



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

INTERNATIONAL JOURNAL
OF CURRENT RESEARCH

International Journal of Current Research
Vol. 12, Issue, 01, pp.9476-9491, January, 2020

DOI: <https://doi.org/10.24941/ijcr.37689.01.2020>

RESEARCH ARTICLE

INFLUENCE OF ISO 9001:2008 QUALITY MANAGEMENT SYSTEM ON ACADEMIC STAFFS' SERVICE DELIVERY IN PROVISION OF QUALITY TEACHING/LEARNING FACILITIES IN PUBLIC UNIVERSITIES IN KENYA

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ARTICLE INFO

Article History:

Received 12th October, 2019

Received in revised form

28th November, 2019

Accepted 09th December, 2019

Published online 30th January, 2020

Key Words:

Influence, ISO 9001:2008 Quality, Management Systems, Academic Staffs, Service Delivery, Teaching /learning, facilities, Public Universities.

ABSTRACT

The implementation of International Organization for Standardization (ISO) 9001:2008 Quality Management System (QMS) in education is a matter highly debated on whether or not the certification is appropriate for the education sector. Some scholars consider its adoption as a strategic decision by educational institutions to ensure delivery of quality service therein while others do not. Complaints by some academic staff and students in public universities in Kenya on the impact of ISO 9001:2008 QMS casts doubt on their level of satisfaction with it based on non conformities. For instance between 2012 and 2015 one university recorded 5310 non-conformities and another one recorded 5340 non-conformities which were higher than the other 12 Universities that recorded below 3940 non-conformities in provision of quality service delivery in public universities. In terms of the impact of ISO 9001:2008 QMS on academic staff's service delivery in provision of quality teaching/learning facilities in public universities, the non conformities recorded in one of the universities were 1100 and the other 1200 being higher than the non conformities recorded in the rest of the other universities for the period 2012 to 2015 in Kenya. The objective of the study was to determine the influence of ISO 9001:2008 QMS on provision of quality teaching/ learning facilities in public Universities. The study established that ISO 9001:2008 QMS had significant influence on provision of quality teaching /learning facilities such that for every one unit increase in ISO 9001:2008 QMS conformities in provision of quality teaching /learning facilities in public universities improved academic staff's service delivery by .617 units. In effect ISO 9001:2008 QMS accounted for 10.3% of the improvement in the provision of quality teaching /learning facilities in public universities as was signified by the Adjusted R square coefficient .103. The other 89.7% was due to other factors that were not subject to this study. This means that when non conformities decline there is improvement in academic staff's service delivery in public universities. ISO 9001:2008 QMS was a significant predictor of academic staff's service delivery in provision of quality teaching/learning facilities ($F(1,252) = 24.976, P < .05$). The study concluded that ISO 9001:2008 QMS improved service delivery in the public universities. The study recommended that public universities should strive to minimize non conformities for excellent service delivery. This study provides information to lecturers, Kenya Bureau of Standards and university management on the way forward in improving the provision of quality of teaching/learning facilities in public universities.

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Citation: Zilpah Andiva Kageha and Enose M W Simatwa, 2020. "Influence of ISO 9001:2008 Quality Management System on Academic Staffs' Service Delivery in Provision of Quality Teaching/ Learning Facilities in public universities in Kenya", *International Journal of Current Research*, 12, (01), 9476-9491.

INTRODUCTION

The ISO 9001:2008 quality management systems were created by the International Organization for Standardization (ISO) which is an international non-governmental organization based in Geneva Switzerland (Goetsch & Davis, 2002).

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The founding of International Organization for Standardization was part of a global action to rationalize the thousands of conflicting standards of various nations that had been developed after World War II to promote standards in international trade, communication and manufacturing. The family of ISO 9000 standards is made up of four standards, which are: ISO 9000:2005, ISO 9001:2008, ISO 9004:2009 and ISO 9011:2002. The work of preparing international standards is normally carried out through ISO Technical Committees (Mangula, 2013).

