

INFLUENCE OF ISO 9001:2008 QUALITY MANAGEMENT SYSTEM ON THE RELIABILITY OF SERVICES OFFERED IN PUBLIC UNIVERSITIES IN KENYA

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ABSTRACT

The purpose of this study was to determine the influence of ISO 9001:2008 Quality management systems on the reliability of services offered in Kenyan Universities. The study adopted correlation research design. The study population comprised of 305, 214 members of academic staff, administrative staff and students from 30 public universities in Kenya chartered by 2016. Simple random sampling was used to select 9 public universities from 30 public universities. From the selected 9 public universities, proportionate sampling was used to select 72 members of academic staff, 90 members of administrative staff and 222 students. Hypotheses were tested using linear regression analysis statistics at $\alpha = 0.05$ level of significance. The study established that ISO 9001:2008 QMS had significant influence on the reliability of service offered in public universities ($P < 0.05$ at a significance level of $\alpha = 0.05$) with 15.7%, 7% and 18.9% variations obtained from teaching staff, administrative staff and students' respondents respectively. The study concluded that the ISO 9001:2008 QMS has influenced university staff members on delivering on promises and performing the promised service dependably and accurately.

Keywords: ISO 9001:2008 QMS, reliability of services, public universities.

INTRODUCTION

The quality management standard, ISO 9000 contains ISO 9001:2008 that sets out the requirements of a quality management system, ISO 9000:2008 that covers the basic concepts and language, ISO 9004:2009 that focuses on how to make a quality management system more efficient and effective and ISO 19011:2011 that sets out guidance on internal and external audits of quality management systems. Organizations are certified to ISO 9001:2008 QMS that specify the requirements for a quality management system where an organization needs to demonstrate its ability to consistently produce quality product and services. ISO 9001:2008 QMS also aims to enhance quality product and services through effective application of the system continual improvement, the assurance of conformity to customer and applicable statutory and regulatory requirements (ISO, 2009).

However, concerns have been expressed in the developing economies on whether accredited certification to ISO 9001:2008 has been achieving the desired outcomes (United Nations Industrial Development Organization, 2012). The concerns centers on the quality of products and services offered by ISO 9001:2008 certified organizations and customer satisfaction. In an empirical study conducted by Goran (2014) on the analysis of the service quality perception in higher education in the University of Sarajevo in Bosnia, it was established that

the gap between the expected service and service delivered to students is on reliability of services. The work of Cheruyot and Malu (2013) in the study on service quality of public universities in East Africa found that the tangibility and reliability of service in public universities in Kenya, Uganda and Tanzania was not satisfactory to the students while importance of responsiveness of service was not emphasized at all by the universities. The findings imply that issues such as cultural orientation, leadership, strategic quality planning, human resource management system and continuous improvement of processes, people and systems needed improvement to satisfy the students.

The Kenyan government has emphasized that public universities are required to get certified to ISO 9001: 2008 QMS. The ISO 9001:2008 certification is expected to improve the reliability of services offered in the universities. The emerging service quality issues facing ISO 9001: 2008 certified Kenyan university calls for a closer examination of reliability of services. On the basis of the studies by Goran (2014) and Cheruyot and Malu (2013) on the investigations of service quality in learning institutions the researcher felt that it would be an unjustifiable supposition that ISO 9001: 2008 QMS influences reliability of services offered in public universities before an inquiry into the problem is undertaken. The current study investigated the influence of ISO 9001:2008 QMS on reliability of services offered in public universities.

Hypothesis

The following hypothesis was formulated for empirical testing at a significance level of $\alpha = 0.05$:

H₀1. ISO 9001:2008 Quality Management System has no statistical significant influence on the reliability of the services offered in public universities in Kenya.

The decision for accepting or rejecting null-hypothesis was based on reference to a p-value computed from the regression analysis. Null hypothesis was to be rejected if p-value was less than $\alpha = 0.05$ level of significance; and accept null hypothesis if p-value equals or greater than $\alpha = 0.05$.

LITERATURE REVIEW

Organizations seek ISO 9001:2008 certification for different reasons such as continuous improvement, reduction of waste, reaction to environmental factors, reaction from customers and competitors and business performance improvement (Terziovski, Power & Sohal 2003). Some organizations adopt ISO 9001:2008 QMS as a marketing tool (Withers & Ebrahimpour, 2000). Achievement of customer satisfaction, pressure from foreign partners, increase of market share, government demands and quality system efficiency improvement are the leading reasons for seeking ISO 9001:2008 QMS certifications as suggested by Lundmark and Westelius (2006). Zaramdini (2007) identified the following as the reasons for ISO 9001:2008 certification; improvement of processes and procedures, enhancement of product and service quality, improvement of productivity and efficiency, reduction of accidents, rejections and complaints, enhancement of public image and competitive advantage. Other organizations adopted ISO 9001:2008 as a first step towards total quality management (Gotzamani & Tsiotras, 2002). Organizations that are certified to the ISO 9001 QMS are escalating, but it does not necessarily indicate that the significance and importance of an effective ISO 9001:2008 QMS is clearly achieved (Low & Omar, 1997). The ISO 9001:2008 QMS must be constantly dynamic in order to improve the reliability of both the company's internal and external services.

