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## **RELATIONSHIP BETWEEN QUALITY MANAGEMENT SYSTEM'S AUDIT AND CUSTOMER SATISFACTION IN PUBLIC UNIVERSITIES IN KENYA**

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## RELATIONSHIP BETWEEN QUALITY MANAGEMENT SYSTEM'S AUDIT AND CUSTOMER SATISFACTION IN PUBLIC UNIVERSITIES IN KENYA

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### Abstract

**Purpose:** The objective of this study was to: investigate the relationship between Quality Management System's Audit and Customer Satisfaction in Public Universities in Kenya.

**Methodology:** The researcher employed Correlation research design using mixed methods approach. This study was undertaken in public universities in Kenya. There were 31 public universities in Kenya. These universities are spread across the country. Out of these, 15 had been awarded ISO 9001 QMS certification (KEBS, 2019). A sample of 8 universities was used for the study. All universities are regulated by CUE hence the same standards ought to apply in regard QMS. Data was analyzed using both descriptive statistics such as frequencies, mean, mode, median and inferential statistics such as linear regression. Data was presented using tables and figures.

**Findings:** The coefficient of determination also known as the R-square of 0.222 was found. This means that Quality Management System's audit explains only 22.2% of the variations in the customer satisfaction at the Universities that were studied. The study shows there was a weak relationship between Quality Management System's Audit and Customer Satisfaction ( $\beta = 0.111$ ). The relationship was also not significant at 5% level of significance ( $P\text{-value} = 0.087 > 0.050$ ). This finding implied that an improvement in Quality Management System's audit by one unit led to a 11.1% -unit improvement in customer satisfaction.

**Unique Contribution to theory, practice and Policy:** The results of this research may inform both the public universities and the Ministry of Education in Kenya so that they may appreciate the issue of quality of services so as to enhance customer satisfaction. Universities management may also benefit from the results of the study because it may expose the gaps in auditing and how it affects quality of management of Universities. Organizations receive ISO 9001 certification that specifies the requirements for a quality management system where an organization needs to demonstrate its ability to consistently produce quality products and services. ISO 9001 certification also aims to enhance the quality of services through effective application of the system, continual improvement, the assurance of conformity to customers and applicable statutory and regulatory requirements. Universities in Kenya should adhere to Universities Regulations, as they strengthen their internal quality assurance structures, systems and mechanisms with aim of improving customer satisfaction

**Keywords:** *Quality management System's Audit, customer satisfaction, Public Universities*

## 1.0 INTRODUCTION

International Organization for Standardization (ISO) 9001 family addresses several aspects of quality management and has the best known ISO standards. These standards give direction and tools that companies and organizations can use to ensure there is consistency in their services in meeting customer's needs, and that there is consistency in quality improvement. Achievement of optimal level of customer satisfaction calls for the institutions to continuously assess the experiences, opinions and suggestions of their customers and potential customers. Improving quality of services to meet customer's expectations is a continuous aspect in every organization. The organizations are supposed to monitor information relating to perceptions of the customer so as to establish whether it meets the requirements as one of the measures of the performance of the Quality Management System (Keller & Pyzdek, 2013). According to Kotler (2013), quality audit is aimed at assessing or examining a product, the process used to produce a particular product or line of products or the system supporting the product to be produced. It is meant to establish if what is being audited operates in conformity with the set standards.

Shah (2013) says that the policy of the government on external quality audit in Australia was begun in 2000 through the establishment of the Australian Universities Quality Agency (AUQA). He notes that among the leading factors which have led to policy implementation by the government on external quality audits in Australia include: the growth and expansion of higher education; accountability by the university of the public funding of institutions; the growth of profit making higher education; an increase in student differences, and the access and equity agenda; an increase in the use of information communication technology and other modes of learning; an increase in cost of education; an increase in movements of consumer and demand for quality education; the reputation of some institutions offering higher education courses; and university accountability to meet the needs of stakeholders

Commission for University Education in Kenya (CUE) is tasked with the responsibility of assuring the public and the stakeholders that education offered is of good quality. Universities Regulations 2014 sets out how Institutional Quality Audits are supposed to be undertaken as a precursor to Quality Audits to be done by CUE. This audit is carried out to confirm or deny the pronouncements an institution has made in self-assessment report (Kelsey & Bond, 2011). In exercising its mandate, the CUE carried out a Quality Audit in all Universities of Kenya in January and February, 2017. This audit was done to establish the extent of compliance by the universities with the Universities Act No. 42 of 2012 and the Amendments thereto, the Universities Regulations, 2014; and the Universities Standards and Guidelines, 2014.