International organization for the standardization has authorized a technical committee called TC 176, comprising of 113 members from different countries to be responsible for preparing, establishing, documenting and maintaining the ISO 9001:2008 standard document. The first standard was published in 1987. From 1987 until today the standard has been revised three times. The latest one which is being used worldwide is the ISO 9001:2008 standard for the quality management system and the 2008 reflects the publishing year of the standard. An ISO 9000 registration means that an organization's quality management system meets the requirements of the standard as issued by the international organization for standardization. ISO 9000 introduces users to the eight quality management principles as well as the use of the process approach to achieve continual improvement. ISO 9001 is used when you are seeking to establish a quality management system that provides confidence in the organizations ability to provide products that fulfils customer needs and expectations. It is the standard in the ISO 9000 family against whose requirements the quality management system can be certified by an external body. The standard recognizes that the term "product" applies to services, processed material, hardware and software intended for the customer. There are five sections in the standard that specify activities that need to be considered when implementing the system; overall requirements for the quality management system and documentation; management responsibility, focus, policy, planning and objectives; resource management and allocation; product realization and process management and measurement, monitoring, analysis and improvement (ISO, 9000).

The objectives of ISO 9000:2000 standards are the systematic pursuit of errors and other adverse outcomes, the reduction of variation and organization waste such as non-value added activities (Adolfas, 2008), provision of a quality framework without changing how the organization operates (ISO, 2009), improve competitive advantage, promote brand image and a useful tool of marketing (Singels, Ruel & Water, 2001), effective quality management that is focused on customer satisfaction and continual improvement of the system through objective evaluation (Hoyle, 2003). If properly implemented certification may be used as a practical step towards introduction of total quality management which is strongly emphasized by the new ISO 9000:2000 edition of the series (Kanji, 1998). One of the emerging philosophies in quality management concepts is that Quality Management System is applied to organizations, experimented and implemented in institutions of higher learning so as to provide high quality standards for both industry and education (Ruzevicius, 2005). There is a prevailing belief that higher education has entered a new environment in which quality plays an increasingly important role (Bergman, 1995). Felgenbaum (1994) believed that quality of education is the key factor in invisible competition between countries since the quality of products and services is determined by the way that managers, teachers, workers, engineers and economists think, act and make decisions about quality. The increasing International recognition of economic, environmental and social importance of International standards are being reflected by the inclusion of standardization as a subject in higher education programmes. The late 1980's saw the introduction of industrial quality concepts such as total quality management in a few education and training institutes. In the early 1990s, some pioneers embraced ISO 9000 and since then there has been

increasing evidence that the adoption of total quality management principles and methods including those embedded in the ISO 9000 requirements could be relevant and useful for education and training organizations (Berg, 1996). Education and training organizations seek ISO 9000 certification to improve or maintain the quality of their education or training provision, promotion of a high quality image with high visibility and credibility, a way of responding to external factors such as customers, governments or funding bodies, a method for developing a full quality assurance system which covers the whole organization and the need to improve a number of specific activities of the organization. Freeman (1993) and Chesterton (1944) believed that the ISO 9000 series of quality standards is one way to upgrade the quality of the schools. Healy (1994) believed that the ISO 9000 series of quality standards clearly defines the scope, goal, responsibility, process system, implementation, supervision and evaluation to effectively establish the quality of the school systems. Sallis and Hingley (1991) as cited in Chan, Lee and Chang (2007) pointed out that the implementation of ISO can improve tedious administration procedures at Universities.

According to a study by Sampaio (2009) China was the country with the largest number of ISO 9000 issued certificates in 2004. The first ISO award was won in 2007 by the China Jiliang University Peoples Republic of China (ISO, 2009). In most of the countries in developing Asia the primary motivation for implementing the ISO 9001:2008 standards has been to facilitate exports, especially to the European Union. The reasons for certification among Egyptian companies is to improve efficiency of the quality systems, pressures from competitors and foreign partners, maintain and increase market share, meet government demands and to comply with customers' requirement (Magd & Curry, 2003). Tunisian Companies are driven to seek ISO 9001:2008 Certification by external circumstances such as the suppliers relationships, improvement and market shares increase. In South Africa, Ham (2000) study indicated that the main constraints to certification were costs and the excessive administration involved in the certification process. In Kenya, one hundred and forty two (142) firms are ISO 9001:2008 quality management system certified by Kenya Bureau of Standards (Kenya Bureau of Standards, 2012) and all universities are pursuing the international organization of standardization certification (Fuchaka & Swaleh, 2012). The study by Anyango (2012) indicated that the University of Nairobi adopted the ISO 9001:2008 quality management system in their academics, management and administration which had improved the quality of education, management and service. The study concluded that management should develop the potential of each employee in such a manner that a feeling of belonging to the institution is established through offering maximum opportunity for self development and the top managements' commitment to empower the employees by delegating sufficient authority for them to make both individual and collective decision. Magutu, et al (2010) studied quality managerial practices and academic services at the University of Nairobi and concluded that the University of Nairobi had applied quality management and to a very great extent had ensured that the quality management policy is appropriate to its purpose. The study by Baraza (2013) revealed that there is an effect of ISO 9001:2008 quality management systems certification to the competitive advantage of Kenya's universities. Universities should embrace quality management systems like ISO 9001:2008 Quality Management

