.13
66	1.6	1.56	1.51	1.52
67	1.3	1.57	2.43	1.88
68	1.4	1.56	1.34	1.38
69	1.2	2.44	1.65	1.36
70	2.1	1.78	2.34	1.88
71	1.7	1.33	1.54	1.63
72	1.3	1.56	1.34	1.38
73	1.6	1.67	1.54	1.53
74	1.7	1.68	1.67	1.63
75	1.6	1.33	1.54	1.63
76	1.8	1.78	1.67	2.75
77	2.2	1.68	2.34	1.87
78	1.6	1.72	1.67	1.63
79	1.2	1.81	1.68	1.5
80	1.3	1.57	1.67	1.39
81	1.8	2.42	1.83	1.54
81	1.4	1.79	1.69	1.36
82	1.2	1.68	1.84	1.76
83	2.1	2.43	2.33	2.23
84	1.6	2.42	1.82	1.54
85	1.4	1.78	1.55	1.55
86	2.1	1.69	1.55	2.21
88	1.2	1.56	2.41	1.88
90	1.4	1.56	1.33	1.38
91	1.3	1.78	1.68	1.53

APPENDIX F

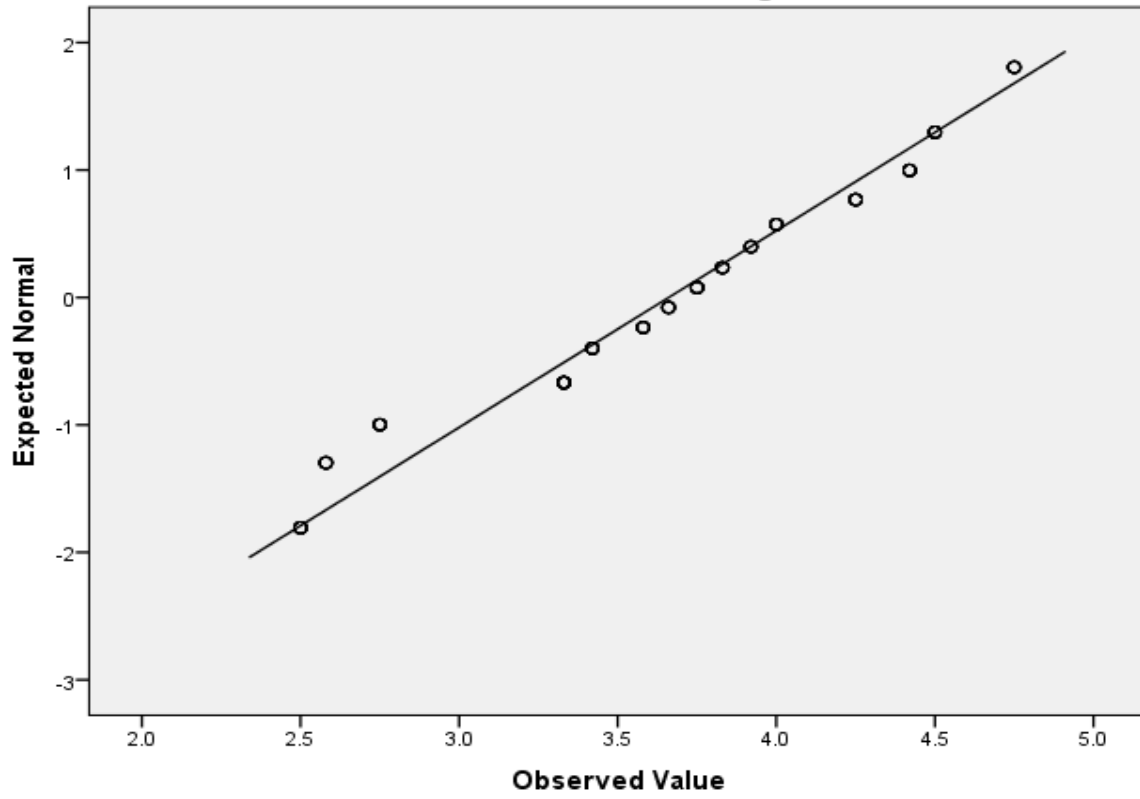
**DATA ON STATUS OF SERVICE DELIVERY BASED ON RATINGS AT
DEPARTMENTAL LEVEL AFTER ISO 9001:2008 QMS CERTIFICATION (n=91)
2015 /2016**