Among issues that were identified by the report prepared by CUE after the exercise include: Missing or lost marks, delayed rates of completion, and failure to account for students at all levels; Low quality of school-based programs offered by many universities since the programs do not allow sufficient contact time between the learners and their lecturers, do not allow learners sufficient exposure to quality degree research, library time and interaction between the learners themselves; Some universities offered unapproved programs; Some universities did not adhere to the ratios of full time to part-time staff, as prescribed in the Standards and Guidelines; The lecturer to student ration was too high hence affecting quality of education in most universities; Some universities were found not to have instituted internal quality assurance

policies, systems and mechanisms, in line with the Universities Regulations (Kelsey & Bond, 2011). Though it is a requirement that universities in Kenya adhere to Universities Regulations, the 2017 Quality Audit report revealed glaring discrepancies. The Commission had instructed all universities to establish and strengthen their internal quality assurance structures, systems and mechanisms by 30th June 2017.

Despite the time set by the commission having elapsed, issues of quality are still rife in the universities in Kenya. Students across the universities in Kenya recently voiced their grievances. They raise pertinent issues, among them is the quality of education they receive which point to their dissatisfaction on the services they receive.

### **1.1 Statement of the Problem**

Customers expect quality services from organizations that have been awarded ISO 9001 certification. This is because the main objective for the adoption is to project the organization as adhering to quality processes and policies. Despite efforts by higher educational institutions to improve the quality of their services, complaints from their customers on the quality of services still abound. Numerous complaints by employers about half-baked graduates as well as from the customers of the public universities about the services offered which were not of good quality seen in the strikes and riots necessitated this study. Issues of missing marks as well as poor syllabus coverage have been raised by the customers. These are indicators to probable issues of quality in the organization showing that more needs to be done so that the customers may be satisfied. The paucity of research findings on ISO 9001 certification in higher education services leading to customer satisfaction also necessitated this study.

### **1.2 Hypotheses of the Study**

The following hypotheses were tested at 0.05 level of significance:

*H<sub>0</sub> There is no statistically significant relationship between Quality Management System's Audit and customer satisfaction in public universities in Kenya.*

*H<sub>1</sub> There is statistically significant relationship between Quality Management System's Audit and customer satisfaction in public universities in Kenya.*

## **2.0 LITERATURE REVIEW**

### **2.1 Theoretical Framework**

This study was anchored on the following theories:

#### **2.1.1 European Foundation for Quality Management Excellence Model**

This research will be anchored on European Foundation for Quality Management (EFQM) Excellence Model advanced by Hendricks (1996). EFQM advocates for the utilization of a standard management model that can bring the organization to the level of excellence (Campatelli, Citti & Meneghin, 2011). Calvo-Mora, Leal, and Roldan, (2005) note that EFQM model analyses how satisfaction can bring about excellence in the results of an organization, recognizing that through the adoption of different approaches, excellence may be sustainably achieved. According to the model, satisfaction of both customers and employees, and the impact

on society result from leadership that facilitates and stimulates institutional strategies and the management of personnel, resources and processes.

The Model (EFQM) is anchored on nine quality management criteria. These are five enablers (criteria that cover what a company does or is set to do) and four results (criteria that cover what a company realizes or achieves). These nine criteria are explained by the EFQM Model as: Focus on Results – company’s stakeholders are supposed to be pleased with results achieved; Focus on Customers – customer satisfaction should be realized through the company’s quality management; Constancy of Purpose and Consistent, Visionary Leadership, Process and Facts form the Management Focus – the management should break down everything into systems, processes and facts to ease monitoring and training; Involvement of Employees – employees should get opportunities for professional development and should be encouraged to continue being involved in the company’s activities; Continuous Learning – everybody should be given an opportunity or opportunities for learning while in employment; Developing Partnerships – developing associations or partnerships that add value to the company’s improvement process should be encouraged; Social Responsibility of the Corporation – the company should act responsibly towards the environment and community (James & Williams, 2008; Goetsch & Davis, 2013).

