Influence of quality management systems on the relationship between administrative systems and performance of Kenyan public universities

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Full Length Research Paper

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In recent years there have been attempts to import business models from the private sector into higher education systems and institutions in an attempt to improve their performance. This has led to the emergence of a debate on the applicability of Quality Management Systems (QMS) principles, methodologies and tools to the higher education sector and their relationship with performance of those institutions. There exists a lot of research on the importance of Quality Management Systems and how it impacts on performance of organizations in general. However, there is little research that specifically focuses on the influence of QMS on the relationship between internal factors and performance of Public Universities in Kenya. This study sought to establish the influence of QMS on the relationships between administrative systems on the performance of Public Universities in Kenya. The study adopted a survey design which allowed for easy sampling and analysis of data. Seven certified public sponsored Universities published by the Commission for Higher Education in Kenya were sampled. Structured questionnaires were used in the collection of data. A pilot study was conducted to check for the reliability and validity of the questionnaire instruments. SPSS software was used in analyzing and interpreting data that was collected. The findings of this study demonstrated that QMS played a huge influential role between administrative systems and the performance of Kenyan public universities. This meant that administrative systems, with the influence of QMS as a moderating factor had a positive contribution to the change in the performance of Kenyan public universities. The results obtained from study will be beneficial to a range of beneficiaries, among them; scholars in the subject of management; researchers who will use the results as a contribution towards the advancement of knowledge in the subject area; Government officials and university management will in particular, benefit from the knowledge on the linkages between QMS and its influence on internal factors and the performance of public universities in Kenya. The study recommended that for Kenyan universities to realize the dreams of a majority of Kenyans s envisioned in Vision 2030 and the 2010 Kenyan constitution, they all should proactively adopt QMS in their operations across all internal factors in order to improve their performances.

Key words: Quality management systems, administrative systems, internal factors and organizational performance.

INTRODUCTION

Background of the study
In the last decades, several factors have contributed to raising public concern over higher education institutions' quality. This has led to the emergence of quality measurement and improvement devices such as performance indicators, accreditation, programme and institutional assessment and quality audits. According to Redmond, Curtis, Noon and Keenane (2008), a Quality Management System in its basic concept seeks to: Recognize the external quality related requirements specified in Licenses to Trade, guidelines, specified customer requirements, and the chosen management...
chancellors in Kenya, such officers are now, constitutionally, picked by the university community and alumni. This brings to an end an era in which university leaders were appointed by the president of Kenya. This change has been welcomed by a number of scholars who are of the view that change programs in organizations such as institutions of higher learning largely depend on an organization’s human resources (Jackson and Schuler, 2000; Weigl, Hartmann, Jahnns, and Darkow 2008). They have indeed postulated Organizational Development and change programs as part of an organization’s internal systems, including quality management systems. Thus, the internal factors utilize the theories of change and their relationship to an organization because change affects individuals, groups and organizations. Internal systems have been positioned as a strategic partner in many organizations for facilitating organizational change (Jackson and Schuler, 2000; Dessler, 2003; Joy-Matthews, Megginson, and Surtees, 2004). These internal systems for managing change in organizations embraces a multi-disciplinary approach (Nafukho, Hairston and Brooks 2004) and a “levels of analysis” perspective in organizations.

From the multi-disciplinary approach, Bates and Chen (2005) noted that internal factor functions within work systems are based on three distinct paradigms. The first one is the learning paradigm which focuses on the change through learning which is expected to produce development of the individual and therefore postulates learning as a critical part of an institutional culture. On this basis, internal factors serve the basic need of facilitating learning and adaptation to a changing work environment (Torracco, 2005) and is thus concerned with fostering improved performance which is aimed at enhancing quality of the outcome. The second paradigm is the performance paradigm which presents internal factors as an area focused on advancing the performance of systems that sponsor the internal factors by improving the capabilities of individuals working in the system and improving the system. The third one is the meaning of work paradigm which takes a holistic approach to human development and the development of organizations and focuses on the development of the whole person so as to realize their full potential meaningfully and enhancing institutional health through programs that have a human appeal (Hucynski and Buchanan, 2001, 2007) and transcend institutional boundaries to improve Quality of life in the organization, the society and the world as a whole.