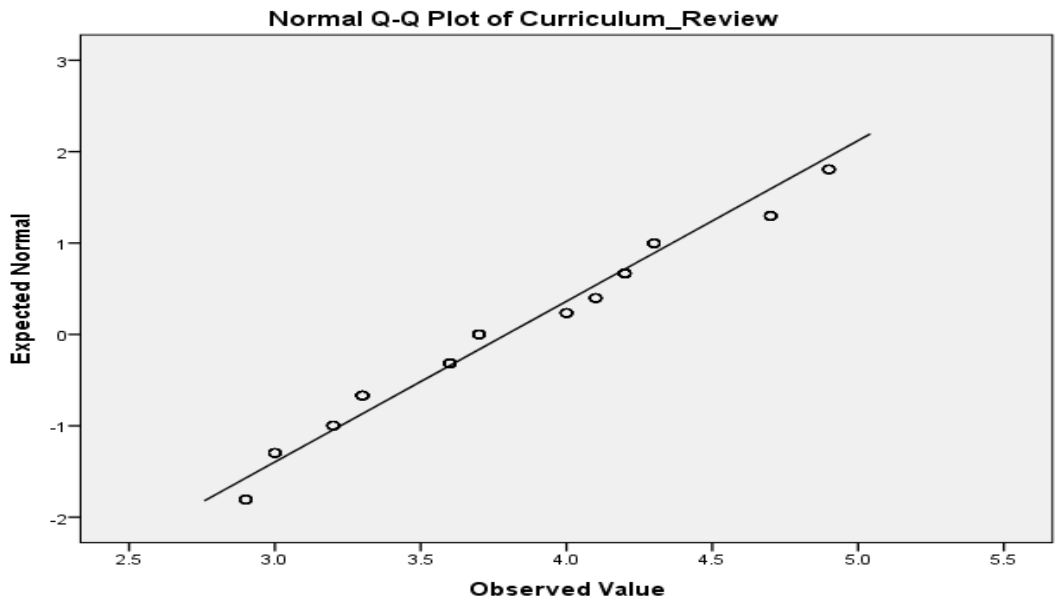
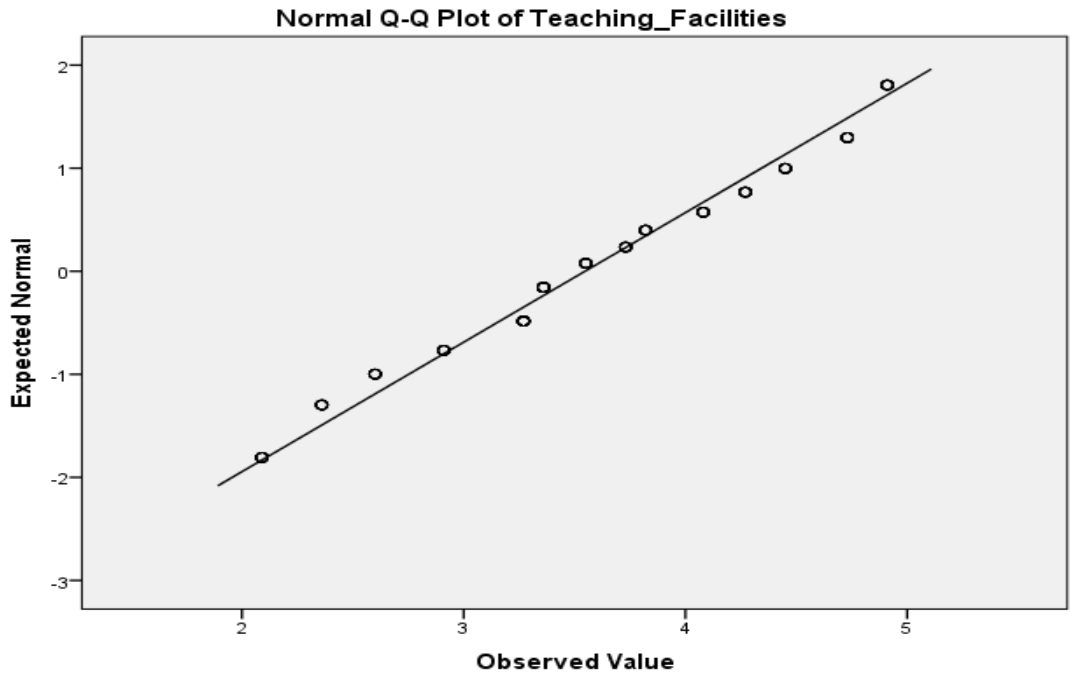
S/N	Teaching	Teaching Facilities	Curriculum Review	Exam Procedures
1	3.41	3.82	4.32	3.81
2	3.31	3.37	3.32	3.61
3	4.42	4.91	4.24	4.91
4	3.81	4.35	4.51	4.32
5	2.76	2.6	3.65	4.13
6	3.75	3.36	4.19	3.71
7	3.92	3.73	3.74	4.41
8	3.58	2.81	3.34	3.72
9	2.58	2.36	2.99	2.71
10	4.27	3.56	3.75	4.14
11	4.12	4.08	4.78	4.51
12	3.84	4.55	4.44	4.33
13	2.75	2.6	3.62	4.14
14	3.34	3.27	3.62	3.67
15	4.51	4.27	4.61	4.72
16	2.57	2.19	3.40	2.92
17	4.26	3.57	3.72	4.15
18	4.42	4.93	4.21	4.92
19	4.14	4.28	4.94	4.46
20	3.66	4.73	4.21	4.62
21	4.42	4.81	4.29	4.92
22	3.33	3.27	3.34	3.61
23	4.11	4.28	4.92	4.62
24	2.59	2.34	2.94	2.73
25	4.25	3.54	3.74	4.14
26	3.58	2.93	3.32	3.71
27	3.58	2.91	3.33	3.73
28	3.42	3.84	4.4	3.82
29	3.84	4.49	4.02	4.62
30	3.75	3.16	4.12	3.62
31	4.76	3.36	3.23	3.92
32	3.83	4.46	4.11	4.32
33	4.21	4.08	4.94	4.29
34	3.34	3.29	3.33	3.54
35	4.25	3.56	3.71	4.15
36	2.56	2.37	2.92	2.72
37	2.54	2.09	3.33	2.91
38	4.5	4.27	4.72	4.73
39	3.75	3.38	4.14	3.74
40	3.75	3.38	4.14	3.71
41	4.53	4.28	4.72	4.74
42	3.34	3.29	3.61	3.64

