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**SOCIETY OF  
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## **Internal Quality Auditing and Post-Examination Services Delivery in Public Universities in Kenya**

*Jemimah Muchai, David Mulwa\* & Wycliffe Amukowa  
Machakos University, 136-9100, Machakos, Kenya  
\*Email: [davidmulwa@mksu.ac.ke](mailto:davidmulwa@mksu.ac.ke)*

### **Abstract**

*Examination is a crucial process of a university's quality management system thus, requires maintenance of quality. Several inefficiencies in post examination services delivery have occurred in Kenyan public universities that have implemented ISO 9001: 2015 QMSs. The study was guided by three objectives; to determine the frequency of internal quality audits in public universities in Kenya as per ISO 9001 2015 QMS, to establish the extent to which Kenyan public universities internal quality auditing adhere to ISO 9001:2015 QMS and to determine the relationship between internal quality audit as per ISO 9001:2015 QMS and post examination services delivery. A mixed methods research design was employed. Purposive sampling was used to sample 6 directors of quality assurance, 6 directors of QMS and PC and 6 deputy registrars (examinations) while 297 examination coordinators and 384 fourth year students were sampled using stratified sampling technique. The study found 43.6% of the institutions undertook internal quality audits on quarterly basis, 23.5% on semi-annually and 31.3% annually. Public universities had to a large extent implemented internal quality auditing as per ISO 9001:2015 QMS ( $M=3.873$ ,  $SD=0.772$ ). The study found that undertaking internal quality auditing had a positive significant effect on post-examination services delivery in Kenyan public universities. The study concludes that internal quality auditing significantly enhances post examination services delivery in Kenyan public universities and recommends regular and comprehensive internal audits to enhance timely identification of nonconformities along with constitution of independent audit teams to monitor execution of corrective measures laid out in audits reports.*

**Key words:** *Internal Quality Auditing; ISO 9001:2015 Quality Management System; Post-Examination Services Delivery; Public Universities; Quality Management.*

### **1. Introduction**

Since the start of the 21<sup>st</sup> century, the development of organizational systems to facilitate quality management was seen as a key priority in organizational management (Ravichandran & Rai, 2000). Basically, a quality management system (QMS) can be regarded as the organizational structure, procedures, processes and resources required by an organization in executing quality management (Krajcsák, 2019). The implementation of QMSs in today's setup within organizations is undertaken with regards to diverse internationally recognized approaches and standardized frameworks (Kandie, 2019).

Niedermeier (2017) argues that the most well-known QMSs are the ones established on the ISO 9000 series of quality standards that were developed by the ISO and ISO 9001:2015 QMS is an example. Implementing the ISO 9001: 2015 QMS guarantee that an organization will have constancy in management processes linked to quality in a system. Under this QMS for instance, an organization is mandated to carry out internal audits at planned intervals (Parthasarthy, 2017). Such audits are needed in providing information on whether the QMS complies with the requirements of ISO 9001 and other organizational requirements and whether its implementation and maintenance is effective. There is emphasis on how they are done, audits being fixed in a realistic time so as to fix noted nonconformance and verification of actions taken and so forth.



ISO 9001 has been recognized as a standard that is suited to meeting the needs and requirements of higher education institutions (HEIs) (Chumba, Kirui, Sang & Kibett, 2019). A significant number of universities have sought to induce the confidence of their various stakeholders through the implementation of ISO 9001 into QMSs. It is pointed out by Hussein et al. (2017) that ISO 9001 QMS applies to several academic processes for instance, examination, grading, and program review towards ensuring that students receive academic programs and services that are of high quality as promised by their affiliated institutions. Nevertheless, doubts still exist as to whether ISO 9001 QMSs have assisted HEIs realize tangible improvement in service delivery seen in the contradictory findings of different scholars (Alolayan, 2014).

Usually, examination is among the crucial processes of any university quality management system as it transforms the students as inputs into the system to useful graduates as outputs of the system (Tinkler & Jackson, 2010). This study was focused on post examination services. Several challenges confronting post-examination processes in universities include the misplacement of examination answer scripts, miscalculation of scores/marks, late exam marking and results submission, lack of proper instruments for moderation, errors in recoding marks, missing marks as well as delayed issuance of results transcripts and degree certificates (Matovu, 2014; Mwangi, 2018; Geraldo, 2019). These concerns have in many times compromised the quality, reliability and validity of examination processes in many institutions.