Reliability is the ability to perform the promised service dependably and accurately. University students want to maintain good relations with university that keeps its promises, particularly promises about the service outcomes and core service attributes (Rajasekhar, Janardhana & Anjan, 2013). This can be achieved through keeping promises to do something, providing right service, consistency of performance and dependability and performing a service right at the first time. The students in higher levels of learning appreciate higher reliability of service, as the overall evaluation of service quality (Ndubisi, 2007). The ISO certified organizations are required to offer quality services that are implied in the reliability of services offered.

The ISO certification in educational institutions has both merits and demerits. In a study by Ajay (2004) on the strengths and weakness of ISO in vocational schools in USA, the findings indicated that there are strengths such as an improvement in leadership. However, a number of weaknesses of ISO 9001 were also reported, for example, the time consuming implementation process that reduces reliability of services. Fiorenzo, Maurizio, Domenico and Luca (2009) in the study on clustering of European countries based on ISO 9000 certification diffusion established that universities and institutions of higher learning at beginning stages of their quality journeys find that the ISO 9000 series of standards provides them with a guide for implementing a basic quality system with highly reliable services. But for universities and institutions of higher learning with good quality systems, the standard often just adds costs, delays and burdensome documentation, rather than providing any further improvement in quality of services.

In a study conducted to evaluate the reliability and performance of medical education services in Iran, it was found that a negative gap existed between perceptions and expectations of students in all quality dimensions of medical education services quality, including tangibles, assurance, responsiveness, reliability, and empathy (Mohammadkarim, Seyyed, Jamil, & Mehdi, 2013). The survey showed a negative gap indicating that the expectations of the students are not met in any of the items in the current educational system. The study however did not establish the QMS input into the reliability of service offered in the university which formed the contention of the current study.

A study by Goriwondo *et al.* (2012), on the challenges faced by manufacturing companies in sustaining conformance to ISO 9001:2008 in Zimbabwe, found that, many companies that implement ISO 9001: 2008 do not fully realize the associated benefits due to factors like leadership related issues, strategy related issues and quality systems related issues. This view is collaborated by Gudo, Oanda and Olel (2011) in the study on the role of institutional managers in quality assurance in Kenya where they established that ISO certification did not significantly improve reliability of services. However, it was important as a marketing tool that improves public image of the institutions that were ISO certified. The study to establish the influence of ISO 9001:2008 QMS on reliability of services offered in Kenya universities would help identify reliability inadequacies in the ISO 9001:2008 certified universities and guide relevant quality improvement plans.

Research Design

The study used correlational research design to establish the influence of implementation of ISO 9001: 2008 certifications on the quality of services offered in public universities. Correlational research design was appropriate to the study since the researcher relied on the views of the participants while collecting data from the respondents sampled from the

universities to describe the degree to which ISO 9001:2008 certification influences reliability of services.

Population and sample

The study population comprised of 305 214 members of academic staff, administrative staff and students from 30 public universities in Kenya chartered by 2016. It was an homogenous in terms of the responsibilities of the respondents and the quality standards as prescribed by the Commission for University Education. The 305 214 members of the population were scattered all over the 30 public universities in Kenya but the study randomly picked on 9 universities that were studied. Using the formula generated by Krejcie and Morgan (1970), the researcher selected 384 respondents for the study which comprised of 72 members of academic staff, 90 members of administrative staff and 222 students picked using proportionate sampling.

Data Analysis

After data collection the researcher systematically organized the questionnaires and carried out data cleaning. The other items from the questionnaires were arranged, grouped, coded and entered in the computer for analysis using the statistical package for social sciences (SPSS). The inferential statistics used to test hypothesis were linear regression analysis and analysis of variances which were computed and discussed.

Results and Discussion

The study hypothesized that ISO 9001:2008 Quality Management System has no statistical significant influence on the reliability of the services offered in public universities in Kenya. Service quality involves an attitude and is an evaluation over several service encounters (Parasuraman, Zeithaml & Berry, 1985), Quality of service offered depends on how the organization focuses on the service dimensions of quality (Zeithaml Bitner & Gremler, 2006). The dimension of quality on focus was the reliability of services.