The model criteria cover the quality standards required of an organization which will enhance customer satisfaction through the realization of quality results. This model was therefore appropriate to the study because public universities have adopted QMS as a quality management tool aimed at improving the quality of services rendered thus enhancing customer satisfaction. When quality services are rendered through consistency of processes and procedures, customers will be satisfied.

### **1.1.1 Expectancy Disconfirmation Theory**

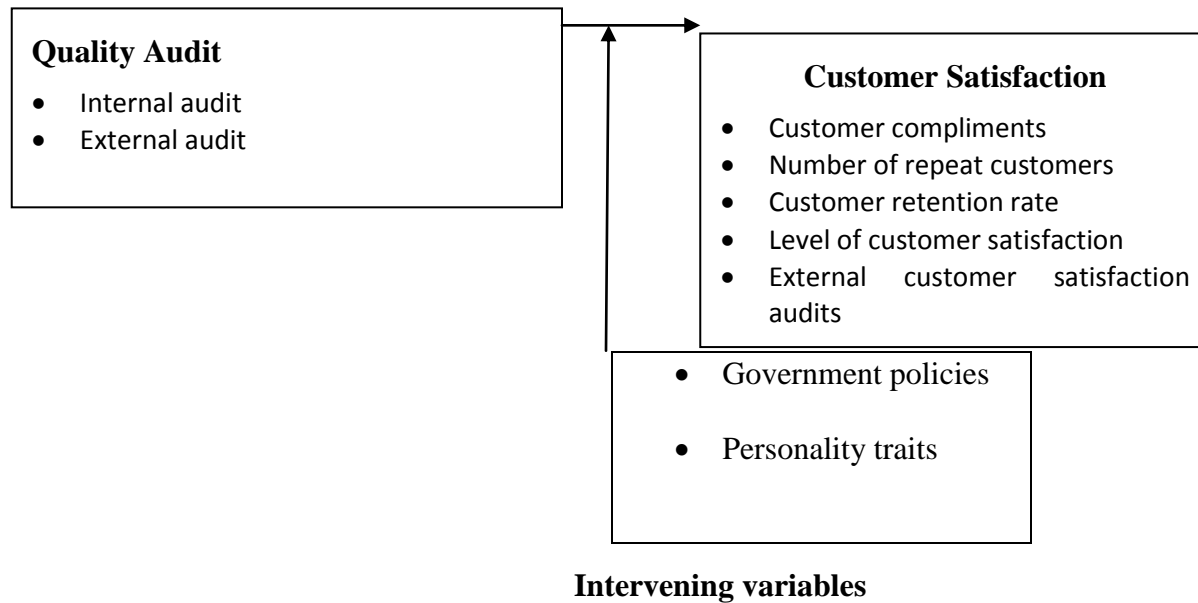
Smith and Houston (1982) said that the expectancy disconfirmation theory is a popular sciences theory. The theory postulates that satisfaction with services is related to confirmation or disconfirmation of expectations. The theory maintains that satisfaction is related to size and direction of disconfirmation experience where disconfirmation is related to the person’s initial expectations (Churchill & Suprenant, 1982). In this theory customers form expectations of product or service performance characteristics prior to purchase. When the product or service is bought and used the expectations are compared with actual performance using a better than worse heuristic. Positive disconfirmation results if the product or service is better than the expected while worse than expected results in negative disconfirmation. Simple confirmation results when a product or service performs as expected. Satisfaction is expected to increase as positive disconfirmation increases (Churchill et al., 1982). ISO certification is expected to result in better quality of product or service thus the customers have some expectations when an organization is certified which with time will result to positive or negative disconfirmation of the expectations. This made this theory very important in guiding the study.

## 1.2 Conceptual Framework

Figure 1 below shows how Quality Management System’s Audit influences customer satisfaction in public universities in Kenya. Figure 1 summarizes the conceptual framework in the study.