According to Torracco (2005), learning has for long been acknowledged as a major determinant of organizational success. From the behavioral sciences, learning has been studied at the individual level and connected with change in behavior. Organization theorists have studied the concept from an organizational perspective. In both perspectives the aspect of change is
a not an ingredient in the learning process. Scholars in internal factors borrow from this change perspective to advance a case for the adoption of a learning orientation in order to respond to environmental dynamics (Bates and Chen, 2005). Human Resource Development scholars have cited learning in organizations as a source of competitive advantage in the context of change. Learning in an environment of change positions people as a source of distinctive competence and makes them become the only source of differentiation and sustainable competitive advantage (Kontogiorghes et al., 2005; Storberg-Walker and Gubbins, 2007; Collin, 2007). The resource based view to competitive advantage based on human resources identifies the critical conditions that bring about this distinctiveness as employees who add value, are rare and cannot be copied (Jackson and Schuler, 2000; Golding, 2007). Lopez et al. (2005) indicate that organizational learning constitutes a source of competitive advantage, and identify particular Human Resource activities that promote learning such as recruitment and selection activities, training programs and design of compensation systems that reward knowledge acquisition and learning. Prevailing change demands new ways of working which can only be supported through not only extensive training in new skills but also completely new ways of thinking about work and relating with one another.

Research objective
The objective of this research was to determine how QMS influence the relationship between administrative systems and the performance of Kenyan public universities.

Quality management
Paris (2003) argues that Process Based QMS enables the organizations to identify measure, control and improve the various core business processes that will ultimately lead to improved business performance. QMS is a systemic set of management procedures used to monitor, check and improve the organization operative and financial performances, aiming to offer the best product/service at lower costs. Paris (2003), further states that institutions may have a more plain organizational structure, run a lower number of processes liable to QMS and can manage with more simple communication tools. This might lead to a significant reduction of system documentation. On the other hand, the number of employees and the level of complexity of the enterprise usually result (different than in micro and small enterprises) in an - at least partly - documented system of conducting business, so that there is a certain base to build on when working out the quality documentation.

ISO 9001 is an international standard that specifies the basic requirements for a Quality Management System.

It further affirms that Quality management system is a powerful tool, which enables every organization to increase quality of products and/or services offered through continuous improvement of processes. It further affirms that QMS is that part of the organization’s management system that focuses on the achievements of results, in relation to the quality objectives, to satisfy the needs, expectations and requirements of interested parties, as appropriate. According to Amyx (2005), when an institution has a working QMS, it is able to demonstrate its ability to meet customer and regulatory requirements and to enhance customer satisfaction. The standard outlines the five major elements in conjunction with the internal factors would lead to quality of the performance. This requires the organizational structure, the procedures, the management responsibility, the resource management, and the process which leads to product realization, measurement, analysis, and improvement of the same.

QMS development and implementation
A Quality Management System in its basic concept it seeks to: Recognize the external quality related requirements specified in Licenses to Trade, guidelines, specified customer requirements, and the chosen management system standard(s). ISO 9001:2008 states that for the system to be effective and efficient in functioning the following must be in place: Ensure that all requirements have been documented within the management system in the appropriate location in terms of defined specific system requirements and confirm that employees receive applicable training in the quality system requirements. Outlining of performance processes, where applicable to the quality system requirements and produce records or evidence that system requirements have been met. The standard further states that measure, monitor and report the extent of compliance with these performance procedures be maintained continually monitor and analyze changes to the requirements and confirm that all changes are reflected in changes to the specific requirements when necessary.

QMS and ISO standards
QMS is a formalized system that documents the structure, responsibilities, and procedures required to achieve effective results, in the area of quality. According to the requirements of ISO 9001, an organization must develop six quality documented procedures namely control of documents, control of quality records, internal audits, control of non-conformities, corrective action, and preventative action. The development of other procedures, work instructions, and other documents is largely at the discretion of the organization. Karipidis et al. (2008) contend that from the very beginning of the process, it is essential that organizations establish a
balanced view between a short-term focus (marketing/sales) and a long-term focus (achieving company-wide quality awareness through TQM). They further argue that ISO documentation should be considered as an enabler along that way and organizations must guard against the creation of unnecessary documentation. According to Mert and Cory (2011), a successful QMS must be fully functional and appropriately documented. They state that the institution’s QMS system should be complete death, informally alive, formally death and informally death.