In a study to determine the influence of ISO 9001:2001 internal quality audit on performance of the Coca-Coca Bottling Plants, it was found that internal quality audits had a significant and positive effect on performance of the company in quality, time, cost and flexibility (Gitura, 2014). Internal quality audits were found to improve performance by inspiring companies to perform efficiently by linking business objectives through quality objectives. Mail, Sudjito, and Budi (2014) in their study conducted in private colleges in Sulawesi Province, Indonesia assessed how internal quality audit led to achievement of consistency in the implementation of ISO 9001 standards. The study found that there was a positive impact on quality culture in the colleges where compatibility and product audits were systematically and consistently carried out. It was noted that internal quality audit provided important feedback that allowed the colleges to come up with new values, behavior and attitude and recommended the top management to emphasis on maintaining scheduled internal quality audits.

Giedt (2016) investigated the internal audit of Juland Incorporated ISO 9001 QMS, a logistics business in Prudhoe Bay, Alaska. The study found that internal quality audits led to identification of system's nonconformity areas and served as the basis for developing corrective action plans which could be executed to correct the nonconformities in the various processes which ensured that the firm did not incur major costs arising from the need for reworks, defects, employee or customer dissatisfaction among others. The study noted when corrective actions were not undertaken, then the same nonconformities were found when subsequent audits were conducted reducing the effectiveness of the internal quality audits.

Boiyon, Manduku, and Rotumoi (2020) examined the relationship between quality audits and customer satisfaction in eight public universities in Kenya that were ISO 9001 certified. Most of the universities undertook internal quality auditing on quarterly basis. The study found that there was a weak relationship between the internal quality audits and the satisfaction of customers in these institutions as a result of insufficient auditing practices. Most of the universities sampled did not take immediate action on audits reports and that the auditors did not avail the reports to the customers. According to the study findings, there was need to improve internal quality audits to improve processes that guided specific services the universities offered.

A study conducted by Gutierrez (2013) on performance measurement on internal auditing framework for the ISO 9001 QMS, identified eight main concerns pertaining to ISO 9001 internal audit. These were incompetence on the part of internal auditors; poor knowledge and understanding of ISO 9000 standards as well as auditing practices; poor support from the top management; poor audit planning capability; failure to carry out follow ups after the audit results were availed; poor capacity to quantify audit performance as well as the inability to quantify QMS performance. Five major effects of inadequate internal quality auditing practices were listed as the inability of organizations to detect all insufficiencies in their QMSs' processes; failure of the QMS to perform as anticipated; inability of organizations to improve their capabilities as mandated and increased dissatisfaction among the top management were also identified in the study.



Kaziliūnas (2010) assessed the implementation of QMSs in service organizations. The study found that internal quality audits improved QMSs and quality of work done by identifying opportunities for improvement, increased the organizations' ability to identify nonconformity the value of certifications. It was found that organizations based their managerial decisions on quality on internal quality audits enabling them to improve the effectiveness and efficiency of their processes. The study established that efficient internal quality audits enhanced the process of developing quality systems and led to creation of innovative solutions in the organization thus improving the level of service delivery.

The literature reviewed revealed a knowledge gap in that there was no study that sought to find the effects of internal quality auditing on post examination services delivery in public universities. Some of the studies focused on the performance of the organizations (Gitura, 2014; Gutierrez, 2013), while others on customer satisfaction (Boiyon, Manduku, & Rotumoi, 2020). This study addressed this gap.

In recent years, there has been a rapid expansion of universities in Kenya which has contributed to concern on quality of education services delivered. Stakeholders in the higher education sector have raised a number of complaints regarding the quality of examination services delivery in public universities (Bisieri & Ondego, 2017). A quality audit report produced by the Commission for University Education (CUE) in 2017 revealed that some universities had a chronic problem of missing student marks leading to delayed graduation for students at all levels, lengthy bureaucratic procedures for obtaining examination results and transcripts (CUE, 2017). In 2019, CUE also questioned the validity of the degrees awarded to PhD students in one of the established public universities in the nation citing poor internal and external moderation of examination marking (CUE, 2019).