To test the null hypothesis of the study, the researcher computed linear regression analysis to predict whether ISO 9001:2008 QMS Influences reliability of services offered in public universities at a significance level of $\alpha = 0.05$. The results for the teaching staff respondents are presented in Table 1.

Table 1: Regression Model for Teaching Staffs' on Reliability of Services

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.396 ^a	0.157	0.145	11.06365

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

The findings in Table 1 shows that ISO 9001:2008 QMS influence the reliability of services in ISO certified public universities. The co-efficient of determination (R^2) was obtained as 0.157. This implies that in the teaching staff respondents, there is statistical significant of 15.7% influence of ISO 9001:2008 QMS on the reliability of services in public universities or approximately 15.7% of the variation in the reliability of services offered in public university is influenced by ISO 9001:2008 QMS.

The findings for the regression coefficients model for teaching staffs' on reliability of services are presented in Table 2.

Table 2: Regression Coefficients for Teaching staffs' on Reliability of Services

	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	33.635	10.866		3.095	.003
ISO 9001:2008 QMS	.458	.127	.396	3.608	.001

Dependent Variable: Reliability of services

From the findings in Table 2, there is a significant influence of ISO 9001:2008 QMS on reliability of services offered in public universities evident in the computed significance value ($P = 0.001$, $P < 0.05$). The universities teaching staff revealed that if ISO 9001:2008 QMS reliability aspects are focused on and improved by 1 % (1 unit) then the reliability of services would increase by 0.458 units.

In order to compare the results of teaching staff respondents with other respondents of the study, the linear regression was computed for administrative staffs' to establish whether ISO 9001:2008 QMS predicts reliability of service in public universities. The findings for the administrative staffs' are shown in Table 3.

Table 3: Regression Model for Administrative Staffs' on Reliability of Services

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.265 ^a	0.070	0.060	8.74130

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

According to the findings in Table 3, ISO 9001:2008 QMS influences the reliability of services in certified public universities. The co-efficient of determination (R^2) value was found to be 0.070. This implies that in the administrative staff respondents, there is statistical significant of 7% influence of ISO 9001:2008 QMS on the reliability of services in public universities.

The findings for the regression coefficients model for administrative staffs' on reliability of services are presented in Table 4.

Table 4: Regression Coefficients for Administrative Staffs' on Reliability of Services

	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	56.874	7.845		7.249	.000
ISO 9001:2008 QMS	.243	.094	.265	2.583	.011

Dependent Variable: Reliability of services

According to the findings in Table 4, there is a significant influence of ISO 9001:2008 QMS on reliability of services offered in public universities evident in the computed significance

value ($P = 0.011$, $P < 0.05$). The universities administrative staff revealed that if ISO 9001:2008 QMS is improved by one unit, then the reliability of services would increase by 0.243 units.

The researcher further computed from the university students, a linear regression analysis to predict the influence of ISO 9001:2008 QMS on reliability of service in the public universities. The findings are shown in Table 5.

Table 5: Regression Model Summary for Students' on Reliability of Services

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.435 ^a	0.189	0.185	12.24344

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

The findings in Table 5 shows a linear regression analysis model summary used to predict reliability of services in ISO 9001:2008 certified public universities by the students. The coefficient of determination R squared value = 0.189. This implies that there is statistical significant of 18.9% influence of ISO 9001:2008 QMS on the reliability of services offered in public universities or a variation of 18.9 % of the reliability of service in public universities is as a result of ISO 9001:2008 QMS.

The findings for the regression coefficients model for students' on reliability of services are presented in Table 6.

Table 6: Regression Coefficients Model for Students' on Reliability of Services

	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	39.473	3.954		9.983	.000
ISO9001:2008 QMS	0.364	0.051	0.435	7.164	.000

Dependent Variable: Reliability of services

The findings in Table 6 show that ISO 9001:2008 has significant influence on the reliability of services offered evident in the computed significance value ($P = 0.00$, $P < 0.05$). The model reveals that predicted value of reliability of services increases by about 0.364 units for every 1 unit improvement on the ISO 9001:2008 QMS.

From the findings on the linear regression analysis of the three categories of the respondents in Table 1, Table 2, Table 3, Table 4, Table 5 and Table 6, it is revealed that the significant values obtained at a significance level of $\alpha = 0.05$ are: ($P = 0.001$, $P < 0.05$), ($P = 0.011$, $P < 0.05$) and ($P = 0.000$, $P < 0.05$) for the teaching staffs the administrative staffs and the students respectively. The null hypothesis, which suggested that the adoption of ISO 9001:2008 Quality Management Systems has no statistical significant influence on the reliability of the services offered by public universities in Kenya is thus rejected. This implies that for the three categories of respondents, the adoption of ISO 9001:2008 QMS has statistical significant influence on the reliability of the services offered in public universities

in Kenya. The predicted variations explained by ISO 9001:2008 QMS on the reliability of services were 15.7%, 7% and 18.9% from teaching staff, administrative staff and students respectively. The students' prediction was high considering that they are the core customers who need the accurate, consistent and dependable services. The administrative staff prediction was the lowest among the three categories since they play a central role in offering the reliable services to the customers and also a wakeup call for improvement in the overall reliability service construct.