System in an endeavor to give quality and relevant higher education. However, the implementation of the standard should be in reference to other quality standards such as Kaizen. Vande Berghe (1997) study of ISO 9000:2008 in Education and training institutions states that ISO 9000:2008 is not an appropriate goal for any organization in any circumstance while Corbelt and Kirsch (2001) noted that the standard has not been the subject of sustained scholarly analysis. A healthy university environment will not only increase the job satisfaction of academic staff but it will at the same time improve the learning environment and increase the productivity of the university (Khalid, 2012). When academic staff perceives lack of support for their work, they are not well motivated to perform their job best in the classroom, and that when lecturers are not satisfied with their working conditions, they prefer to change institutions or leave the profession at once (Smith, 2007). According to Berg (1995) many practitioners in the education and training world over wonder whether this development is the best way to improve quality within education and training institutions while Gudo, Ongachi and Olel (2011) concluded that ISO is fairly technical, formal and proved that things do not change because of new procedures, regulations and documentation. Fuchaka and Swaleh (2012) study indicated that employees did not have a sense of belonging and ownership to the university systems in Kenya and would not go extra mile to add value to them. They also stated that though universities use certification as a proof of their quality management system, ISO 9001:2008 merely look at the adequacy of procedural and management processes and not the actual practice on the ground with respect to job satisfaction of teaching staff.

In Kenya ISO 9001:2008 Quality Management System is generally appreciated despite the contradictions advanced by Fuchaka and Swaleh (2012) and Vusa (2016). Whereas Fuchaka and Swaleh (2012) argue that ISO 9001:2008 QMS has little influence on quality management of universities, Vusa (2016) contends that ISO 9001:2008 QMS has improved quality services in universities. Vusa's (2016) findings are supported by Ruzevicius (2005) whose aim of the study was to highlight peculiarities, problems and inconsistencies of quality assurance in university and university college education established that, the quality of final product of university activities is the result of achievements of all stages of educational process, and that the implementation of Total Quality Management and ISO 9001 system in universities and colleges resulted in optimum involvement by personnel into the process of quality improvement, better usage of personnel competency; more precisely measurement and assessment of work results; better identification and control of processes, rise of satisfaction of clients, social partners and society with universities work results. These discrepancies or contradictions constituted the gap in knowledge this study sought to fill by determining the influence of ISO 9001:2008 Quality Management System on academic staffs' service delivery in public universities in Kenya. In universities in Kenya, the Directorate of Quality Assurance is charged with the responsibility of ensuring that quality and standards in universities are improved and maintained as per the ISO certification. Thus Directorate of Quality Assurance is the secretariat of ISO 9001:2008 QMS. All public universities that are ISO 9001:2008 QMS certified have "Quality Manuals" in which universities have pledged to comply with the ISO 9001:2008 QMS requirements. For instance in the manual of university "F," the Vice Chancellor in his forward remarks:

The university is committed to providing quality higher education through quality teaching and learning, research, consultancy and community outreaches services, good governance and management. To achieve these, the university management has endeavored to streamline its Quality Management System in order to deliver services that can be benchmarked against international standards. Mechanisms for effective systems have been put in place, including documented procedures for various activities in the university. The staff have been trained on QMS and are expected to learn to become responsive and plan for continual improvement. ISO 9001:2008 is our guiding QMS standard. The university will put more emphasis on implementation of plans, review changes and focus on quality service provision to our customers and stakeholders. Quality starts with every one of us and it is our collective responsibility to achieve it. Let us together strive for excellence by creating an environment where processes are effective and efficient in achieving our goals. And the Vice Chancellor of university "E" remarks "The university is committed to quality through teaching, research and development; providing on time services to foster and develop academic excellence in basic and applied research at all levels of study by training practice oriented manpower, who can contribute effectively to social, intellectual and academic development in the community, the nation and the community of nations. The university is committed to communicating exhaustively with its customers, and internally with its employees, to continually improve its services, products, processes, methods, and the work environment to ensure each customer is receiving the highest quality service in compliance with statutory and other regulatory requirements at the committed cost and on time. In order to realize this commitment the university management will monitor and review established quality objectives and the quality policy once every two years. It shall ensure provision of resources for implementation of an effective Quality Management System based on ISO 9001:2008."