Untimely processing of student results due to late marking and submission of results by lecturers, errors in recording marks and the loss of student examination data have been a source of frustration for many Kenyan students (Mwangi, 2018). What was more worrisome is the fact that the mentioned inefficiencies occurred in public universities that were implementing ISO 9001: 2015 QMSs having already been certified. This concern casted doubt on the extent to which implementing these QMSs translated to quality service delivery in public universities, and more specifically, the delivery of post examination services. A review of existing literature showed that empirical studies delineating the effect of ISO 9001: 2015 QMS implementation specifically internal quality auditing on post examination services delivery were scanty. Moreover, the available related studies were based on the expired ISO 9001: 2008 quality standard. The above concerns were a key motivation why this current study was undertaken.

The study was guided by three objectives:

- i) To determine the frequency of internal quality audits in public universities in Kenya,
- ii) To establish the extent to which Kenyan public universities internal quality audits adhered to ISO 9001:2015 QMS requirements
- iii) To determine the relationship between the internal quality auditing and post examination services delivery in Kenyan public universities.

The study had hypothesized that:

**H0:** Internal quality auditing as per the ISO 9001:2015 quality management system does not significantly affect post-examination services delivery in public universities in Kenya.

## 2. Research Methods

The study employed a mixed methods research design where both qualitative and quantitative approaches to research were adopted. The study was conducted in the main campuses of all the 26 ISO 9001:2015 certified public universities in Kenya, and targeted 26 directors of quality assurance, 26 directors of QMS and PC, 26 deputy registrars (examinations), 1229 examination coordinators and 368100 fourth year students (CUE, 2017; Universities' Academic Divisions, 2020). A census of all the 26 Kenyan public universities that had been ISO 9001:2015 certified was taken. Purposive sampling was used to select 6 directors of quality assurance, 6 directors of QMS and PC and 6 deputy registrars (examinations), 3 from established universities (established before 2010) and 3 from the young public universities (established after 2010) respectively. Stratified sampling method was used in selecting 297 examination coordinators and 384 fourth year students. The samples in this case were determined using the Krejcie and Morgan (1970) statistical table.

The study used primary data that was gathered using semi-structured questionnaires and interview schedules. Questionnaires were administered to the examination coordinators and students while the rest of the targeted

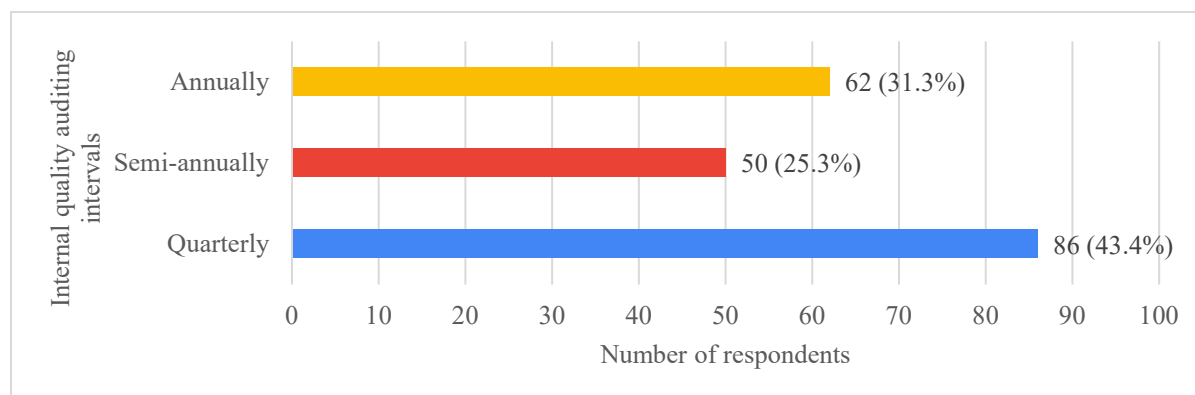


examination process stakeholders were interviewed. A pilot study to test the reliability and validity of the research instrument was conducted in Moi University, Nairobi Campus, Nairobi County and Cooperative University of Kenya, Meru Campus, Meru County. To analyze the qualitative data, content analysis was conducted. For quantitative data, both descriptive analysis and inferential analysis were conducted. The Statistical Package for Social Sciences (SPSS) was the main data analysis software used. The ethical principles of informed consent, voluntary participation, confidentiality, anonymity, honesty and objectivity, approval and authorization from the relevant institutions were adhered to in the course of this study.

