



RESEARCH ARTICLE

**INFLUENCE OF ISO 9001:2008 QUALITY MANAGEMENT SYSTEMS ON ACADEMIC STAFF'S SERVICE DELIVERY IN MANAGEMENT OF EXAMINATIONS IN KENYA: A CASE STUDY OF PUBLIC UNIVERSITIES**

**<sup>1</sup>Zilpah Kageha Andiva, \*<sup>2</sup>Enose M.W. Simatwa and <sup>3</sup>Tony O. Okwach**

<sup>1,2</sup>Department of Educational Management and Foundations, Maseno University, Kenya

<sup>3</sup>Department of Curriculum Instruction, Kaimosi Friends' University College

ARTICLE INFO

**Article History:**

Received 22<sup>nd</sup> February, 2018  
Received in revised form  
19<sup>th</sup> March, 2018  
Accepted 09<sup>th</sup> April, 2018  
Published online 30<sup>th</sup> May, 2018

**Key words:**

Influence, ISO 9001:2008 Quality Management Systems, Academic Staff's Service Delivery Management of Examinations, Public Universities.

ABSTRACT

The implementation of International Organization for Standardization (ISO) 9001:2008 on Quality Management Systems in education has become a debated issue 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 in public universities in Kenya on the impact of ISO 9001:2008 Quality Management Systems casts doubt on their level of satisfaction with it based on non conformities. For instance between 2012 and 2015 one university recorded 2100 non-conformities and another recorded 2300 non-conformities which were higher than other Universities that recorded below 1820 non-conformities in examination processing procedures. The objective of the study therefore was to establish the influence of ISO 9001:2008 on Quality Management Systems on academic staff's service delivery in management of examinations in public Universities in Kenya. The site for the study was university E and university F that had the highest non conformities recorded. The study established that ISO 9001:2008 Quality Management Systems had significant influence on academic staff's service delivery in management of examinations. Thus, for every one unit increase in ISO 9001:2008 quality management systems conformity in management of examination processing improved service delivery in examination management by .966 units. This means that when non conformities decline there is improvement in academic staff's service delivery in examination management in public universities. ISO 9001:2008 Quality Management Systems was a significant predictor of academic staff's service delivery examinations management ( $F(1,252) = 32.942, P < .05$ ). The study concluded that ISO 9001:2008 quality management systems improved service delivery in examination management in 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 management of examinations in public Universities.

**\*Corresponding author:**

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**Citation:** Zilpah Kageha Andiva, Enose M.W. Simatwa and Tony O. Okwach. 2018. "Influence of ISO 9001:2008 Quality Management Systems on Academic Staff's Service Delivery in Management of Examinations in Kenya: A Case Study of Public Universities." *International Journal of Current Research*, 10, (05), 69631-69644.

INTRODUCTION

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 and 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. 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 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 Lundmark 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 900 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 and Dissanayaka, 2000), an extra administrative burden to statutory agents (Chan and 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 and 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. 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 and 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 Statistics (KEBS, 2012) and all universities are pursuing the international organization of standardization certification (Fuchaka and Swaleh, 2012). The study by Anyango (2012) indicated that the University of Nairobi adopted the ISO 9000:2008 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 quality management systems 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 Corbett 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 (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. Moreover, in Kenyan public Universities, there are cases of non-conformities/complaints which are of concern with regard to job satisfaction as indicated in the Table 1.

Table 1 above indicates the year in which the fourteen (14) Public Universities were ISO 9001:2008 quality management system certified by KEBS and the complaints raised under different variables by the year 2015. It is noted that both E University and F University of Science and Technology had a higher 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 as outlined above. The non conformities notes 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 ear marked. This is because some studies posit that ISO 9001:2008 quality management system is not a real valuable tool of improvement on quality education while others assert that ISO 9001:2008 quality management system model is the driver of quality in educational organizations.

**Research objective:** The research objective was to determine influence of ISO 9001:2008 quality management system certification on academic staff's service delivery in management of examinations in public universities.

**Synthesis of literature on influence of iso 9001:2008 quality management system on academic staff's service delivery in management of examinations in educational institutions:** 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 et al (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 et al (2013) recommended that all universities should seek for ISO certification and streamline their processes which include enrolment processes, payment services, registration, hostels allocation, medical services, timetable and examination results. 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 (i) 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 (ii) pressure of work 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 such as cases of missing marks, sexually transmitted grades and people who write papers and projects for students in return for pay. In public Universities, the university examinations procedures starts 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 Information Communication Technology 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 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 Continuous Assessment Tests. 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: 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.