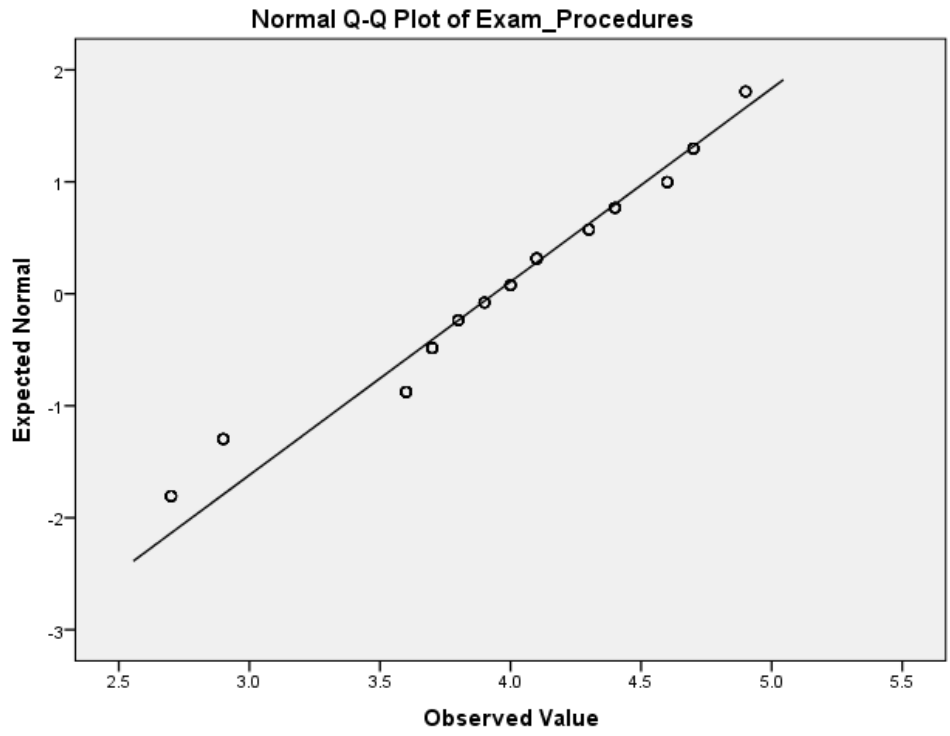
43	2.75	2.6	3.61	4.14
44	3.66	4.74	4.33	4.62
45	4.13	4.08	4.92	4.28
46	3.33	3.27	3.32	3.62
47	2.57	2.35	2.82	2.72
48	3.59	2.94	3.34	3.71
49	2.53	2.09	3.43	2.94
50	3.83	4.46	4.33	4.32
51	4.26	3.55	3.76	4.12
52	2.75	2.61	3.61	4.12
53	3.43	3.82	4.33	3.77
54	3.57	2.94	3.33	3.71
55	3.91	3.74	3.71	4.45
56	3.31	3.27	3.61	3.61
57	2.5	2.09	3.44	2.91
58	3.34	3.27	3.61	3.61
59	3.82	4.45	4.22	4.32
60	4.34	4.08	4.91	4.23
61	2.75	2.68	3.63	4.11
62	3.42	3.82	4.34	3.81
63	3.81	4.45	4.34	4.32
64	4.27	3.56	3.72	4.12
65	2.56	2.09	3.23	2.91
66	3.75	3.36	4.14	3.72
67	3.33	3.29	3.32	3.66
68	4.75	3.36	3.21	3.91
69	4.54	4.27	4.71	4.72
70	2.58	2.36	2.91	2.72
71	4.42	4.94	4.24	4.91
72	4.75	3.38	3.24	3.91
73	3.76	3.35	4.12	3.71
74	3.65	4.71	4.24	4.62
75	4.41	4.91	4.22	4.92
76	3.44	3.83	4.32	3.81
77	2.58	2.36	2.92	2.74
78	3.66	4.74	4.24	4.63
79	3.94	3.73	3.76	4.41
80	3.31	3.29	3.66	3.62
81	3.55	2.93	3.3	3.71
81	4.52	4.25	4.72	4.71
82	4.31	4.08	4.91	4.34
83	4.26	3.56	3.71	4.12
84	3.56	2.94	3.34	3.73
85	3.94	3.72	3.72	4.42
86	2.75	2.63	3.62	4.12
88	3.31	3.27	3.33	3.61
90	4.75	3.35	3.4	3.92
91	3.92	3.73	3.72	4.41