### 3. Result analysis and Discussion

#### 3.1. Internal Quality Auditing in Public Universities in Kenya

The study established that most of the public universities in Kenya were keen to meet their ISO 9001:2015 QMS requirements on internal quality auditing. This was based on the responses of the majority of the examination coordinators, 198 (88.4%). This finding was consistent with the assertion by Njui (2018) that periodic internal quality audits were among the measures applied by Kenyan universities to improve service quality. The findings in Figure 1 show the intervals at which Kenyan public universities conducted internal quality audits in line with their ISO 9001:2015 QMSs as indicated by the examination coordinators.



**Figure 1: Frequency of Internal Quality Audits in Kenyan Public Universities**

As shown in Figure 1, public universities in Kenya conducted internal quality audits at fixed or planned intervals majorly on a quarterly, semi-annually and annually basis. This finding was reflected the argument by Parthasarthy (2017) that organizations that had adopted ISO 9001:2015QMSs were obligated to undertake internal audits at planned intervals.

#### 3.2 Extent to Which Kenyan Public Universities Adhered to Internal ISO 9001:2015 QMS Requirement

The reaction of the examination coordinators to five (5) statements that were a reflection of internal quality auditing in their institutions as mandated under their ISO 9001:2015 quality management system is depicted in Table 1.

**Table 1: Internal Quality Auditing as per ISO 9001:2015 QMS in Public Universities**

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Mean	Std. Dev.
Internal quality carried out at planned intervals to check service conformance.	3.10%	1.80%	5.40%	51.30%	38.40%	4.201	0.868
Reports of the internal quality audits availed to relevant management for action.	4.90%	0.40%	17.00%	43.80%	33.90%	4.013	0.986
We have in place internal audit program(s)	3.10%	8.00%	14.70%	39.30%	34.80%	3.946	1.049



Internal quality audits yield feedback, allow conformance to established requirements.	0.00%	8.90%	24.60%	42.00%	24.60%	3.821	0.906	
Necessary corrective actions are taken without undue delay.	6.70%	11.60%	34.40%	30.80%	16.50%	3.388	1.099	
<b>Composite mean and standard deviation</b>						<b>3.873</b>	<b>0.772</b>	
<b>Valid n=224</b>								

