



## Research Article

# Relationship between Quality Management System Adoption and Organization Performance of Public Universities in Kenya

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Organizations' implication of adopting Quality Management System (QMS) and the resistance it generates negatively affects the performance of Higher Education Institutions (HEI). In Kenya between the period 2014 and 2015, HEI had been deprived of quality through a 6% government capitation cut and 28% increase in student numbers, with a 1:500 lecturers to student ratio and a 14.3% of the 28 week, academic year time waste. Studies on the relationship between Quality Management System adoption and organization performance revealed both positive and negative results. Past studies suggest that the relationship may be affected by other factors such as quality performance, innovation performance and organization performance. The purpose of this study is to establish the relationship between Quality Management System adoption and organization performance. Guided by Contingency Theory of organization structure, a correlation research design and a population of 215, management personal was used from 11 public universities in Kenya certified by Kenya Bureau of Standards. The study adopted a census survey with response at 94.4%. Primary data was collected using questionnaires. Qualitative data was analyzed using descriptive statistics such as means, frequency counts and percentages. The study hypothesis indicated that there was no significant correlation between organization performance and Quality Management System adoption; however, an alternative hypothesis was adopted since there was a positive significant correlation between the two variables. The study recommends the universities to maintain quality management systems, or improve them to ensure that they are institutions that offer quality services.

**Keywords:** Organization Performance, Quality Management System, Higher education institution

## INTRODUCTION

Globally, Quality Management System (QMS) has become an accepted technique to ensure performance and survival in the modern economies. Gado (2012), Ustuner and Coskun (2004), in order to facilitate and influence the quality issues globally, the International Organization for Standardization (ISO) was first published in 1987 and was subsequently revised in 1994, 2000, 2008 and 2015 to fit in an organization. Adoption of QMS represents the basic precondition of a firm's success and entrance into the global market (Hoyle, 2009). Organization quality in the form of a Quality Management System (QMS) well embedded in business

organizations and industry context, (Deming 1986, Green 1994), its adoption is a voluntary process supported by organization's own strategy, motivations, policies and goals.

The quality management programs in any country improves both management practices and organization efficiency processes that translates into improved organization productivity, which is magnified if the customers and the end users interprets the adoption as a signal of high quality product or service (Juran, 1989, Mittal, 1999 and Gado, 2012). This is in support of Rahman *et.al* (2010), on their study findings; the traditional academic approach to control and maintain quality in higher education institutions appears to be less effective and linked to the day activity to fit on the prevailing systems.

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QMS has helped HEI be more creative, innovative and determined in developing and managing the quality education standards. However, Dobrzański and Roszak, (2007) and Mizikaci, (2006) revealed that quality being powerful strategy in international competition and trade enables firms to increase their market share and profitability.

In connection to the recent rise of students and academic staff unrest in year 2012 to year 2017 academics and none academic staff irrespective of the court orders, indicate disagreement between the stakeholders and the university staff. Public universities are obliged to comply with regulatory requirements for transparency in governance and financial management, as well as accountability to the stakeholders and the public (Makawiti 2011, Gaither and Maassen 1998, Ford, 2006). From these studies it is clear that the studies have not explored Quality Management System adoption in public universities, and none of the studies have concentrated on the effectiveness and efficiency as elements of performance and Quality Management System adoption in Kenyan Universities. Further contradictions in this past studies reveal that it remains unknown of the Quality Management System relationship with performance in service institutions especially public higher education institutions in Kenya. Therefore, this study seeks to establish the relationship between Quality Management System adoption and organization Performance of public universities in Kenya. The study adopted structural contingency theory since it not only highlights the significance of effective and appropriate alignment between people, organizational structure but organization culture and the necessary changes that foster a drastic step toward the desired future state with better usefulness.