**Complete Death: No documentation, no functioning**
This is the state in which there is no indication of the existence and functionality of the QMS. No documentation exists and no processes are in place to help ensure the quality of the product. This is the state in which most institutions are. In such institutions there are no procedures to guide the performance of the work to realize their objectives.

**Informally Alive: No documentation, some level of functioning**
Many institutions exhibit an organic structure characterized by an absence of standardization and the prevalence of loose and informal working relationships. Institutions operating in this state are more likely to rely on people rather than a system. In such situations, key personnel may resist documentation for two key reasons arguing that documentation is considered a waste of time and that documentation of processes and procedures makes the individual less dependable. Institutions in this state perform some or all of the processes required by ISO 9001 and the QMS may function fairly well. These institutions are not willing and ready to document those processes unless there is a cultural change led by top management.

**Formally Death: Some level of documentation, no functioning**
Institutions categorized in this state have documented processes and procedures at some degree, however, the documents are generally not followed and do not necessarily reflect the actual manner in which the organization undertakes its operations and management. This situation highlights the fact that the mere existence of documentation does not necessarily lead to a functional QMS. Moreover, such a situation may help perpetuate the view that ISO 9001 is a way for institutions to market their products and services but that implementation of the standard requires stacks of documents that offer no value.

**Formally Alive: Some level of documentation, some level of functioning**
Sousa et al (2011) argues that institutions considered in this state, achieves a unique combination of the existence and functionality of processes and procedures that may or may not be required by ISO 9001. They agree that institutions in this state have documented the procedures, established and at the same time are implementing them including reviewing and continually improving on the same.

**Administration systems and performance**
Universities by virtue of their work orientation are expected to embrace learning culture which is a constitution of administrative systems. Organizational behavior considers organizations as continuous learning systems. Caravans and McCarthy (2008)'s approach has conceptualized learning as an iterative process that involves action, reflection, change and the creation of new knowledge. They view institutional learning as the process of enhancing actions of institutions through better knowledge and understanding. Slotte, Tynjala, and Hytonen,(2004)'s view indicates that learning at the organizational level embraces the activities of an organization that is continuously expanding its capacity to create its future. This capacity is grounded on the ability of employees and organizations (as a collective of individuals) to change and become more effective. Learning organizations are expected to create conducive environments for employees to learn (Clarke, 2005) as it is the learning of employees that seems to sustain individual and organizational learning. Slotte et al. (2004) indicate that this institutional learning places demands on organizations continuous efforts to provide employees with learning opportunities.

**Vision**
This is an aspirational description of what an organization would like to achieve or accomplish in the mid-term or long-term future. It is intended to serves as a clear guide for choosing current and future courses of action. See also mission statement (Oxford Dictionary, 2012).

**Mission**
According to Oxford Dictionary (2012) it is a written declaration of an organization's core purpose and focus that normally remains unchanged over time. A properly crafted mission statement will serve as a filter to separate what is important from what is not, clearly state which markets will be served and how, and communicate a sense of intended direction to the entire organization.

**Objectives**
According to the ISO 9001:2008 Guide, Quality objectives is something sought, or aimed for, related to quality. A specific result that a person or system aims to achieve within a time frame and with available resources. Pearce II and Robinson (2011), Yabs (2010), Hill (2010), David (2010) define objectives as forward looking
statements of what institutions intend to achieve within a specified period of time. They further argue that objectives are basic tools that underlie all planning and strategic activities. They serve as the basis for creating policy and evaluating performance.

**Quality policy**

This is an overall intention and direction of an organization related to quality as formally expressed by top management. The standard further states that there is no specific description of the structure and the contents of quality policy. It affirms that this is the uppermost document to address the commitment of top management to continually improve system’s ability to comply with requirements. It has to be aligned with any other policy and aims of the organization, be communicated, understood and found meaningful, and be used as a framework for setting various objectives. The standard finally concludes that it is important to show dedication to improve competence and empower personnel, and to meet statutory and regulatory requirements and interests of stakeholders, (ISO 9001:2008).