### Independent Variables

### Dependent Variable



**Figure 1: Conceptual framework on the Relationship between ISO 9001 Quality Management Auditing and Customer Satisfaction in Public Universities in Kenya**

**Source: The Author (2020).**

The study adopted the above conceptual framework. As perceived in the review of the literature, the independent variables for the study include Quality Audit. The dependent variable was customer satisfaction in public universities. The intervening variables were government policies and personality traits. Government policies and personality’s traits intervene the relationship between ISO 9001 Certification and customer satisfaction in public universities in Kenya, such that when government policies and personality traits were positive the relationship between ISO 9001 Certification would increase thus improving customers’ satisfaction. Conversely if the government policies and personality traits towards ISO 9001 Certification were negative they would reduce the relationship between ISO 9001 Certification and customer satisfaction in public Universities in Kenya. The intervening variables were government policies and personality traits. Government policies and personality’s traits intervene the relationship between ISO 9001 Certification and customer satisfaction in public universities in Kenya

### **3.0 MATERIAL AND METHODS**

This section contain research design, target population, sample and sampling procedures, data collection instruments, data collection procedures, data analysis procedures and data presentation

#### **3.1 Study Design**

A research design is the arrangement of conditions for collection and analysis of data with a view to combining relevance to the purpose of the research (Kothari, 2009). It provides the road map for the collection, measurement and analysis of data (Mathooko, 2015). Kothari (2009) adds that a research design is made up of the decisions about what, where, when, how much and by what means. This study adopted correlation research design and utilized both qualitative and quantitative approaches (mixed methods) to investigate the relationship between ISO 9001 Certification and Customer Satisfaction in Public Universities in Kenya. Creswell (2013) notes that a mixed method research is whereby a researcher collects, analyzes and mixes quantitative and qualitative data in a single study or series of studies to understand a research problem. This design was suitable for this research since it enabled the researcher to obtain well organized information on the relationship between independent and dependent variables.

#### **3.2 Population**

Mugenda and Mugenda (2003) argue that population is a complete set of individuals, cases or subjects with common observable characteristics. A target population is a large population from which sample populations are drawn. The target population for this study was 227,088 students and 15 QAOs. According to Commission for University Education (2017), there are 31 public universities in Kenya. From these universities, Kenya Bureau of Standards (2019) listed 15 public universities in Kenya that had been awarded ISO 9001 QMS certification. In this study 50% of the public universities that had been awarded ISO 9001 Certification were used for optimum results (Mugenda & Mugenda, 2003). This would be 8 universities out of 15 which had been awarded ISO 9001 QMS certification.

#### **3.3 Sampling Technique**

Each of these universities had 1 QAO which made a total of 8. The researcher used the formula generated by Krejcie and Morgan (1970) and adapted by The Research Advisors (2006) as a sampling table to get the number of students to act as respondents. The researcher selected 383 respondents for the study. Stratified random sampling was used to select the students who formed the sample to be studied. Students were stratified into 8 public universities which had been awarded ISO 9001 Certification. To get the sample for each university, the number of the students in the university was divided by the total number of the students in the sampled universities to yield factor  $x$  which was then multiplied by 383.

The unit of sampling were public universities in Kenya that had been awarded ISO 9001 QMS certification. There were 31 public universities in Kenya. Of these, 15 had been awarded ISO 9001 certification (Kenya Bureau of Standards, 2019). The researcher used 8 universities for the study which constituted 50% of the target population. These universities were selected randomly where each of the 15 universities that had been awarded ISO 9001 certification was assigned a number. The researcher wrote numbers representing the universities on 15 pieces of paper which

were then folded and put in a container. They were then mixed and 8 pieces of paper were picked each representing a university.

### **3.4 Research Instruments**

The researcher utilized two instruments to gather both qualitative and quantitative data. The instruments are described in more details in the subsequent sections. These instruments are Questionnaires for Students and QAOs.

The questionnaire had both open-ended and closed questions as well as Likert scale type of questions based on the research objectives. Creswell (2013) and Kothari (2009) advocate for questionnaires as a preferred tool to collect data since it allows faster, efficient and convenient data collection.

### **3.5 Data Collection Procedure**

Data collection was undertaken in three phases. The first phase involved obtaining a research permit from National Commission for Science, Technology and Innovation (NACOSTI) with an introductory letter from the Directorate of Graduate Studies, University of Kabianga. After the permit had been granted, the researcher made reconnaissance trip to the research area, met with the relevant officers of the universities to explain the purpose of the research, sought permission and set the date which was appropriate to administer the tools that were used in the study.

The second phase involved making data collection instruments. Piloting and testing of the instruments used the same category of participants from two public universities that did not form the sample of the study but are ISO 9001 certified. The pilot study was undertaken to determine if the data collection instruments were clear to the respondents. Restructuring, removal or addition of the items was made where necessary. The researcher organized training for 2 enumerators who would assist the lead researcher in data collection.