**Conceptual framework:** While many businesses have benefited, many others have failed to achieve quality and competitive benefits through ISO 9001:2008 implementation which means that not all companies are able to take advantage of the certification. For this reason it was important to take a closer look at the issues surrounding the implementation of ISO 9001:2008 and construct conceptual framework for its successful implementation. Therefore, this study adopted the following conceptual framework. As perceived in the review of the literature, the independent variable for the study is the influence of ISO 9001:2008. The dependent variable is academic staff's service delivery in relation to management of examinations. The intervening variable is the academic staff's attitude. These factors directly or indirectly intervene on the dependent variable and the independent variables as illustrated in Figure 1.

## MATERIALS AND METHODS

Descriptive and correlational research designs were adopted from two universities E and F. Study population was 753 and Fishers formula was used to determine sample size of 254 teaching staff. Stratified random sampling was used to select 254 teaching staff, that is, 142 from E University and 112 from F university and saturated sampling was used to select 2 management representatives. Questionnaire, interview schedule and document analysis guide were used to collect data. Validity of the instruments was determined by specialists in the field of educational administration by including their input. 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 analyzed for content in emergent themes and sub-themes.

## RESULTS

From Table 3, 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.

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

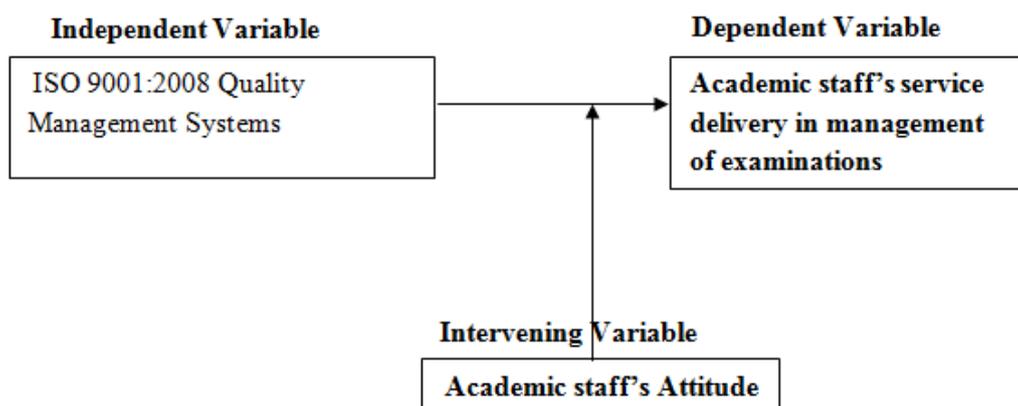
S N	University	Year of certification	Areas of Focus and Non –Conformities					Total
			Examination processing procedures	Curriculum review.	Teaching process	Teaching facilities	Processing of University Continuous assessment Tests	
1	A	20 <sup>th</sup> June 2012	1650	180	230	870	850	3780
2	B	29 <sup>th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

**Table 2. Procedure for Management of University Examinations**

Responsibility	Detailed Procedure
Registrar Academic Affairs Senate Chief Internal Examiner/ Chairpersons of Departments External Examiners	6.1 Shall prepare examination processing schedule and forward to senate for consideration 6.2 Shall Consider and approve the above schedule. 6.3 Shall ensure that internal examiners set and moderate examinations accordance with examination schedules and forward to the external examiners 6.4 Shall moderate examinations in accordance with timelines of schedule and return the same to chief internal examiners.
Chief external examiner/ Chairpersons of departments Assistant Registrar Examinations	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 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.
External Examiners	6.10 Shall moderate the marked examination scripts and make Recommendations
Chief internal examiner/ Chairpersons of Department	6.11 Shall discuss the comments with the Chairpersons of departments. 6.12 Shall ensure the external examiners comments are incorporated in the mark sheets during departmental board meeting. 6.13 Shall forward the mark sheets to the faculty board of examiners for approval
Dean Senate	6.14 Shall convene a faculty board of examiners to approve the examination results and present to the senate. 6.15 Shall consider and approve results.
Registrar (AA)	6.16 Shall release examination results. 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 university F and University E.