To estimate the relative importance of each independent variable that was used to predict the influence of ISO 9001:2008 QMS on reliability of services, a multiple linear regressions was performed on the students responses considering the relatively high value of R squared as compared to the teaching staff and the administrative staff in the earlier computed regression analysis. The multiple linear regressions were computed using ISO 9001:2008 QMS independent variables that predict reliability of services namely; ability to perform promised service dependably and accurately. The findings are presented in Table 8.7.

Table 7: Multiple Regression Model for Students' on Reliability of Services

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.435 ^a	0.189	0.182	12.26989

a Predictors: (Constant), University staff members have the ability to perform the promised service accurately, University staff members have the ability to perform the promised service dependably.

From the findings in Table 7, the predictor variables of ISO 9001: 2008 QMS has statistical significance in predicting reliability of services offered in public universities with R Squared = 18.9% at significance level of $\alpha = 0.05$. This implies that 18.9 % of the variations on the reliability of service are as a result of ISO 9001:2008 QMS.

The findings for the multiple regression coefficients model for students on reliability of services are presented in Table 8.

Table 8: Multiple Regression Coefficient for Students on Reliability of Services

	Unstandardized Coefficients		Standardized Coefficients	t	Sig	Collinearity Statistics	
	B	Std. Error	Beta			Tol	VIF
(Constant)	39.610	4.008		9.883	.000		
University staff members have the ability to perform the promised service dependably.	3.426	1.063	.225	3.222	.001	.761	1.314
University staff members have the ability to perform the promised service accurately.	3.825	.957	.279	3.995	.000	.761	1.314

Dependent Variable: Reliability of services

The multiple regression was conducted without violating the assumptions of normality, linearity, and homoscedasticity. From the findings in Table 8 multicollinearity was diagnosed and established minimal to affect the results with tolerance value ($Tol > 0.10$) and Variance Inflation Factor (VIF below 10). All predictor variables had statistical significance in predicting reliability of services offered in public universities with ($P = 0.001$ & $P = 0.000$, $P < 0.05$). Therefore the null hypothesis is rejected. However the best predictor of quality of service between the two variables was the university staff members ability to perform the promised service accurately with unstandardized coefficient $B = 3.825$ as compared to university staff members ability to perform the promised service dependably with unstandardized $B = 3.426$.

The findings in this study reveal that there is a significant influence of ISO 9001:2008 QMS to the reliability of services offered in public universities. The findings concur with the study conducted by Osaki (2000) in Tanzania who established that in an education system where the top management is dedicated to providing timely resources for the learning process, the learners are confident of the reliable service offered and they are determined to perform well. The learners argue that they get timely services which have high consistency and regularity and maintained accuracy. These findings are also in agreement with the findings of the study by Mohammadkarim, Seyyed, Jamil, and Mehdi, (2013) who found that there was high reliability of services in the overall reliability construct in medical education services in Iran but rated it below marginally sufficient value to support effective and efficient learning.

The findings are also consistent with Walker and Johnston (2009) who studied the role of accreditation systems in impacting innate service quality in certified service providers in Victoria, Australia, and found that internationally acclaimed standards were meant to ensure best practice and quality services that are dependable and consistent in Australian Tourism Industry. Moturi and Mbithi (2015) also agree with the findings in the study where they reviewed the internal and external audit reports, internal review reports which included feedback from employees and students, international rankings and government of Kenya performance contracting assessments and noted that ISO 9001:2008 certification led to improved infrastructure and facilities; improved staff competence, morale and ownership amongst others eventually improving the reliability of the services offered in the university

CONCLUSION

The study concludes that the adoption of ISO 9001:2008 QMS in public universities has significantly influenced quality of service positively which is notable in the influence observed on reliability of service. ISO 9001:2008 QMS has influence on the reliability of services and as a consequence the university staff members are delivering on promises and performing the promised service dependably and accurately.

RECOMMENDATIONS

From the findings of the study, the researcher recommends that institutions of higher learning with ISO 9001:2008 QMS should use it as a guide to ensure improvement on the reliability of the services and also to ensure that the students' needs and the expectations are met and where possible exceeded on promises made and on accuracy deserving.

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