## LITERATURE REVIEW

Njeru (2016), Assessed the relationship between total quality management and employee performance in public universities in Kenya. The study adopted a case study research design with a targeted population of 215 employees included top management, middle management and lower level management. The findings revealed that there was a strong positive relationship which was statistically significant between the independent variables (Employee Performance) and the dependent variable, (Training, Quality Management Systems, Employee Involvement and Leadership). The study only focused on one variable that influences TQM implementation and the study scope entailed one public University. The current study will be based on QMS certified public universities in Kenya.

Gulali *et al.* (2013) study on the effect of implementing QMS on the performance of public universities, revealed that QMS implementation had a positive impact student enrolment and, infrastructural growth. The study only

focused on one public university and the population was based on the non-teaching personal. The current study will be based on all QMS certified public universities in Kenya whose third party certifying body is Kenya Bureau of Standards.

Zhang (2006), conducted a study on the implementation of total quality management, an empirical study of Chinese firms, where he analyzed the following variables on TQM implementation, leadership, supplier management, vision and plan statement, evaluation, process control and improvement, product design, quality system improvement, employee participation, recognition and reward, education, training and customer focus, where employee participation and training had a stronger relationship on implementation of total quality management programs in the manufacturing sector in China. Although this study focused on all TQM variables and employee participation as one variable in organization efficiency, yet it ignored Industrial Moral and goodwill and also organization time. Moreover, the study was conducted in China Manufacturing sector.

Kamau (2015) developed a detailed study on the relationship between human resource management and staff retention in public hospitals in Kenya. His study idealized the use of reward practices, training and health and safety practice to boost employee performance and aid in attraction, motivation and staff retention. Kamau (2015) using the equation of *ceteris Paribas*; the staff retention at Gatundu District Hospital was 2.174. A unit increase in Reward Practices led to a 0.116 increase in the staff retention at Gatundu District Hospital. A unit increase of employee training would lead to a 3.512 increase in staff retention at Gatundu District Hospital; a unit increase in health and safety leads to a 0.059 increase in staff retention at Gatundu District Hospital. Therefore according to the study findings employee training contributes more to staff retention and industrial good will. The study however only focused on efficiency in Hospital and did not embrace the virtue of existence of any QMS standards.

While studying on the influence of employees' involvement in performance assessment system on employees' creativity of sales and engineering departments of Ebtakar manufacturer Sayyed (2012) undertook an empirical survey and analyzed data by descriptive analytical methods. A sample size of 97 employees was selected by simple random. In the study by Sayyed (2012), questionnaires were used for data collection and structural equation modeling was used for data analysis. The results of the study by Sayyed (2012) showed that all effects were adopted with the theoretical framework. Therefore, the variable of employees' involvement in performance assessment system positively influences the employees' abilities and skills to create creativity.

Garry (2002) in a study on measuring public sector efficiency, a study at the Economic Department in

Australia University, this study compared the initial and subsequent performance of economics departments. The analysis applied survey data to a non-parametric data envelopment analysis model. Model results suggest that while overall performance has improved substantially, further productivity improvements are required for new universities to achieve best practice. Moreover, the problems associated with measuring financial performance and programme effectiveness in government, productivity measurements are regarded as performance indicators.

Moturi&Mbithi (2015) The purpose of this paper is to present the experience and impact of implementing the ISO 9001: 2008 Standard at the University of Nairobi, in relation to effectiveness on service delivery, operational performance, automation, implementation challenges and related emerging issues. The paper adopted a case study design approach based on qualitative analysis of internal audit reports, internal surveys and feedback, surveillance audits conducted by the certifying body, and rankings by external bodies, over a period of seven years. Significant achievements have been realized with regard to institutionalization of quality into the university processes, work environment, documentation and record management, customer satisfaction, infrastructure and facilities, use of ICT as a prime mover of performance improvement, and ranking of the university. Opportunities for improvement as well as critical success factors are presented.