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

**Table 3. 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 2017

**Table 4. Institution Data**

Institution	Number of schools	Number of Academic Department
University E	11	55
University F	11	36

Source: Field Data 2017

**Table 5. Status of ISO 9001:2008 Quality Management Systems in sampled Public Universities 2013/2014 to 2016 /2017 Academic years**

Level of Non conformity in management of Examinations	Frequency	Percentage
1.00 -1.44	90	35.43
1.45 -2.44	164	64.57
2.45 -3.44	00	00
3.45 -4.44	00	00
4.45 -5.00	00	00
Total	254	100

Source: Field Data 2017

**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

**Table 6. Status of Service delivery in Management of Examination after ISO 9001:2008 Certification 2011 for university E and 2013 for university F for academic years 2013 /2014 to 2016 /2017**

Level of Service delivery in Management of Examinations	Frequency	Percentage
1.00 -1.44	00	00
1.45 -2.44	00	00
2.45 -3.44	35	13.78
3.45 -4.44	159	62.60
4.45 -5.00	60	23.62
Total	254	100.00

Source: Field Data 2017

**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 -	5.00Very good

**Table 7. Influence of ISO 9001™2008 Quality Management Systems on Academic Staff's Service delivery in examinations**

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	.480 <sup>a</sup>	.230	.223	.51030	.230	32.942	1	110	.000

a. Predictors: (Constant), ISO 9001:2008 quality management systems

**Table 8. ANOVA of ISO 9001:2008 Quality Management Systems and Academic Staff's Service delivery in Management of Examinations**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.578	1	8.578	32.942	.000 <sup>b</sup>
	Residual	28.644	252	.260		
	Total	37.223	253			

a. Dependent Variable: Academic Staff's service delivery in management

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

**Table 9. Linear Regression analysis of ISO 9001:2008 and Academic Staff's 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
1	(Constant)	5.605	.294		19.032	.000	5.021	6.189
	Non Conformities in Examination Processing	-.966	.168	-.480	-5.740	.000	-1.299	-.632

a. Dependent Variable: Academic service delivery services

Regression Equation  $Y = B_0 + B_1X_1 + \dots + \epsilon$

**Institution data:** The institution data for the universities that were used as the site of the study was as shown in Table 4. From Table 4, 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 students' 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; low, 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.

The research hypothesis responded to was: ISO 9001:2008 quality management systems has no 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 certified. 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 164 (64.57%) indicated, based on audit reports that non conformities in academic staff's service delivery in management of

examinations were low while 90(35.43%) indicated that the non conformities were very low. 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. 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 examines, 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 6, it can be noted that majority 159(62.60%) of the respondents rated academic staff's service delivery in management of examinations as good, 60(23.62%) as very good, while 35(13.78%) 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 staff's service delivery in management of examinations, regression analysis was computed and the results were as shown in Table 7. From Table 7, it can be noted that ISO 9001:2008 quality management systems accounted for 22.3% of the variation in academic staff's service delivery in management of examinations as signified by the adjusted R square coefficient .223. This means that ISO 9001:2008 explained 22.3% of the variance in academic staff's service delivery in management of examinations while 77.7% was due to other factors that were not subject of this study.

To determine whether ISO 9001:2008 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 8. From Table 8, it can be observed that ISO 9001:2008 was a significant predictor of academic staff's service delivery in management of examinations ( $F(1,252) = 32.942, P < .05$ ). 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 staff's service delivery in management of examinations, linear regression analysis was computed (Table 9). From Table 9, it can be observed that, for every one unit increase in non-conformities in management of examinations, service delivery in management declined by .996 units as signified by the coefficient -.996. The regression equation is  $Y = 5.605 + (-.996X_1)$ . Conversely, for every one unit reduction in non conformities in management of examinations, academic staff's service delivery in management of examinations improved by .996. This means that ISO 9001:2008 when adhered to improved management of examinations in public universities.

### Example

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

$$\begin{aligned} \text{i) } Y &= 5.605 + (-.996 \times 2.33) \\ &= 5.605 - 2.32 \\ &= 3.285 \\ &= 3.29 \end{aligned}$$

This means that when the non conformities are 2.33 (rated as low) academic service delivery in management of examinations is 3.29 (rated as average).

$$\begin{aligned} \text{ii) } Y &= 5.605 + (-.996 \times 1.33) \\ &= 5.605 - 1.325 \\ &= 4.28 \end{aligned}$$

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 4.28 (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.

## DISCUSSION

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 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. Brian 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) goes 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.

### Conclusion

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.

### Recommendation

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.

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