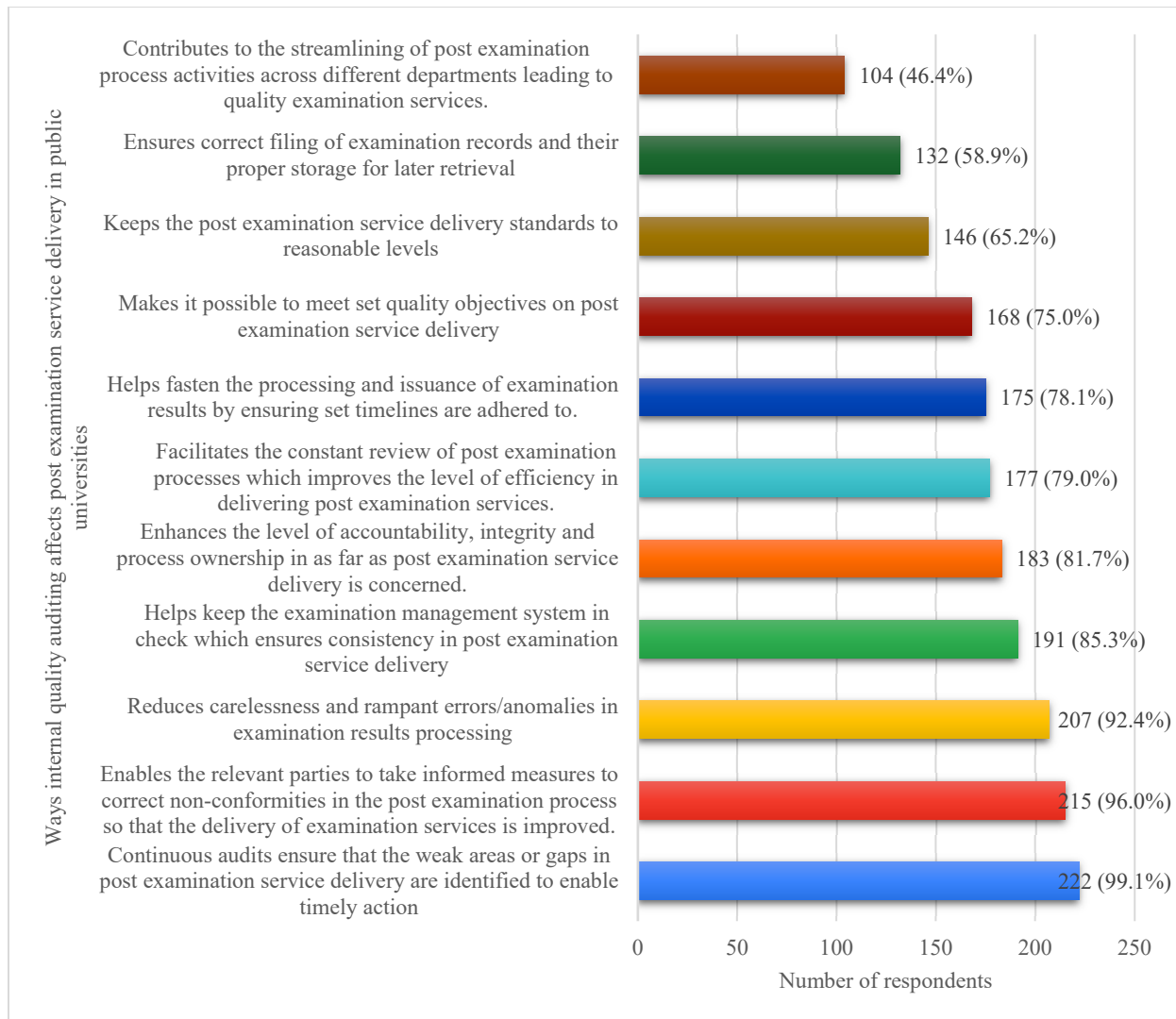
The above results reveal that the sampled examination coordinators on average agreed to four out of the five statements in the internal quality auditing construct. The highest mean score value for the construct was 4.201 while the lowest was 3.388. These findings were a demonstration that Kenyan public universities to a large extent carried out internal quality auditing as required under their ISO 9001:2015 quality management systems. However, there were still areas of internal quality auditing outlook that needed to be optimized so that the ISO 9001:2015 standard requirements are adequately met. In particular, the study noted that these institutions had a long way to go in ensuring that once internal quality audits are undertaken, the required corrective measures are implemented without undue delays. These findings supported the observation by Boiyon, Manduku, and Rotumoi (2020) that public universities in Kenya had not fully benefited from internal quality audits due to, for instance, the failure to act on the recommendations of internal quality reports on time.

The examination coordinators' perceived relationship between internal quality auditing as mandated under the ISO 9001:2015 QMS and post-examination services delivery is reflected in the findings presented in Figure 2 below. The findings from examination coordinators indicated that continuous internal quality audits were cited to be key in the timely identification of the weak areas or gaps in post examination services delivery by 222 (99.1%), while 215 (96.0%) in number, argued that internal quality auditing helped the relevant university teams to institute informed and timely corrective measures towards dealing with identified non-conformities in the post examination process. About 207 (92.4%) of these coordinators found internal quality audits reduced carelessness and rampant errors/anomalies in examination results processing while 191 (85.3%) observed that such audits assisted in keeping their institutions' examination management systems in check which ensured consistency in post examination service delivery.

According to 183 (81.7%) of the examination coordinators, internal quality auditing enhanced the level of accountability, integrity and process ownership in the post examination process, actions which improved post examination services delivery. Internal quality audits as pointed out by 177 (79.0%) of these coordinators also facilitated endless review of post examination processes and this resulted to efficient services. Continuous internal quality auditing as reported by 175 (78.1%) of the examination coordinators helped in promoting adherence to set university timelines leading to timely processing and release of examination results Internal quality audits were a means to achieving the set quality objectives, standards and accuracy in post examination services delivery as underlined by 168 (75.0%), 146 (65.2%) and 132 (58.9%) of the examination coordinators respectively. Such audits according to 104 (46.4%) of these coordinators helped in ensuring that post examination process activities across different departments were streamlined and this contributed to quality post examination services. Nonetheless, some examination coordinators, 75 (33.5%) decried that in some cases, the issues raised in the internal quality audit reports were not always expeditiously addressed while others, 57 (25.4%) in number, argued that there were many errors or areas of improvement which were not captured in such reports.