According to the standard ISO 9001:2008, the vision, mission and objectives should be set and followed. The standard further affirms that top management shall ensure that quality objectives, including those needed to meet requirements for product, are established at relevant functions and levels within the organization. The quality objectives shall be measurable and consistent with the quality policy. Quality objectives should be realistic objectives converted from the quality policy and focused on all critical activities in the organization. They should be linked to quality policy, because it makes the policy more understandable and concrete, and it is easier for personnel to see what their contribution is to achieve objectives and finally, how the objectives support intentions of quality policy.

The standard requires that before organizations assign personnel to an activity they will first have to define a minimum competence requirement for the activity in terms of education, training, skills and experience which may be handled by for example, job descriptions. The standard further requires that if there are competence gaps, the organization has to provide training or take other actions to fill the gap. It is stated in the standard that the personnel has to be aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives. High priority is given to knowing the customer needs. Training and meetings are some possible ways to ensure this awareness. The effectiveness of actions taken has to be evaluated somehow, for example, by monitoring the process performance. The organization has to maintain appropriate records of the individual’s education, training, skills and experience. Joy-Matthews et al. (2004) indicates that human resource is closely allied with organizational strategy and the management of change. Ericson (2006) notes that human resource plays an important role in organizational solutions to strategic issues through developing human expertise, employee training, work design and structure.

An institution has to embrace the Quality Management Systems as a whole, as seen in figure 1 in order to realise is objective.
The components include: management processes including strategic decisions, determination of quality policy and quality objectives and other management tasks, product realization processes which describe the sector which the organization is in, including the activities that are needed to produce the products and services to internal and external customers, processes of resource management including determination and allocation of human resources, infrastructure and work environment, and measurement, analysis and improvement processes which ensure that the product and QMS meet the requirements and the system is continually improved.

Most scholars seem to agree with the ISO 9001:2008 Standard and thus have suggested that organizations need to adopt a learning open systems perspective (Figure 1) and provide a list of areas of practice and suggest organizational learning, individual learning and development, blended learning, training, management development, knowledge management, learning organization, coaching, mentoring, total quality management, performance management and project management (Joy-Matthews et al., 2000; Armstrong, 2006; Beardwell and Claydon, 2007).

RESEARCH METHODOLOGY

This study adopted a positivist research philosophy. Cohen and Crabtree (2006), Bryman (2001) and Levin (1997) argued that a positivist approach to research is based on knowledge gained from "positive" verification of observable experience rather than introspection or intuition. As cited in Keraro (2014), May (1997), stated that the positivist philosophy pre-supposes that there is an objective reality that people can know reality and that symbols can accurately describe and explain this objective reality. A study by Schiffman and Kanuk (1997) observed that principal positivist methods often involve statistical analysis in order to generate findings and to test hypotheses. The study used a descriptive and correctional research designs as the basic designs which are of cross sectional survey in nature.

The study population comprised of all the public universities in their first cycle of QMS certification of three years. A multi stage sampling technique was applied in this research to select the respondents from whom primary data will be collected. A sample size of 221 respondents was used in the study. Data was collected using questionnaires, interview guide and document analysis.

STUDY RESULTS AND FINDINGS

Reliability test on the moderating variable, QMS

Cronbach’s Alpha Coefficient was used to test for internal consistency of the data collected on the moderating variable (Quality Management System). The closer Cronbach’s alpha is to 1, the higher the internal consistency (Sekaran, 2006). Sekaran further argued that reliability of a measure indicates the extent to which it is without bias and hence ensures consistent measurement across time and across the various items in the instrument. If the Cronbach’s alpha is above 0.7 the instrument is reliable. Table 1 show that Cronbach's Alpha is 0.886 and since it is above 0.7, the data therefore, can be termed as reliable.