Ochieng, Muturi&Njihia (2015), the purpose of this paper is to establish the effect of ISO 9001 implementation on the performance of organizations in Kenya. It specifically targeted organizations listed on the Nairobi Securities Exchange (NSE) which is the leading securities exchange in East Africa. The survey made use of web content analysis to collect data from these organizations' web sites. Data were collected on net profit, turnover and net assets over a four-year period (2010-2013). The research used statistical data analysis to investigate the association between ISO 9001 implementation and performance. Results of the survey reveal that ISO 9001 certification influenced return on net assets of the organizations 0.05 ( $p < 0.01$ ) statistics analysis of significance of variation, thereby influencing their performance. There were significant differences in net asset value among organizations with ISO 9001 certification and those that did not possess the certification. On profit and revenue, there were no significant differences between the ISO 9001 certified and non-certified organizations.

Joanna (2014), evaluation and explanation of efficiency in higher education in Europe and the U.S. That study found that efficiency is correlated to features which are prevalent in the UK system, such as evaluation by stakeholders and/or independent agencies, and high levels of autonomy in the areas of recruitment and human resources strategy. The UK scored highest on both of these measures.

Kimani and Bichanga (2013) sought to the effectiveness of ISO certification on service delivery in public universities in Kenya. The study sought to identify the effectiveness of ISO 9001:2008 on service delivery in ISO certified public universities in Kenya and establish the effects of adaptability to changing market need, teaching facilities improvement, curricular development and streamlining of processes as a result of ISO certification. The findings of this study indicated that streamlining of processes as a result of ISO certification influences the public universities' service delivery most, followed by curricular development, teaching facilities improvement and adaptability to changing market needs. This study was limited to a sample of 200 students who are the primary customers to institutions of Higher Learning. The current study will adopt a census survey on top management personal of public institutions that are believed to be the driving force towards performance in an organization.

Thuo (2013) developed a study to establish how the performance of service organizations is influenced by the adoption of ISO 9001QMS standards. The study applied a descriptive survey of 53 service organizations with target respondents being operations managers, quality managers and implementers of ISO 9001 QMS in the respective organizations. Thuo, (2013) study established that the implementation of ISO 9001 is beneficial in terms of improving the operational performance and that the most important factors that guided the implementation efforts are external coordination and internal integration as these were the most important for both internally and externally motivated organizations. The study only focused on organization effectiveness and QMS while the current study will be based on organization productivity.

ThiagaraganZairi Dale, (2001) an empirical study on TQM implementation in the Malaysian industrial context. The study was to identify quality factors for effective TQM implementation, which are critical for TQM to flourish in Malaysian industries, and to understand the dynamics of TQM implementation in a Malaysian context. ThiagaraganZairi, Dale (2001) from a theoretical standpoint, the development of empirical research in TQM has lagged far behind the fast-growing acceptance of TQM as a management philosophy for improving organizational effectiveness. The problem is even more acute outside the developed world where knowledge or TQM is almost non-existent. Moreover, from an application standpoint, the framework is aimed at increasing the degree of effectiveness in implementation by assisting Malaysian managers to develop a step-wise implementation roadmap.

According to Yeung, Lee and Chan (2003) While ISO 9000 certification is increasingly becoming 'a passport for businesses in the marketplace, its effectiveness in enhancing an organization's performance is highly controversial. In recent years, some researchers have

argued that the effectiveness of ISO 9000 is highly dependent on management’s attitudes to and understanding of the standard. Yeung, Lee and Chan (2003) empirical study on gaining ISO certification and the ‘attitudes to implementation’ and ‘confidence of understanding the standard’ among senior management affect the development of a quality management system (QMS) and subsequently organizational performance.