**Figure 2: Ways Internal Quality Auditing affected Post-Examination Services Delivery**

The key informants' sentiments generally supported most of the views given by the examination coordinators. The key informants reiterated that internal quality auditing improved post examination services delivery by mainly ensuring that all areas of non-conformity were identified and addressed and the right procedures and set requirements adhered to in service delivery. Overall, the above findings suggested that when efficiently exploited, internal quality auditing as required under the ISO 9001:2015 QMs in public universities in Kenya would considerably enhance post examination services. Gitura (2014) acknowledged that internal quality audits enabled the realization of an organization's quality objectives and ultimately their overall organizational objectives. The study by Giedt (2016) found that through internal quality audits, an organization was able to identify the system's nonconformity areas and also develop correction action plans which could be executed thus saving the organizations major costs related to customer dissatisfaction for instance. Karapetrovic (2010) also held that internal quality audits paved the way for continuous improvement within an organization.

### 3.3: The Relationship between the Internal Quality Auditing and Post Examination Services Delivery in Kenyan Public Universities

#### 3.3.1 Post-examination Services delivery in Kenyan Public Universities

The results provided in Table 2 shows the reaction of examination coordinators to various statements presented as a reflection of post examination services delivery in their universities.



**Table 2: Examination Coordinators’ Response on Post Examination Services Delivery**

<b>Statement</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree or Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Mean</b>	<b>Std. Dev.</b>
The grades and certifications awarded are always fair and unbiased.	1.80%	6.20%	15.60%	49.60%	26.80%	3.933	0.913
The quality of exam results is rarely questioned by students/other stakeholder.	1.80%	9.80%	21.90%	34.40%	32.10%	3.853	1.038
The number of petitions on faulty grades has declined immensely.	1.80%	8.00%	22.30%	42.40%	25.40%	3.817	0.965
Students able to promptly & easily access examination results once released.	1.80%	12.50%	18.80%	42.00%	25.00%	3.759	1.022
Examination results complaints and anomalies addressed on time, objectively and fairly	4.90%	7.60%	22.80%	45.10%	19.60%	3.670	1.032
Examination results released to students on time.	5.80%	16.50%	12.10%	43.30%	22.30%	3.598	1.171
Production of reports, graduation lists, transcripts and certificates quick and devoid of errors.	5.40%	20.50%	25.90%	29.90%	18.30%	3.353	1.154
There have been no reported cases of missing student marks in this university.	32.10%	26.80%	15.60%	21.40%	4.00%	2.384	1.247
<b>Composite mean and standard deviation</b>						<b>3.546</b>	<b>0.676</b>
<b>Valid n=224</b>							

As shown in Table 2, the examination coordinators on average agreed to six (6) out of the eight (8) statements presented where the highest mean score value for the construct was 3.933 while the lowest was 2.384. The composite mean value of 3.546 for the construct and its associated standard deviation 0.676 meant that on average, the examination coordinators agreed with most of the statements in the post examination services delivery construct. It was therefore argued that post examination services delivery in public universities in Kenya was largely satisfactory from the perspective of the examination coordinators expect for a few areas that pertained to the speed and accuracy in the production of reports, graduation lists, transcripts and degree certificates as well as the reported cases of missing marks. The views held by the examination coordinators were largely supported by the interviewed deputy registrars (examinations), directors of QMS and PC and directors, quality assurance.

Nonetheless, they contradicted the views held by the sampled students who seemed to complain about the post examination services delivered by their departments/faculties. The results in Figure 3 showed the level of students’ satisfaction with post-examination services delivery by their faculties or departments.





**Figure 3: Students' Satisfaction with Post Examination Services Delivery**

From the above findings, it was concluded that the post examination services delivered in public universities in Kenya were not perceived or considered entirely satisfactory by most of the students. This can be attributed to the various complaints the students had regarding these services for instance, the many unsettled cases of missing marks, delayed processing and release of results and unfair or inconsistent grades concerns also raised in several other studies such as Mwangi (2018) and Domeniter et al. (2018) which highlighted that there were several concerns or issues surrounding the delivery of post examination services in several universities. Table 3 summarizes the major concerns/complaints advanced by students pertaining to delivery of post examination services in public universities in Kenya.