Descriptive statistics on QMS, the moderating variable

Under this predictor variable, responses were sought from seven different questions on the influence of the moderating variable on the internal factors and the performance of public universities in Kenya. Table 2 presents the detailed descriptive statistics on the moderating variable of this study. A question posed on whether the management review meetings are held by the universities at least twice a year received the following responses: a majority of 56.3% (32.5% and 23.8%) of the respondents agreed that this was the case to a large and very large extents, 33.1% were moderate, 9.9% were to a little extent and 0.7% said not at all. On the question of whether the internal QMS audits are done twice a year by the universities, 72.9% (37.1% plus 35.8%) said this was the case to a large and very large extents, 21.9% were moderate, 4.6% and 0.7% were to a little extent and no extent at all respectively. On the whether the there is a budget allocation by the universities for QMS, 66.9% (36.4% plus 30.5%) said this was the case to a large and very large extents, 25.2% were moderate while 7.3% and 0.7% were to a little extent and to no extent at all respectively. On whether there are follow ups done on the audits are implemented by the universities, 69.5% (43.7% and 25.8%) said this was the case to a large and very large extents, 25.2% were moderate while 4% and 1.3% were to a little and no extent at all respectively. A question on whether effective infrastructure was established by the universities 60.2 (41.7% and 18.5%) responded that this was the case to a large and very large extents, 33.8% were moderate while 3.3% and 2.6% were to a little and no extent at all respectively. A question asked on whether various university departments had well established procedures elicited the following responses; 61.5% (37.7 plus 23.8%) responded that this was the case to a large and very large extents, 31.8% were moderate while 4.6% and 2% were to a little and no extent at all respectively. A final question on the moderating variable was asked regarding whether all staff in the universities were aware of QMS, 63.6% (35.8 plus 27.8%) responded that this was the

<table>
<thead>
<tr>
<th>Table 1: Reliability test on the moderating variable</th>
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<tbody>
<tr>
<td>Cronbach's Alpha</td>
</tr>
<tr>
<td>0.886</td>
</tr>
</tbody>
</table>
case to a large and very large extents, 30.5% were moderate while 4% and 2% were to a little and no extent at all respectively.

The results obtained from this study concur with ISO 9001 which affirms that Quality management system is a powerful tool, which enables every organization to increase quality of products and/or services offered through continuous improvement of processes. The standard affirms that QMS is that part of the organization’s management system that focuses on the achievements of results, in relation to the quality objectives, to satisfy the needs, expectations and requirements of interested parties, as appropriate. Paris (2003) observed that process based QMS enables organizations to identify measure, control and improve the various core business processes that will ultimately lead to improved business performance which tallies well with the results of this study. A study by Amyx (2005) concluded that when an institution has a working QMS, it is able to demonstrate its ability to meet customer and regulatory requirements and to enhance customer satisfaction. This position taken by Amyx resonates well with the findings obtained from this study on QMS as a moderating variable. Further, the results obtained from this study are congruent to the arguments advanced by Karipidis et al. (2008) who contended that from the very beginning of the process, it is essential that organizations establish a balanced view between a short-term focus and a long-term focus of QMS. They emphasized that QMS documentation should be considered as an enabler along the way and organizations must guard against the creation of unnecessary documentation. A successful QMS must be fully functional and appropriately documented. It could, therefore, be strongly argued that QMS is an influential moderating factor between internal factors and the performance levels achieved by public universities in Kenya.

Administrative systems
The study sought to find out the influence Quality Management Systems had on the relationship between performance of public universities and the administrative systems. The findings were presented and discussed under this section.

Reliability test on administrative systems
Cronbach’s Alpha was used to test for reliability of the data on Administrative Systems. The findings were presented in table 3. From the table, the Cronbach’s Alpha was .796 which was above .7 thresholds.