Regarding the demand for increased quality, several authors have introduced quality management principles into various aspects of organization performance based on efficiency and effectiveness. Njeru (2016); Zhang (2006); Kamau (2015); Sayyed (2012); Moturi&Mbithi (2015); Ochieng, Muturi, &Njihia (2015); Joanna (2014) conducted studies on organization effectiveness and quality management system, and revealed both positive and negative results. Kimani, and Bichanga (2013); Thuo, (2013); Thiagaragan, Zairi and Dale, (2001); Yeung, Lee and Chan (2003), studies on organization Effectiveness and QMS, both revealed a positive and negative correlations basing on organization performance. Drawing on the development of notions of efficiency and effectiveness in Higher Education Institutions (HEI) reviewed in an earlier section, Joumady and Ris (2005); Garry (2002); Zhang (2000) established cost and outcome performance as complementary dimensions in the operations of HEI. From their study, the definitions of cost and outcome efficiency, is on first degree, higher degree and research and were based on one or two organization effectiveness variable. Moreover, the assessment of the organization performance of an individual university has rather a centralized character as its results have an implication on the policy of the funding bodies basing on the different systems adopted by several organizations and anchored on one or two organization effectiveness variables. No study focused on the relationship, only based between quality management system and organization performance. This study will not only focus on this gap but ensure that it has used; Job satisfaction, Growth and Expansion and Student Enrolment, Transfer and Graduation as organization effectiveness variables.

**MATERIALS AND METHODS**

The study will adopt a correlation design. Correlation research design aims to ascertain if there are significant associations between study variables (Kothari, 2004), on 11 public universities in Kenya who attained QMS certification through KEBS. A target population is that group of people from whom the study is designed and generalizations of the findings are made from (Kothari, 2004). The study unit of analysis will entail organization management personal in the 11public universities. This will not include the other subsidiaries either operating under the principal University umbrella or name.

A census survey approach was adopted and a sample frame obtained from the 215 management Personnel based on 11 vice chancellors, 38 deputy vice chancellors, 11 finance officers, 25 registrars, 106 deans and 11 librarians. Primary data was collected using questionnaires from senior and top managers. Questionnaires were much preferred by the study since it can be used to gather data to a large number of respondents at different geographic location in a short span of time and within minimum expense (Meller 2001, Grinnell, 2001).

Data collected was analyzed quantitatively using descriptive statistics such as means, frequency counts and percentages to compare variables numerically and ascertain a pattern in the data set. Further inferential statistics, Chi-square test at 95% confidence interval will be used to compare the difference between categories frequencies when data is categorical and drawn from a population with a homogenous distribution (Oso and Onen, 2009). To achieve the study objectives the study will measure the degree of association.

The study adopted multiple regression model to determine the relationship between the variables of the study (adopted from Aiken and West, 1991); such that:

$$Y_j = \beta_0 + \beta_1X_j+e \dots\dots\dots i$$

**Where:**

- $\beta_0$  coefficient of the predictors
- $\beta_1$  regression coefficient to be estimated
- $Y_j$  coefficient of a single organization performance indicator (Organization efficiency, Organization effectiveness)
- $X$  theoretically defined independent variables (Quality policy, Process planning, continual improvement, Investment in material and human resource, streamlining process)
- $e$  error term/ residual factor not explained by the  $X$  variables analyzed.

**FINDINGS**

The objective of the study was to establish the relationship between quality management system adoption, and organizational performance of public universities in Kenya. Before achieving the objective, the study sought to determine the extent ofquality management system adoption among the universities. Respondents were asked to share their opinions on various items under the Quality Management System Adoption (Quality Management System Adoption) subscale. The items mainly addressed the few aspects that were deemed to be the composition of the subscale. These were frequency of review of the meetings, QMS audit, QMS budget, implementation of follow up audits, effective infrastructure establishment,