The third and last phase involved data collection. The procedure for data collection involved drop and pick for the questionnaire where by the questionnaire tools were left with the respondents for a week to be picked as stipulated. The researcher booked appointments with the ISO Coordinators for them to give an appropriate time to do the interviews.

### **3.5 Analysis and Presentation**

According to Mugenda and Mugenda (2003) the filled and collected questionnaires were checked for completeness, errors and omissions. They were tabulated and coded. Data analysis involved qualitative data from open-ended questions and quantitative procedures for data collected using closed-ended questions in the questionnaires. Quantitative procedures involved both descriptive and inferential statistics. This started by first describing the background information of the respondents in the questionnaire to profile their characteristics as well as establishing Customer Satisfaction in public universities in Kenya which was the dependent variable of the study. This was based on assessing customer satisfaction of students as a perception using 3 point likert scale Disagree= 1, Neutral = 2 and Agree = 3. The preceding sections in the questionnaire was descriptive statistics of the study objective as follows:

The objective sought the opinion of respondents on extent of the relationship between Quality Assurance Officers training and Customer Satisfaction. The 3point Likert scale was used to



measure the level where 1 = Agree (A), 2 = Neutral (N), 3 =Disagree (D), this is ordinal scale data which was analysed first using descriptive statistics which include frequency and percentages.

#### 4.0 RESULTS

The target population for this research were 15 the Internal Auditors of the 15 public universities in Kenya that have been awarded ISO 9001 certification. The study sampled 8 Internal Auditors. All of them responded (8). The overall response rate for the study was judged to be adequate enough for analysis and reporting.

##### 4.1 Frequency of undertaking Quality Audits at the University

The study sought to establish how often quality audits are undertaken by different universities sampled for the study.

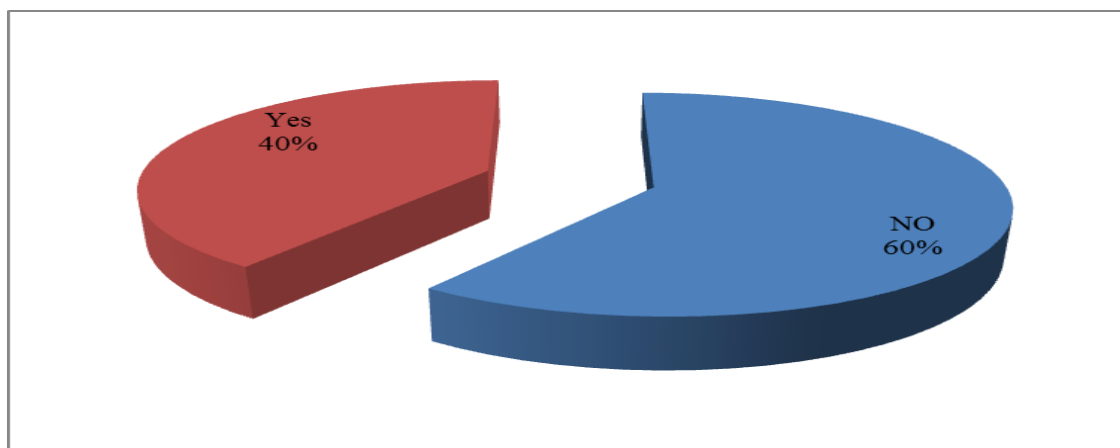
**Table 1: Frequency of Undertaking Quality Audits at the University**

Period	Frequency	Percentage
Quarterly	6	75.0
Annually	1	12.5
Above 1 Year	1	12.5
Total	8	100.0

The study found that most of universities sampled for the study accounting to 6 (75.0%) undertake auditing quarterly, with the least accounting to 1 (12.5%) either undertake audit annually or above 1 year.

##### 4.2 Quality Audits and Customer Satisfaction

The study sought to establish whether quality audit has any relationship with customer satisfaction in public universities in Kenya. The results are shown in figure 1 below.



**Figure 2: Quality Audits and Customer Satisfaction**

The study established from perspective of the Internal Auditors that there was weak or marginal relationship between quality audit undertaken at various universities and customer satisfaction at

public universities in Kenya. The reason is because there is inadequate auditing for procedures and processes related with ISO 9001 certification at the universities. The study findings show that there is need for frequent auditing. These findings are consistent with Keller and Pyzdek (2013) who noted the need for frequent auditing of ISO functions and procedure with quality audit aimed at assessing or examining a product, the process used to produce a particular product or line of products or the system supporting the product to be produced. It is meant to establish if what is being audited operates in conformity with the set standards.