Descriptive statistics of administrative systems
Under this predictor variable, respondents were expected to respond to five different questions on the subject of administrative systems in relation to the performance of public universities in Kenya. Table 4 presents the detailed descriptive statistics on this variable. On the question of whether there had been well developed vision, mission statements, 70.2% (sum of 33.8% and 36.4%) of the respondents agreed that this was the case to a large and very large extents, 29.1% were moderate while 0.7% were to a little extent. On the question of whether the universities had established a monitoring tool on the realization of the set objectives, 76.2% (49.7% and 26.5%) said this was true to large and very large extents, 18.5% were moderate while 4.6% and 0.7% were to a little extent and to no extent at all respectively. On the third question whether the universities have developed systems of communicating all university matters, 60.3%
universities had adopted QMS in order to improve administrative systems. From this activity of an effective QMS underpin enhanced performance. The second position is strongly supported by over 67.6% of the performance. The second position is strongly supported by over 67.6% of the performance. These findings further agree with whether all staff were involved in the development and implementation of quality management systems, 67.6% (41.1% and 26.5%) said this was the case to a large and very large extents, 26.5% were moderate while 8.6% and 1.3% were to a little and no extent at all respectively. On the other question whether the universities had adopted QMS in order to improve their administrative systems, 67.6% (46.4% and 21.2%) said this was the case to a large and very large extents, 26.5% were moderate while 5.3% and 0.7% were to a little and no extent at all respectively. Administrative systems in learning institutions are expected to create conducive environments for employees to learn (Clarke, 2005) as it is the learning of employees that sustains individual and organizational performance. These findings further agree with conclusions by Caravans and McCarthy (2008)'s that universities by virtue of their work orientation are expected to embrace a learning culture which is a constitution of administrative systems. Caravans and McCarthy's approach conceptualized learning as an iterative process that involves action, reflection, change and the creation of new knowledge. Other scholars whose conclusions agree with these findings are Slotte et al. (2004)’s whose views indicated that learning at the organizational level embraces the activities of an organization that is continuously expanding its capacity to create its future. This capacity is grounded on the ability of employees and organizations (as a collective of individuals) to change and become more effective by developing effective administrative systems. Slotte et al. (2004) indicated that this institutional learning places demands on organizations continuous efforts to provide employees with learning opportunities. Based on the study findings, it is evident that sound administrative systems in institutions, particularly institutions dealing with higher learning play an integral part in the enhancement of sound performance. This position is strongly supported by over 67.6% of the respondents from this study who argued that establishing, documenting, implementing and maintain effective and efficient QMS underpin enhanced performance.

Scatter plot of performance against administrative systems
Scatter dots were plotted so as to establish whether there was a linear relationship between performance of the public universities and administrative systems. From figure 2, the scatter points seem flow linearly. Therefore, it can be concluded that there is a positive linear relationship between performance of the public universities and administrative systems.

Regression and correlation analysis of performance and administrative systems
The study sought to find out the influence of Quality Management System on the relationship between performance of public universities and administrative systems. The findings were discussed under this section.

**Line of Best Fit of performance and Administrative systems**
Regression line of best fit showed that there was an observed positive linear relationship between performance of the public universities and administrative systems, as shown in figure 3.

**Linear regression analysis of performance and administrative systems**
Performance of public universities was linearly regressed against administrative systems. Stepwise regression was done while including the moderating factor (QMS), so as to establish its effect on the relationship between performance of the public universities and administrative systems. The findings were discussed in the following sections:

**Model summary of performance and administrative systems**
The models summary Table 5 shows that $R^2$ in the first model was 0.386 meaning that administrative systems alone explained 38.6% of the performance. The second model shows that $R^2$ improved to 0.394 after including Quality Management Systems. This implied that 39.4% of the performance could be explained by both administrative systems and Quality Management Systems. Therefore, it can be statistically concluded that Quality Management System has a positive influence on the relationship between performance of the public universities and administrative systems.

### Table 4: Descriptive statistics of the administrative systems

<table>
<thead>
<tr>
<th>Statements</th>
<th>Not at all</th>
<th>Little extent</th>
<th>Moderate extent</th>
<th>To a large extent</th>
<th>A very large extent</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision and mission</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>.7</td>
<td>44</td>
<td>29.1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>.7</td>
<td>44</td>
<td>29.1</td>
</tr>
<tr>
<td>Monitor Objectives</td>
<td>1</td>
<td>.7</td>
<td>7</td>
<td>4.6</td>
<td>28</td>
<td>18.5</td>
</tr>
<tr>
<td>1</td>
<td>.7</td>
<td>7</td>
<td>4.6</td>
<td>18.5</td>
<td>75</td>
<td>49.7</td>
</tr>
<tr>
<td>Communication</td>
<td>5</td>
<td>3.3</td>
<td>15</td>
<td>9.9</td>
<td>40</td>
<td>26.5</td>
</tr>
<tr>
<td>5</td>
<td>3.3</td>
<td>15</td>
<td>9.9</td>
<td>26.5</td>
<td>64</td>
<td>42.4</td>
</tr>
<tr>
<td>Staff Participation</td>
<td>2</td>
<td>1.3</td>
<td>13</td>
<td>8.6</td>
<td>34</td>
<td>22.5</td>
</tr>
<tr>
<td>2</td>
<td>1.3</td>
<td>13</td>
<td>8.6</td>
<td>22.5</td>
<td>62</td>
<td>41.1</td>
</tr>
<tr>
<td>QMS Adoption</td>
<td>1</td>
<td>.7</td>
<td>8</td>
<td>5.3</td>
<td>40</td>
<td>26.5</td>
</tr>
<tr>
<td>1</td>
<td>.7</td>
<td>8</td>
<td>5.3</td>
<td>26.5</td>
<td>70</td>
<td>46.4</td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td>32</td>
<td>21.2</td>
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<td></td>
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<td>100.0</td>
</tr>
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</table>