**Table 1 Quality Management System Adoption**

Quality Management System Adoption	NAL f(%)	LE f(%)	ME f(%)	LE f(%)	VLE f(%)	M	STD
University Management Review meetings are held at least twice a year	0(0.0)	38(23.0)	8(4.8)	63(38.2)	56(33.9)	3.84	1.13
Internal QMS audits are done twice a year in our University	0(0.0)	21(12.7)	59(35.8)	41(24.8)	44(26.7)	3.66	1.01
There is always budget set for QMS in our institution	4(2.4)	12(7.3)	72(43.6)	37(22.4)	40(24.2)	3.59	1.01
Follow ups in the audits done are implemented immediately	12(7.3)	21(12.7)	40(24.2)	64(38.8)	28(17.0)	3.44	1.13
There is effective infrastructure established in our institution	4(2.4)	29(17.6)	59(35.8)	65(39.4)	8(4.8)	3.27	.89
There are good established procedures in each department	4(2.4)	21(12.7)	46(27.9)	50(30.3)	26(26.7)	3.66	1.08
All the staff in our institution are aware of the QMS	12(7.3)	12(7.3)	32(19.4)	77(46.7)	32(19.4)	3.63	1.10

KEY: NAA-Not at All, LE-Large Extent, ME-Moderate Extent, VLE-Very Large Extent, M-Mean, SD-Standard Deviation.

Source: Research data 2017

procedure establishments and awareness of QMS by the staffs. This composite variable consisted of 7 items all measuring QMS on a five-point Likert scale of 1-5, where 1 = Not at all, 2 = little extent, 3 = Moderate extent, 4 = To a large extent and 5 = A very large extent. Frequency counts, percentages, means and standard deviations were the main tools of analysis on the measurement of this construct. The findings are presented as shown in Table 1.

The findings on the extent of adoption of Quality Management System are presented as shown in Table 1. From the findings, majority, 63(38.2%), of the respondents indicated to a large extent that the university Management Review meetings are held at least twice a year. A mean and standard deviation were also obtained indicating a moderate extent of this practice (M=3.84, SD=1.13). The findings however, indicates that the practice of internal QMS audits twice a year in the universities was to a moderate extent, (M=3.66, SD=1.01) as also supported by majority, 59(35.8%) of the respondents. Furthermore, from the findings, majority 72(43.6%) indicated to a moderate extent that there is always budgets set for QMS in institutions, therefore the practice was carried out to a moderate extent (M=3.59, SD=1.01). Clearly, the findings on the follow ups of the implementations of the audits done are carried out to a moderate extent (M=3.44, SD1.13) even though majority, 66(38.8%) of the respondents indicated that the practice was to a large extent. The findings further indicate that to a large extent as revealed by majority, 65(39.4%), there is effective infrastructure established in institutions (M=3.27, SD=.89). Furthermore, there are moderately (M=3.66, SD=1.08) good established procedures in each department, even though majority, 50(30.3%) indicated that it was to a large extent. Finally, the findings revealed that to a large extent, as indicated by majority, 77(46.7%) of the respondents, all the staffs in institutions are aware of the QMS. A practice that was to a moderate extent (M=3.63, SD=1.10), which was considered a good practice of QMS adoption in the universities.

In addition to these findings, a summary statistic on the means and standard deviations of the Quality management systems adoption and organizational performance were presented as shown in Table 2 that follows.

**Table 2**

Variables of the Study	M	SD
Mean Quality Management System Adoption	3.58	.72
Organizational Performance (Efficiency; Organization strategy)	3.79	.61
Organizational Performance (Efficiency; Corporate Structure Design)	3.23	.68
Organizational Performance (Efficiency; Employee Commitment)	3.15	.97
Organizational Performance (Effectiveness; Organization growth and expansion)	3.80	.74
Organizational Performance (Effectiveness; Job Satisfaction)	3.36	.81
Organizational Performance (Effectiveness; Customer Satisfaction)	3.40	.68
Mean Organizational Performance (Efficiency)	3.39	.64
Mean Organizational Performance (Effectiveness)	3.52	.62
Mean Organizational Performance	3.45	.60

Source: Research data 2017

The findings in Table 2 indicate an overview of the summary measures of the organizational performance and quality management system adoption using means and standard deviations. From the findings, it's clear that the measures range between 3.15 and 3.80. For organizational performance, the highest measure was under effectiveness, specifically growth and expansion (M=3.80, SD=.74). Customer satisfaction was the second after organizational growth and development (M=3.40, SD=.68) while job satisfaction was the least (M=3.36, SD=.81). The overall mean under organizational

effectiveness was also high, (M=3.52, SD=.62), implying that the universities performed well under organization effectiveness. This compared with quality management system adoption (M=3.58, SD=.72), is slightly low resulting to a deviation of 0.06, which is very small deviation.