#### 4.3 Relationship between Quality Audits and Customer Satisfaction in Public Universities in Kenya

The analysis represents the level of agreement with opinion that reflects the audits in universities and how they relate to customer satisfaction. The 3point Likert scale was used where **1 = Agree** **2 =Neutral** and **3=Disagree**. **Table 2: Relationship between Quality Audit and Customer Satisfaction in Public Universities in Kenya**

Opinions	1-Agree		2-Neutral		3-Disagree		Mean	SD
	F	%	F	%	F	%		
Internal audit is carried out regularly	7	87.5	1	12.5	0	0.0	4.00	1.8
External audit is carried out regularly	1	12.5	5	62.5	2	25.0	2.00	1.1
Reports of the quality audits are acted upon	1	12.5	3	37.5	4	50.0	2.13	1.9
Reports of the quality audits are made available	0	0.0	1	12.5	7	87.5	1.99	0.9
University ensures compliance with ISO 9001 certification requirements	4	50.0	1	12.5	3	37.5	3.38	0.9
Issues of missing marks are addressed	0	0.0	0	0.0	8	100.0	2.00	1.9
Delayed completion rates are addressed	0	0.0	0	0.0	8	100.0	2.00	1.9
University accounts for all the students	0	0.0	1	12.5	7	87.5	1.77	1.2
All the academic programmes approved	4	50.0	1	12.5	3	37.5	4.13	1.9
Ratio of staff	1	12.5	0	0.0	7	87.5	2.00	1.9
Quality audits bring customer satisfaction	2	25.0	0	0.0	6	75.0	2.03	1.9

The findings in Table 2 show that large proportion of internal auditors who participated accounting to 7 (87.5%) agreed that audit is carried out regularly in the university, 1 (12.5%) were neutral and none dissented( Mean=4.00,SD=1.8). However, on whether external audit is carried out regularly, the study found that 2 (25.0%) respondents disagreed, 1 (12.5%) agreed while the majority accounting to 5 (62.5%) were neutral (Mean=2.00, SD=1.1). Respondents were also asked whether reports of the quality audits are acted upon immediately by the

university where the findings were that the largest proportion of respondents accounting to 4 (50.0%) dissented with the view (50.0%), while 3 (37.5%) were neutral while only 1 (12.5%) agreed (Mean=2.13, SD=1.9). The study findings disagree with Keller and Pyzdek (2013) who noted the need to review the audit and act on their recommendations.

Respondents were also asked to indicate their level of agreement or disagreement on whether reports of the quality audits are made available to the customers of the university. The findings indicated that the largest proportion of respondents accounting to 7 (87.5%) disagreed while 1 (12.5%) was neutral (Mean=1.99, SD=0.9). Students across the universities in Kenya recently voiced their grievances. They raised pertinent issues, among them is the quality of education they receive which point to their dissatisfaction on the services they receive. They also complained that the audit report was not made available to them (The Standard, January 11, 2018).

On issue of missing marks and whether they are addressed without delay by the university the findings were that whole proportion of the respondents accounting to 8 (100%) disagreed that issue of missing marks is addressed (Mean=4.9, SD=1.00). It is a requirement that universities in Kenya adhere to University Regulations. The 2017 Quality Audit report revealed glaring discrepancies. The Commission had instructed all universities to establish and strengthen their internal quality assurance structures, systems and mechanisms by 30th June 2017. The findings agree with CUE (2017) audit report which exposes failure to adhere to the processes and procedures at Universities which has resulted in issues such as students losing marks, delayed completion and failure to account for students at all time.

On whether delayed completion rates at the university are addressed by the university the study similarly found that whole proportion of the respondents accounting to 8 (100%) disagreed (Mean=4.9, SD=1.00). In regard to whether university accounts for all the students at all levels in the university the largest proportion of the respondents accounting to 7 (87.5%) disagreed while 1 (12.5%) was neutral (Mean=4.9, SD=1.00). The findings agree with CUE (2017) which in its report identified missing or lost marks, delayed rates of completion, and failure to account for students at all levels as some of the issues affecting the customers of universities in Kenya.