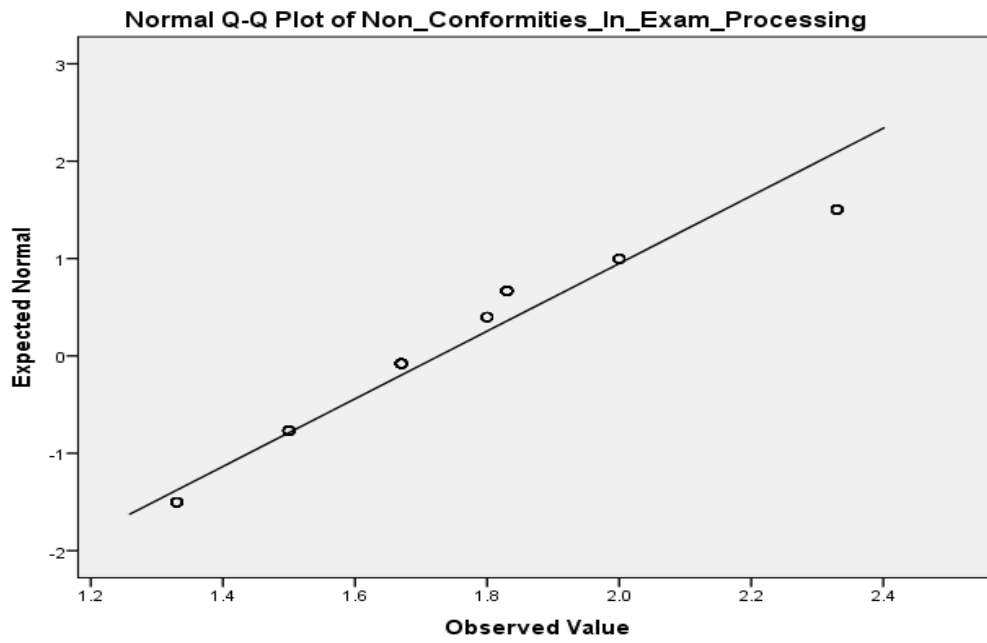
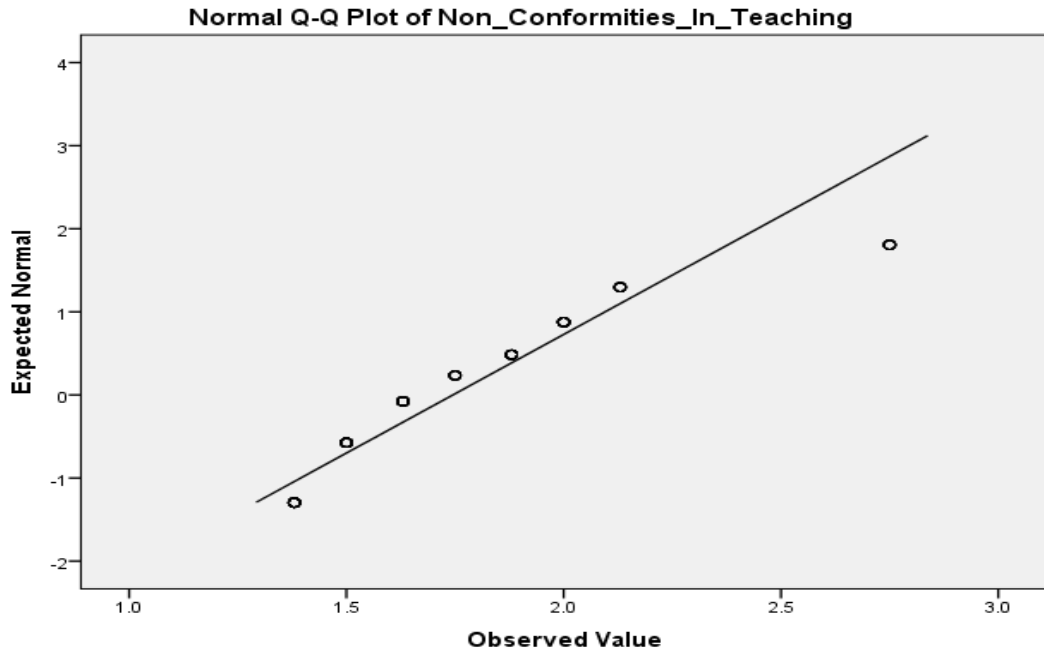
APPENDIX G
TESTS FOR NORMALITY