The second construct under organizational performance was the efficiency. The findings indicates that the highest score was under organizational strategy (M=3.79, SD=.61). The was followed by corporate structure design (M=3.23, SD=.68) and finally employee commitment (M=3.15, SD=.97). The overall mean under organizational efficiency was slightly lower (M=3.39, SD=.64) than quality management system adoption (M=3.58, SD=.72). This results in a deviation of 0.35. This deviation is larger than that obtained between organizational effectiveness and Quality Management System Adoption.

A final comparison between the constructs of organizational performance and Quality Management System Adoption shows that Quality Management System Adoption was high (M=3.52, SD=.72) as compared to the

overall mean on organizational performance (M=3.45, SD=.60). This implies that the universities exhibited a good performance, even though not yet attained the required level to qualify into very high performance. Quality Management System Adoption on the other hand is also highly practiced and could attain the required level of performance.

**Correlation between Quality Management System Adoption and Organizational**

The first objective of the study was mainly to establish the relationship between quality management system adoption and organizational performance among the universities. To achieve this, the obtained scores of the three categories of the organizational performance were correlated with Quality Management System Adoption using bivariate correlations, specifically, Pearson Product moment correlation. Table 3 indicates the findings between the seven subscales of performance and the independent variable (Quality Management System Adoption).

**Table 3:** Correlation between Quality Management System Adoption and Organizational Performance subscales.

Variables	1	2	3	4	5	6	7
1 Quality Management System Adoption	1	.694**	.504**	.598**	.392**	.407**	.542**
2 Organization strategy		1	.589**	.607**	.381**	.622**	.557**
3 Corporate Structure Design			1	.545**	.409**	.614**	.708**
4 Employee Commitment				1	.505**	.616**	.657**
5 Growth and expansion					1	.577**	.515**
6 Job Satisfaction						1	.595**
7 Customer Satisfaction							1

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

Source: Research data 2017

The findings in Table 3 indicates that there was a strong positive correlation between quality management system adoption and organizational strategy (r=.694, p<.05). Quality Management System Adoption and corporate structure design revealed moderate positive correlation (r=.504, p<.05), as was the case with the Quality Management System Adoption and employee commitment (r=.598, p<.05), and Quality Management System Adoption and customer satisfaction (r=.542, p<.05). Quality Management System Adoption and job satisfaction also revealed a moderate positive significant correlation (r=.407, p<.05). However, there was a low positive significant correlation between Quality Management System Adoption and organizational growth and expansion (r=.392, p<.05). These findings imply that Quality Management System adoption was positively associated with every aspect of organization performance and therefore the more the universities improve their Quality Management System Adoption the better the performance. For organizational strategy, the relationship is stronger than the others implying that performance is heavily dependent on the organizational strategies of the universities.

A breakdown of the correlation between Quality Management System Adoption and the two categories of performance was also carried out. The categories were mainly organization performance efficiency and effectiveness. The scores of Quality Management System Adoption were therefore correlated with those of the two variables of organizational performance. The findings are presented as shown in Table 4 that follows.

The findings in Table 4 indicates that there was a strong positive significant correlation between Quality Management System Adoption and organizational performance efficiency (r=.700, p<.05). Effectiveness of organizational performance however did have a moderate positive significant correlation with Quality Management System Adoption (r=.526, p<.05). These findings imply that efficiency of organizational performance was highly associated with Quality Management System Adoption as compared to effectiveness. Nevertheless, as each aspect of organizational performance improves with improvement in Quality Management System Adoption of the universities.