(42.4% and 17.9%) agreed that this was the case to a large and very large extents, 26.5% were moderate while 9.9% and 3.3% were to a little extent and to no extent at all respectively. On whether all staff were involved in the development and implementation of quality management systems, 67.6% (41.1% and 26.5%) responded that this was the case to a large and very large extents, 22.5% were moderate while 8.6% and 1.3% were to a little and no extent at all respectively. On whether the universities had adopted QMS in order to improve their administrative systems, 67.6% (46.4% and 21.2%) said this was the case to a large and very large extents, 26.5% were moderate while 5.3% and 0.7% were to a little and no extent at all respectively. Administrative systems in learning institutions are expected to create conducive environments for employees to learn (Clarke, 2005) as it is the learning of employees that sustains individual and organizational performance. These findings further agree with conclusions by Caravans and McCarthy (2008)'s that universities by virtue of their work orientation are expected to embrace a learning culture which is a constitution of administrative systems. Caravans and McCarthy's approach conceptualized learning as an iterative process that involves action, reflection, change and the creation of new knowledge. Other scholars whose conclusions agree with these findings are Slotte et al. (2004)’s whose views indicated that learning at the organizational level embraces the activities of an organization that is continuously expanding its capacity to create its future. This capacity is grounded on the ability of employees and organizations (as a collective of individuals) to change and become more effective by developing effective administrative systems. Slotte et al. (2004) indicated that this institutional learning places demands on organizations continuous efforts to provide employees with learning opportunities.
universities and administrative systems. It should be noted from table 5 that administration systems on their own explain 38.6% ($R^2$) of the change in the performance of public universities in Kenya (Model 1 of Table 5), while with the introduction of the moderating variable, QMS, the resultant $R^2$ improved from 38.6% to 39.4%. This indicates that with the influence of the Moderating variable, Administration Systems explain 39.4% (Model 2 of Table 5) of the change in the performance of public universities in Kenya.

The finds seems to agree with a number of strategic management scholars, like Pearce II and Robinson (2011), Yabs (2010), Hill (2010), David (2010) who defined objectives as discussed in chapter two as forward
Table 5: Model summary table of performance and administrative systems

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.622*</td>
<td>.386</td>
<td>.382</td>
<td>4.71986</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.628*</td>
<td>.394</td>
<td>.386</td>
<td>4.70718</td>
</tr>
</tbody>
</table>

1) Predictors: (Constant), Administrative Systems
2) Predictors: (Constant), Administrative Systems, Quality Management System

Table 6: ANOVA table of performance and administrative systems

<table>
<thead>
<tr>
<th>ANOVA*</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Regression</td>
<td>2090.476</td>
<td>1</td>
<td>2090.476</td>
<td>93.840</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residual</td>
<td>3319.285</td>
<td>149</td>
<td>22.277</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>5409.762</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Regression</td>
<td>2130.439</td>
<td>2</td>
<td>1065.219</td>
<td>48.075</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residual</td>
<td>3279.323</td>
<td>148</td>
<td>22.158</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>5409.762</td>
<td>150</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Dependent Variable: Performance of the Institution
2) Predictors: (Constant), Administrative Systems

Table 7: Coefficient Table of Performance and Administrative Systems

<table>
<thead>
<tr>
<th>Coefficients*</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>(Constant)</td>
<td>17.345</td>
<td>2.264</td>
<td>7.661</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Administrative Systems</td>
<td>1.120</td>
<td>.116</td>
<td>.622</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>(Constant)</td>
<td>16.507</td>
<td>2.343</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Administrative Systems</td>
<td>.958</td>
<td>.167</td>
<td>.532</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality Management System</td>
<td>.148</td>
<td>.110</td>
<td>.124</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance of the Institution

looking statements of what institutions intend to achieve within a specified period of time. A relatively large number of 49.7% of respondents evidently agreed with this and strongly reinforced studies by Karnani (2006), Porter (2001), Cocks (2010), Govindarajan and Trimple (2012) who were on the opinion that goals and objectives well monitored make it possible to quantify the vision and mission of an institution. The scholars further argued that with objectives embedded in the vision, and mission, the executive team is able to define a value gap; the difference between the desired outcome and what could be achieved by maintaining the status quo with the existing strategy. This clearly explains the large number(46.4%) of respondents who agreed that introduction of QMS has improved administration systems.