The Quality Manuals are evidently guided by ISO 9001:2008 QMS requirements / principles. These requirements /principles are;

- Customer focus: Organizations depend on their customers, and therefore need to shape activities around the fulfillment of market need.
- Leadership: Is needed to provide unity of purpose and direction.
- Involvement of people: Creates an environment where people become fully involved in achieving the organization's objectives.
- Process approach: To achieve organizational objectives, resources and activities need to be managed as processes with an understanding of how the outputs of one process affects the inputs of another.
- System approach to management: The effectiveness and efficiency of the organization depends on a systematized approach to work activities.
- Continuous improvement: Adopting this as a part of everyday culture is a key objective for an organization.
- Fact based decision- making: Effective decisions are based on the logical and intuitive analysis of data and factual information.

- Mutually beneficial supplier relationships: Such relationship enhance the ability to create value.

In a nutshell, in the quality manuals, objectives, quality policy, normative reference, QMS, management responsibilities, resource management, realization of education service /product realization; and measurements, analysis and improvement constitute the QMS of the university. All of which are tailored to ISO 9001:2008 QMS and The Management Representative (MR) who is one of the top officers in the university management, normally a Deputy Vice Chancellor or Registrar is the accounting officer of ISO 9001:2008 QMS and also the implementers of the same through the Directorate of Quality Assurance. This means that he/she oversees the implementation of quality service /product in the university. It is also important to note that all the requirements of ISO 9001:2008 QMS are generic and are intended to be applicable to all organizations regardless of the size and products produced. It is also worth noting the benefits of ISO 9001:2008 QMS. First it involves Top Management in the improvement of quality management system; facilitates the organization to become a customer-focused organization; ensures sustained customer satisfaction by producing, delivering and providing support functions that meet the customer's needs and expectations; and increases the effectiveness and efficiency of the organization through continued improvements in systems and product /service quality. The site of the study was universities "E" and "F" (Table 1).

From Table 1, it can be noted that universities "E" and "F" for the period 2012 to 2015 experienced more non conformities than other universities. Thus university "E" reported 5,340 non conformities and university "F" 5,310 compared with the other 12 universities that reported 3,940 and less individually for the same period. The non conformities, deviations or non fulfillment of ISO 9001:2008 QMS requirements in the areas of examination management, teaching process, teaching /learning facilities and curriculum review. The non conformities noted raised the issues of influence of ISO 9001:2008 quality management system on the specified variables that were focused on when certification was done. Thus, it was necessary to investigate the variance accounted for by ISO 9001:2008 quality management systems so that improvement would be earmarked. This is because some studies posit that ISO 9001:2008 quality management system is not a real valuable tool for improvement on quality education while others assert that ISO 9001:2008 quality management system model is the driver of quality in educational organizations (Fuchaka & Swaleh, 2012; Vusa, 2016 & Ruevicius, 2016).

Research Objective: The research objective was to determine the influence of ISO 9001:2008 quality management system on academic staffs service delivery in provision of quality teaching/learning facilities.

Synthesis of literature on influence of ISO 9001:2008 quality Management system on provision of quality teaching /learning facilities in public universities

Most African universities do not have adequate physical facilities such as lecture rooms, office and library and laboratory spaces to provide a suitable learning and teaching environment. The existing buildings are often too old, poorly maintained and too small to meet all space requirements.

Some universities such as Makerere have reached or even surpassed their optimal capacity in physical facilities and further increases in student enrolment are likely to yield diminishing returns (Okwakol, 2008). There are serious challenges in Africa with the rapid expansion of universities, inadequate infrastructure, lack of facilities and up to date instructional materials, obsolete and often non-existent equipment, outdated curricula and limited financial resources and administrative support. Library facilities and information systems in almost all universities are antiquated, books and scholarly journals are not only few but very old, some dating to 1950's and are therefore irrelevant to current institutional needs and priorities. In many universities library services are not yet computerized. The problem of scarcity of relevant and current journals continues to be the concern of most universities. This means inability of staff to do research, publish and meaningfully contribute to knowledge (Okwakol, 2011).

Research finding by Abend et al (2006) reveal a link between student achievement and the quality of learning facilities provided to support educational programmes. While quality of learning facilities is an important concern to educators, there is no consensus what a quality facility is or how to effectively measure it. However, several writers have suggested a number of criteria that may be used to measure quality of facilities. Such questions as whether the facility adequately supports the desired educational programme or enables the development of learning environment that support students and teachers in achieving their goals are critical measures of quality learning facility. According to Yurko (2005) space quality is a function of an education facility. Examples of space qualities are a learning facility having adequately sized classrooms, availability of natural lighting and a welcoming atmosphere. Other aspects such as level of comfort, cleanliness, and maintenance are also important measures of quality facility.