The study sought to establish whether all the academic programs offered at the university are approved. It was found that 4 (50.0%) of the respondents agreed, 1 (12.5%) was neutral, while 3 (37.5%) disagreed with Mean=4.13, SD=1.9. Among issues that were identified by the report prepared by CUE after carrying out an audit include unapproved programs being offered (CUE, 2017).

On the issue of university ensuring adherence to ratios of full time to part time staff, the findings showed that the respondents accounting to 7 (87.5%) disagreed while 1 (12.5%) agreed. This is also reflected by Mean=1.85, SD=1.6. Among issues that were identified by the report prepared by CUE after undertaking audit was that some universities were found not to have instituted internal quality assurance policies, systems and mechanisms, in line with the Universities Regulations (CUE, 2017).

Regarding whether universities ensure compliance with ISO certification requirements, 4 (50.0%) of the respondents agreed, while 1 (12.5%) was neutral while 3 (37.5%) disagreed, Mean=4.00, SD=1.8. The study findings agree with study by Okibo and Kimani (2013) on the

Effectiveness of ISO 9001:2008 Certification on Service Delivery of Public Universities in Kenya found that proper organization of processes as a result of ISO certification influences public universities' service delivery. This would then bring about customer satisfaction. However, there seems to be lapses in the implementation of the procedures thus bringing about dissatisfaction of the customers

On whether Quality audits have a relationship with customer satisfaction in public universities in Kenya, 6 (75.0%) of the respondents disagreed, while 2 (25.0%) of the respondents agreed as reflected by a Mean=2.03, SD=1.9.

#### 4.4 Level of Customer Satisfaction

Table 3 and 4 show Customer Satisfaction level in terms of service delivery as reported by students who participated in the study

**Table 3: Customer Satisfaction with University**

			Descriptive Statistics				
			Median	Minimum	Maximum	Mean	Std. Deviation
Customer	Satisfaction	with	82.800	37.00	106.00	87.0889	16.40052
University							
Valid N (listwise)			300				

Aggregate score of competitor focus level was arrived at by total score based on a scale of 1-3 where; 1- Disagree, 2-Neutral, 3-Agree multiplied by 36 questions scale, therefore the highest or maximum possible score or level for customer satisfaction could be 108 score (36 x 3) while the minimum score for customer satisfaction could be 36 points (1x36).

Table 3 shows that Customer Satisfaction mean score of students in university that participated in the study was 87.088 and with a median of 82.800. Maximum score was 106.0 against a possible score of 108 and minimum was 36, this implies that majority of students were having lower scores of customer satisfaction. Using the cutoff of the mean, the researcher sought to find out the frequency of customers who had high score of satisfaction as compared to lower score. Findings from Table 4 show that majority of students accounting to 90.7% have lower score of customer satisfaction and only 9.3% were having high score for customer satisfaction.

**Table 4: Customer Satisfaction**

				Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	Score	of Customer	272	90.7	90.7	90.7
	High	Score	of Customer	28	9.3	9.3	100.0
<b>Total</b>				<b>300</b>	<b>100.0</b>	<b>100.0</b>	

#### 4.5 Inferential Analysis

Pearson Correlation analysis and regression analysis was carried out to test the degree and level of relationship between quality audit and customer satisfaction. The findings are shown in

#### 4.5.1 Correlation analysis

**Table 5: Quality Management System's Audit and Customer Satisfaction in Public Universities in Kenya**

		Customer Satisfaction	Internal Audit	External audit
Customer Satisfaction	Pearson Correlation	1	.223	.159
	Sig		.088	.106
	N	8	8	8
Internal Audit	Pearson Correlation	.223	1	.104
	Sig	.088		.324
	N	8	8	8
External audit	Pearson Correlation	.159	.104	1
	Sig	.106	.324	
	N	8	8	8

\*\* Correlation is significant at the 0.01 (2-tailed)  
\* Correlation is significant at the 0.05 (2-tailed)

$H_0$ 1 There is no statistically significant relationship between Quality Management System's Audit and customer satisfaction in public universities in Kenya.