**Table 4: Correlation between organizational efficiency, effectiveness and Performance**

		Mean Quality Management System Adoption	Mean Organizational Performance Efficiency	Mean Organizational Performance Effectiveness
Mean Quality Management System Adoption	Pearson Correlation	1	.700**	.526**
	Sig. (2-tailed)		.000	.000
	N	203	203	203
Mean Organizational Performance Efficiency	Pearson Correlation	.700**	1	.791**
	Sig. (2-tailed)	.000		.000
	N	203	203	203
Mean Organizational Performance Effectiveness	Pearson Correlation	.526**	.791**	1
	Sig. (2-tailed)	.000	.000	
	N	203	203	203

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

Source: Research data 2017

order to attain the overall correlation between the organizational performance and Quality Management System Adoption, a mean of all the scores of organizational performance was correlated with the Quality Management System Adoption score. The findings are presented as shown in Table 5 that follows.

**Table 5: Correlation between Organization Performance and Quality Management System Adoption**

		Mean Quality Management System Adoption	Mean Organizational Performance
Mean Quality Management System Adoption	Pearson Correlation	1	.649**
	Sig. (2-tailed)		.000
	N	203	203
Mean Organizational Performance	Pearson Correlation	.649**	1
	Sig. (2-tailed)	.000	
	N	203	203

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

Source: Research data 2017

From the results in Table 5, it is clear that Quality Management System Adoption had a strong positive significant correlation with organizational performance ( $r=.649$ ,  $p<.05$ ). This implies that as Quality Management System Adoption increases, there is an increase in organizational performance. It can therefore be deduced from these findings that there is a strong positive significant association between organizational performance and Quality Management System Adoption. Further insight on the correlations revealed quite interesting results. As an approach to get the percentage variance that quality management system adoption explained over each of the construct of the organizational performance, the correlation values were squared. Starting with the correlation between quality management system adoption and organizational strategy, the value (.694\*\*) was squared to obtain a value of 0.481636, which when rounded off to two decimal places, results to 0.48.

This value was then multiplied by 100% to achieve the percentage variance in organizational strategy explained by quality management system adoption as 48%. The rest of the variances in organizational performance explained by quality management system adoption were not very far from the first one. Quality management system adoption explained 25% for corporate structure design, 35% for employee commitment, 15% for growth and development, 16% for job satisfaction and 29% for customer satisfaction. When the organizational performance was classified under effectiveness and efficiency, quality management system adoption was found to account for 49% organizational performance efficiency and 27% for organizational performance effectiveness. An overall variance in organizational performance explained by quality management system adoption was 42 percent. It can be concluded that organizational performance is strongly correlated to quality management system adoption and therefore the two variables are strongly associated. Therefore, quality management system adoption may influence organizational performance.

The study sought to determine relationship between Quality Management System adoption and organization Performance of public universities in Kenya. As observed by Njeru (2016) employee training, quality management systems, employee participation and leadership in Kirinyaga University, that Quality Management Systems contributes more to increase Employee Performance and there was a positive relationship on the study variables. However, the study only focused on one public University. This is in support to the study findings as Quality Management System adoption was positively associated with every aspect of organization performance from which employee performance was tested as one of the organization performance attributes.

The study findings indicate that as Quality Management System Adoption increases, there is an increase in organizational performance. It can therefore be deduced that there is a strong positive significant association between organizational performance and Quality

Management System Adoption. These findings supports those by Kasongo (2010) who indicated that quality management system, customer focus, process and data quality management, quality tools and techniques implementation significantly affect the company's performance. The study findings also supports those by Gulaliet *al.* (2013), Zhang (2006), and Faisal *et.al* (2013) who asserts that QMS implementation impacts student enrolment and, infrastructural growth of an organization moreover, TQM practices are partially correlated with quality performance and that quality culture was perceived as the dominant TQM practice in quality performance.