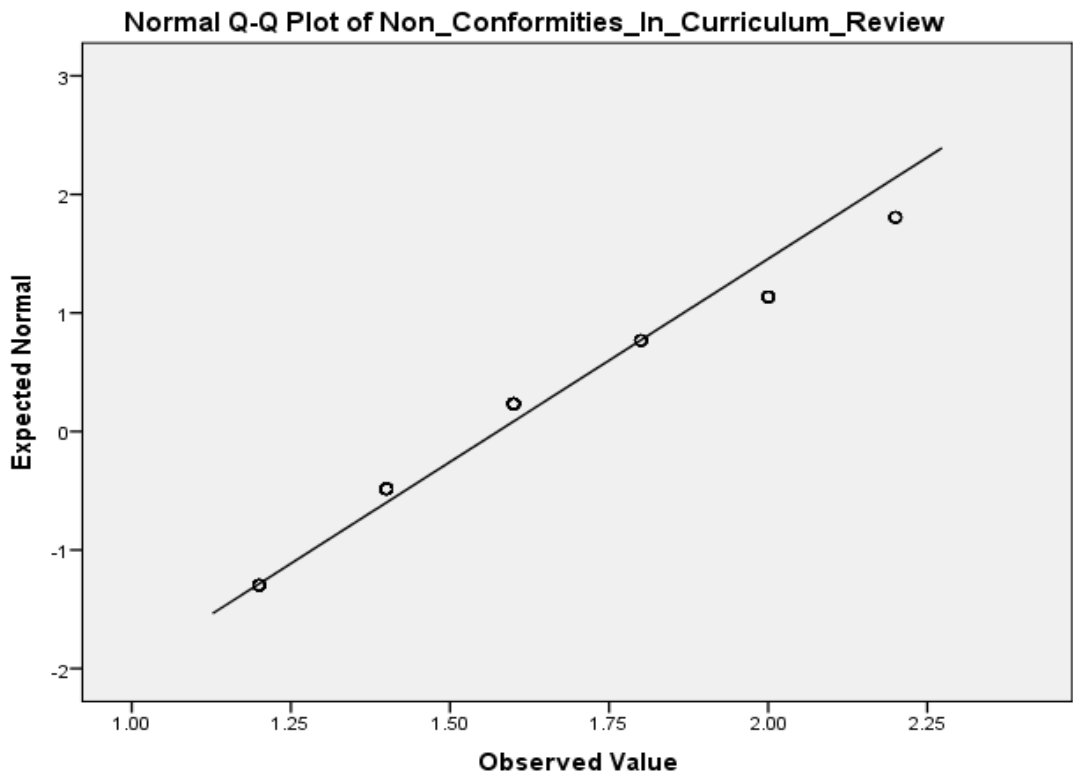
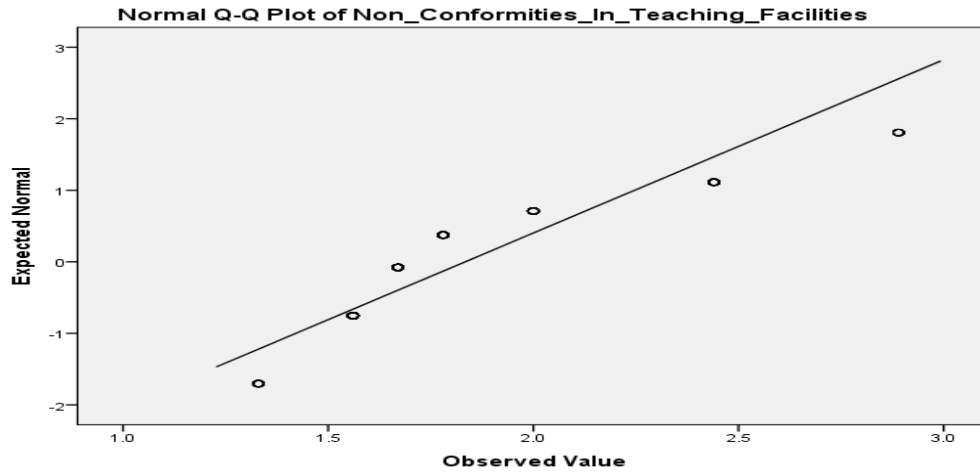
Normal Q-Q Plot of Teaching