The scholars further argued that setting Quality objectives and communicating them allows an institution to monitor the achievement at the same time evaluate the effectiveness of set ways of achieving them. These findings also supported the literature by a number of scholars and authors cited in chapter two who observed that in the improved performance, an institution would require ensuring that it starts with the right the right objectives for enhanced performance. Based on these findings, objective setting ranked high as critical in ensuring that the vision and mission of the universities are well communicated and implemented.

ANOVA of performance and administrative systems

The ANOVA table 6, shows that the p-value for model 2 is less than .05. Therefore, the null hypothesis; Quality Management Systems have no influence on performance of Kenyan Public Universities and management systems, is rejected and the alternative hypothesis that, Quality Management Systems have an influence on performance of Kenya Public Universities and Management systems, is accepted.

Coefficients of performance and administrative systems

The Coefficient table 7, shows that for every unit change in performance, administrative systems alone contributes 1.12 in the first model. In model 2, administrative systems and quality management systems contribute .958 and
0.148 respectively. However, quality management systems is not statistically significant as its P-value is above 0.05

Summary of results and findings
The study established that when controlling for QMS as a moderating variable, the coefficient of determination, $R^2$ of administrative systems on the performance of Kenyan public universities was 38.6%. This meant that administrative systems alone as a predictor variable contributed up to 38.6% of the change in the performance of Kenyan Public universities. When QMS was uncontrolled, the coefficient of determination, $R^2$ of administrative systems on the performance of Kenyan public universities improved slightly to 39.4%, meaning that with the influence of QMS, the contribution to the performance of Kenyan Public universities improved to 39.4% (a change of 0.8%). It was also established that there was a high positive correlation, R of 62.2% between administrative systems and the performance of Kenyan public universities when QMS was controlled. This correlation improved to 62.8% with the introduction of QMS. In all these cases, the p-value between the independent variable and the dependent value was less than .05 at 95% level of confidence. This meant that administrative systems were statistically significant in the change in the performance of Kenyan public universities.

The study further established that: there was a positive liner relationship between administrative systems and the performance of Kenyan public universities; over 70.2% of the universities had crafted strategic statements (vision and mission) that guided the university operations; over 76.2% of the universities had established adequate monitoring tools that ensured the realization of set objectives; over 60.3% of the universities 60.3% well developed systems of communicating university matters; over 67.6% of the universities ensured that all staff (both teaching and non-teaching staff) were adequately involved in the development of QMS; and a majority (67.6%) of the had adopted QMS in order to improve their administrative systems as a way of enhancing performance. These findings, thus; led to rejection of the null hypothesis that QMS had no influence on administrative systems and performance of Kenyan public universities.

CONCLUSIONS
QMS has a significant moderating influence on administrative systems and that this has a direct positive impact on the performance of the Kenyan public universities. This means that all public universities require to embrace the culture of sound QMS processes in the developing of vision and mission statements to strategically guide the operations of the universities towards greater heights in performance that will rival public universities; require strong monitoring systems that will ensure that strategic objectives of the universities are realized; there is need to develop sound mechanisms of communicating all university matters to all stakeholders; and that all staff (both teaching and non-teaching staff) are adequately involved in the development of all QMS and Administrative systems that will ensure high performance of the universities.

Recommendations
QMS has a significant moderating influence on administrative systems. The study therefore recommends that all public universities should embrace the culture of sound QMS processes in the developing of vision and mission statements to strategically guide the operations of the universities towards greater heights in performance that will rival public universities; should develop strong monitoring systems that will ensure that strategic objectives of the universities are realized; should develop sound mechanisms of communicating all university matters to all stakeholders; and ensure that all staff (both teaching and non-teaching staff) are adequately involved in the development of all QMS and Administrative systems that will ensure high performance of the universities.

REFERENCES
Beardwell and Claydon, Ibid.

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