These study findings are also in line with, Moturi & Mbithi (2015), Sayyed (2012), Falola, Osibanjo (2014) study results indicate that by Increasing employee involvement in performance assessment system, perception of employee and organization efficiency will increase too. On the other hand, the presence of Quality Management System Adoption and corporate structure design revealed moderate positive correlation with Quality Management System Adoption and employee commitment. This is in support to Kamau (2015) study that revealed that a unit increase of employee training lead to an increase in staff retention moreover, a unit increase in health and safety leads to an increase in staff retention, Ochieng, Muturi&Njihia (2015)., Moturi&Mbithi (2015) who explains the difference on organizations that have adopted QMS and those that have not adopted QMS.

Further, the findings of this study are in support to Kimani and Bichanga (2013), Karani, &Bichanga (2012), who found out that streamlining of processes as a result of ISO certification influences the service delivery of an organization, and that the most important factors that guided the implementation efforts for Quality Management System are external coordination and internal integration as these are the most important for both internally and externally motivated organizations. The findings were also in support to Thuo (2013) study who observed that organizations are particularly keen to coordinate with the critical stakeholders in their environment when they are implementing the standard but the daily adherence to the application of the quality management system (ISO 9001) seems somewhat weak, and ThiagaraganZairi Dale, (2001),Yeung, Lee and Chan (2003) construction of the TQM implementation framework is primarily based on findings representing the experiences of TQM organisations management and its employees.

Using Pearson product moment correlation, the study revealed that organizational performance had a positive significant correlation with Quality Management System adoption ( $r=.649, p<.05$ ). The correlation between Quality Management System Adoption and organizational strategy was the highest ( $r=.694, p<.05$ ) while the least was exhibited between organizational growth & development forms of performance and Quality Management System Adoption( $r=.392, p<.05$ ). For the two forms of organizational performance, Quality

Management System Adoption and organizational efficiency had the strongest significant correlation ( $r=.700, p<.05$ ) as compared to effectiveness and Quality Management System Adoption correlation ( $r=.526, p<.05$ ), which was moderate. The study hypothesis indicated that there was no significant correlation between organization performance and Quality Management System adoption, however, an alternative hypothesis was adopted since there was a positive significant correlation between the two variables.

## SUMMARY

The objective of the study sought to establish the relationship between Quality Management System adoption and organization Performance of public universities in Kenya. Using Pearson product moment correlation, the study revealed that organizational performance had a positive significant correlation with Quality Management System adoption ( $r=.649, p<.05$ ). The correlation between Quality Management System Adoption and organizational strategy was the highest ( $r=.694, p<.05$ ) while the least was exhibited between organizational growth & development forms of performance and Quality Management System Adoption( $r=.392, p<.05$ ). For the two forms of organizational performance, Quality Management System Adoption and organizational efficiency had the strongest significant correlation ( $r=.700, p<.05$ ) as compared to effectiveness and Quality Management System Adoption correlation ( $r=.526, p<.05$ ), which was moderate. The study hypothesis indicated that there was no significant correlation between organization performance and Quality Management System adoption, however, an alternative hypothesis was adopted since there was a positive significant correlation between the two variables.

## CONCLUSION

From the findings, it is clear that there was a strong positive correlation between Quality Management System adoption and Organizational Performance. Quality management system Adoption, is strongly related to performance and therefore as the Quality management system adoption increases, the performance of the public universities increases. It is thus clear that there is an alignment between the two strategic issues in most of the public universities in Kenya. Therefore, universities performance in the measured aspects thrives due to the continuous improvement and adoption of the quality management systems.

## RECOMMENDATION

The study recommends the universities to maintain quality management systems, or improve them to ensure that they are institutions that offer quality services. The results will be good performance, which can render them unique or in a position to fulfill the scientific requirements internationally.

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