APPENDIX H
RESEARCH PERMIT

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
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REPUBLIC OF KENYA



National Commission for Science,
Technology and Innovation

**RESEARCH CLEARANCE
PERMIT**

Serial No.A **16307**

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MS. ZILPAH ANDIVA KAGEHA
of MASENO UNIVERSITY, 385-50309
KAIMOSI, has been permitted to conduct
research in *All Counties*

Permit No : NACOSTI/P/17/79825/19731
Date Of Issue : 31st October, 2017
Fee Received : Ksh 2000

on the topic: **INFLUENCE OF ISO
9001:2008 QUALITY MANAGEMENT
SYSTEMS ON ACADEMIC STAFF SERVICE
DELIVERY IN PUBLIC UNIVERSITIES IN
KENYA**

for the period ending:
30th October, 2018

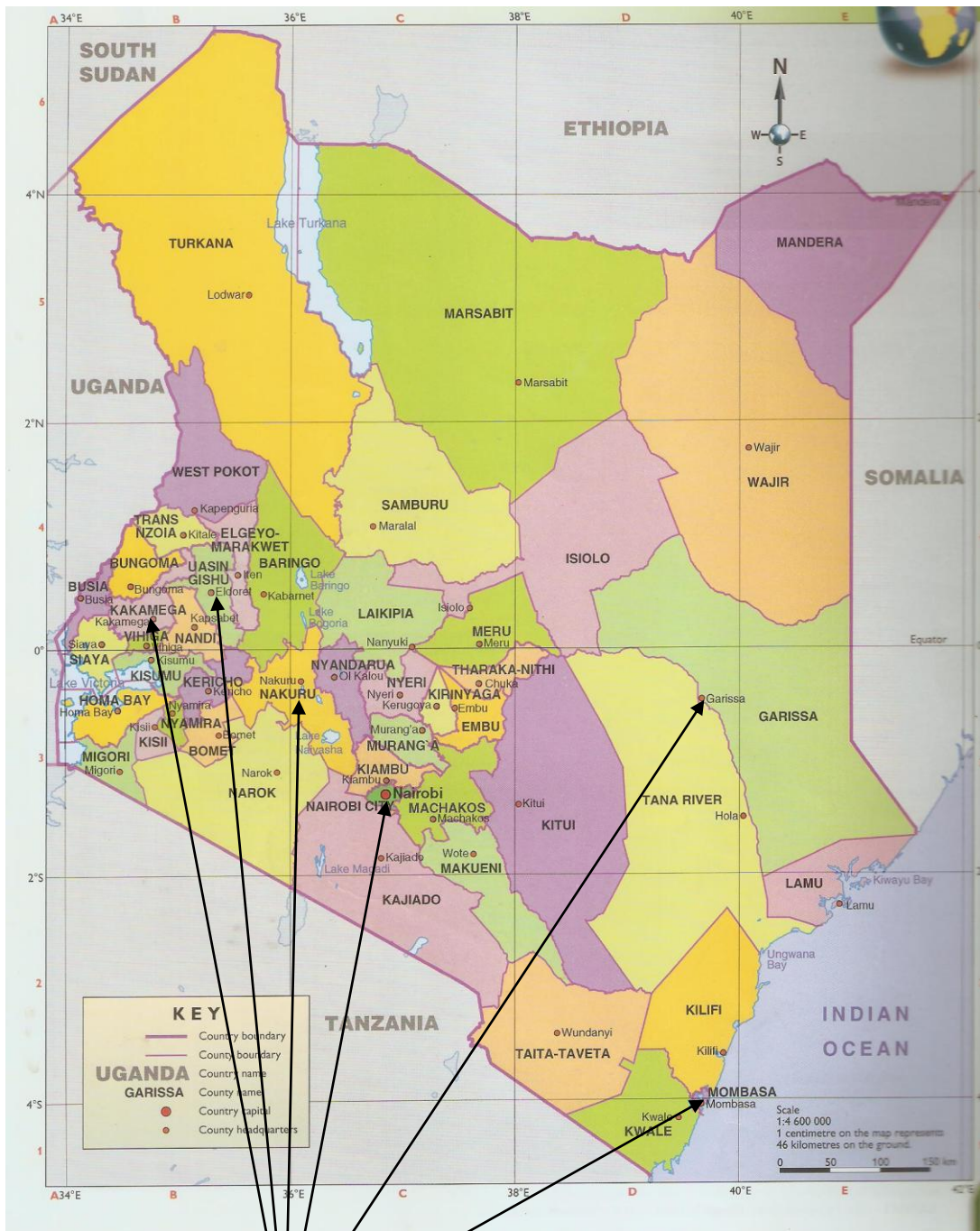


Kageha
.....
Applicant's
Signature

Galang
.....
Director General
National Commission for Science,
Technology & Innovation

APPENDIX I

AREA OF STUDY



Location of Public Universities in Kenya, 2015