**Table 3: Major Students' Complaints on Post Examination Services Delivery**

Complaints	Frequency	Percentage
Unsettled cases of missing marks	358	98.4
Delayed processing and release of results	353	97.0
Unfair or inconsistent grades	344	94.5
Poor handling of students with examination results related queries	340	93.4
Delayed release of results slips and transcript	316	86.8

### 3.3.2 Internal Quality Auditing and Post-Examination Services Delivery

The Pearson's correlation results presented in Table 4 demonstrated that internal quality auditing as required under the ISO 9001:2015 QMS was positively and significantly correlated with post examination services delivery in Kenyan public universities ( $r=.778, p=0.000$ ). The correlation was also deemed strong. These findings supported the observations by Karapetrovic (2010) that internal quality auditing was associated with enhanced service delivery. Boiyon, Manduku and Rotumoi (2020) however found a weak correlation between internal quality audits and the services delivered in Kenyan ISO 9001 certified public universities.

**Table 4: Correlation Matrix**

	Post examination services delivery	Internal Quality Auditing
	Pearson Correlation	1
Post examination services delivery	Sig. (2-tailed)	
	N	224
	Pearson Correlation	.778**
Internal Quality Auditing	Sig. (2-tailed)	0.000
	N	224

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

Bivariate regression analysis was conducted to determine the effect of internal quality auditing as per the ISO 9001:2015 QMS on post-examination services delivery in Kenyan public universities. The regression estimates in Table 5 showed that post examination services delivery in public universities in Kenya was positively and significantly





affected by the level of internal quality auditing as per ISO 9001: 2015 QMS given ( $\beta = 0.731, t = 18.465, p = .000$ ). This meant that holding all other factors constant, increased internal quality auditing as per the ISO 9001: 2015 QMS requirements in these universities would result to improved post examination services delivery by 0.731 units. With a calculated  $p$  value less than 0.05, the null hypothesis was rejected and this led to the inference that in deed, undertaking internal quality auditing as required under the ISO 9001:2015 QMS significantly affected post-examination services delivery in Kenyan public universities.

**Table 5: Regression Analysis Results**

Model	Significance of Regression Coefficient				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	0.884	0.147		6.016	0.000
Internal quality auditing (X)	0.731	0.040	0.778	18.465	0.000

a Dependent Variable: Post examination services delivery in public universities in Kenya

The bivariate regression model fitted is given by the following regression equation: -

$$Y = 0.884 + 0.731X$$

Where; **Y**= Post-examination services delivery in public universities in Kenya and **X**= Internal quality auditing as per the ISO 9001:2015 QMS

The above findings supported the observation by Mail, Sudjito, and Budi (2014) that ISO 9001 certified educational institutions which conducted systematic and consistent internal quality audits were able to enhance quality culture across all their services. Giedt (2016) demonstrated that internal quality audits reduced customers' dissatisfaction with services offered by organizations by supporting timely identification and correction of nonconformities in various processes. Internal quality auditing according to Kaziliūnas (2010) enhanced service delivery in organizations as they facilitated the identification of key opportunities for improvement and also yielded valuable feedback that could be used to boost the efficacy and effectiveness of key processes through creation of innovative solutions. Karapetrovic (2010) further argued that internal quality auditing was necessary in ensuring that the products and services offered by organizations met the stipulated requirements.

#### 4. Conclusions

The study concluded that the internal quality auditing in Kenyan public universities to a large extent complied with the requirements of their ISO 9001:2015 quality management systems. Nonetheless, the efficiency of internal quality audits in these institutions could be enhanced by ensuring that all the areas of service nonconformities are captured and their recommendations implemented on time and to the letter. The study also concluded that internal quality auditing significantly enhanced post examination services delivery in public universities in Kenya. Hence, it should be optimized as part of the ISO 9001:2015 QMS implementation.

#### 5. Recommendations

The study recommended that the management of Kenyan public universities should: -

- 1) Increase and sustain the resources allocated to internal audit units to facilitate regular and comprehensive internal quality audits that meet the ISO 9001:2015 QMS requirements. This way, nonconformities in post examination services delivery and the appropriate corrective measures can be identified on time.
- 2) Constitute independent teams/units that can regularly monitor and make follow ups on the progress made in adopting and executing the various recommendations for improvement as laid out in the shared internal quality audit reports.

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