The hypothesis was rejected or accepted at 95% level of confidence. The findings are displayed on Table 5. Pearson's  $r$ , which is also called Pearson product-moment correlation coefficient was used to measure correlation between variables which has value between +1 (total positive) and -1, (total negative). The correlation analysis between customer satisfaction and Quality Management System's audit was carried for two constructs which include internal audit and External Audit. This was meant to establish whether there was any relationship between Quality Management System's audit and customer satisfaction in public universities in Kenya at 95% level of confidence ( $P$  value  $\leq 0.05$ ). The findings in Table 5 established that a weak and insignificant relationship of R Square 0.223 which is 22.3% at  $0.088 > 0.05$  existed between construct of internal audit and customer satisfaction in the University. The same with the construct of external audit which performed poorer than the latter with Pearson  $R = 0.159$  (15.9%) at  $0.106 > 0.05$ , therefore the Quality Management System's audit is not helping in improving ISO certification in terms of customer satisfaction

#### 4.6 Regression Analysis

The overall regression fitness of model to explain the relationship between Quality Management System's audit and customer satisfaction was calculated and interpreted using R Square

**Table 6: Contribution of Independent variable to Dependent**

Model Summary	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.345 <sup>a</sup>	.222	.113	2.23799
<b>ANOVA</b>	DF	F	Sig	
	5	39.553	.138	
<b>Coefficients</b>	Unstandardized Coefficients	Standardized Coefficients	T	Sig.
	B	Std. Error	Beta	
(Constant)	2.890	.549		6.800
Quality Management System's audit	.009	.027	.111	2.778

The coefficient of determination also known as the R-square of 0.222 was found. This means that Quality Management System's audit explains only 22.2% of the variations in the customer satisfaction at the Universities that were studied.

The results imply that the independent variable, Quality Management System's Audit, was not a good predictor of customer satisfaction. This was also supported by the reported ANOVA  $p=0.138>0.05$  which was greater than the conventional probability of 0.05 significance level which implies that Quality Management System's Audit was not statistically associated with customer satisfaction and therefore null hypothesis was accepted. This contradicts Keller and Pyzdek (2013) who argued that quality audit is related with customer satisfaction since auditing is aimed at assessing or examining a product, the process and service delivery with aim of producing excellent outcomes. Absence of quality audit like the current case is normally manifested by systems failing to operate in conformity with the set standards. The major aim of an audit is the collection of objective evidence that can be used to make an informed decision about the state of the systems or product being audited.

In exercising its mandate, the CUE also carried out a Quality Audit in all Universities of Kenya in January and February, 2017. This audit was done to establish the extent of compliance by the universities with the Universities Act No. 42 of 2012 and the Amendments thereto, the Universities Regulations, 2014; and the Universities Standards and Guidelines, 2014. Among issues that were identified by the report prepared by CUE after the exercise include: Missing or lost marks, delayed rates of completion, and failure to account for students at all levels; Low quality of school-based programs offered by many universities since the programs do not allow sufficient contact time between the learners and their lecturers, do not allow learners sufficient exposure to quality degree research, library time and interaction between the learners themselves;

## 5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### Summary of the findings

The study found that the universities have two types of audits. These are internal and external audits. Most of the universities sampled undertake auditing regularly as required by ISO standards. The results show that a large proportion of internal auditors who participated agreed that internal audit is carried out regularly in the university. However it was found out that external audit is not carried out regularly. Majority of the respondents disagreed with the opinion that reports of the quality audits are acted upon immediately by the university.

### Conclusions

The study established that universities need to improve both internal and external audits. However, the study found that internal audits are being carried out regularly unlike external audit. The reports of the audits nevertheless are not acted upon such as addressing the issue of delayed completion rates as well as offering programs that are not approved. Additionally, it was found that reports of audits are not made available to customers. The study also found that universities do not adhere to universities regulations as stipulated in Universities Regulations and service charter. This could be the cause of dissatisfaction with the services offered by the universities.

### Recommendations

There is need to audit regularly the extent of compliance by the universities with ISO 9001 certification standards to establish the extent to which universities are adhering to the standards and the results made available to the all stakeholders. Universities should improve quality audit which is aimed at improving processes used to produce a particular product or line of products or the system supporting the product to be produced. Universities in Kenya should adhere to Universities Regulations, as they strengthen their internal quality assurance structures, systems and mechanisms with aim of improving customer satisfaction, Some universities were found not to have instituted internal quality assurance policies, systems and mechanisms, in line with the Universities Regulations and therefore sufficient effort need to be done to strengthen auditing policies. Auditing process for universities need to be improved in order to reduce constant complaints missing or lost marks, delayed rates of completion, and failure to account for students at all levels; Low quality of school-based programs offered by many universities since the programs do not allow sufficient contact time

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