Research by Garwe (2015) indicated that students complained that some lecturers especially those employed on a part time basis gave students just one assignment per course. In addition the assignments would be marked and returned just before they sit for exam or at times even after the examination. This unsatisfactory situation of inadequate and infrequent assignments coupled with the poor quantity and quality and timelines of this feedback caused a serious dent in the quality of learning. Many studies have underscored the importance of formative assessment in that they help students to assess themselves for purposes of learning and directing their future studies. Most private universities in Zimbabwe just like in Kenya rely on part time lecturers and have relatively less academic staff members who work on fulltime basis. Ten percent of the students blamed poor teaching on part time lecturers who abscond themselves from lectures. The lecturers will therefore either fail to complete the syllabus or if they do they will make it a crush programme and it is usually very difficult for the student to understand and internalize the information. In addition, they do not have time to consult and mentor students outside the lecture times. Part-time lecturers also tended to be less committed to the institution since they did not participate in university service activities like meetings and taking up some academic and non -academic roles (Garwe, 2015). These practices are what is being referred to as non conformities in ISO 9001:2008 Quality Management System because they work against the requirements for ISO certification.

It is for this reason that the study was envisaged to determine the actual influence on academic staff service delivery in teaching in public universities. Although no regional infrastructure audit has been conducted, it is reported that there are severe infrastructure constraints in most institutions in Africa. These constraints are affecting the capacity for both teaching and research. Teaching effectiveness is being limited by inadequate facilities, laboratory equipment and computing infrastructure, while student access is limited due to insufficient classrooms or accommodation. Resources for research are of critical importance as the lack of them could be a primary contribution to the brain drain of scientists to industrialized countries (Nyaigoti, 2001 & SARUA, 2009).

It is clear that there are several challenges facing higher education in Kenya and many developing countries. The specific quality issues faced by the public higher education institutions in Kenya are also connected to a number of issues that include: deteriorating physical facilities, rigid programmes that are not responsive to the market, student unrest which leads to long closures and the political appointments of higher education leadership. It is well documented that among other infrastructure and academic problems, windows and doors are falling apart in public universities, residential halls are stinking, there are no subscriptions to journals and no tutorials and that large lecture halls lack efficient microphones. In many universities, academic infrastructure can no longer cope with the number of learners, so the learners have to attend lectures in overcrowded conditions that are not conducive to effective communication and learning (Odhiambo, 2011). Ngome (2003) indicated that in Kenya, as in other African countries, higher education is in deep crisis, preview of pertinent data shows declining public expenditures on higher education, deteriorating teaching conditions, gross over-employment in universities, decaying educational infrastructure and facilities, on increasing rate of unemployment among university graduates, a mass exodus of experienced lecturers; shortage of adequate opportunities for thousands of young people seeking higher education, the absence of academic freedom and a decline in the quality of university graduates. Some of these problems could be partly solved by an effective quality assurance mechanism (Odhiambo, 2011) such as ISO 9001:2008 Quality Management System.

The Commission for University Education in Kenya (2014) guidelines states that a specialized degree awarding institution should have adequate academic resources to ensure quality delivery of programmes. The institution should i) have a critical mass of qualified staff in a specific discipline of national importance, ii) specialized facilities and equipment that meet the standards of the discipline and iii) a specialized library that meets the needs of the discipline. Furthermore, every University should provide appropriate and adequate facilities to cater for the number of programmes on offer and students enrolment. As a minimum, a university should provide the following facilities: a) Lecture theatres or lecture rooms, departmental areas, staff offices and seminar rooms, central administration offices, library, auditorium or lecture theatre, staff common rooms, student common rooms with indoor recreation facilities, outdoor recreation facilities inform of games or sports facilities and drainage system with proper sanitation and water supply, health unit, CT infrastructure and spaces for workshop. At the award of Charter a university should have facilities that can accommodate students in four academic programmes.

The University should provide lecture rooms which are adequate in number and size and are well lit and ventilated. Research by Mbirithi (2013) indicated that Kenyatta and Egerton Universities had inadequate textbooks as it was reported by Heads of Department. Libraries had most inadequate facilities in terms of space and books in Public Universities, both self-sponsored and regular students' complain that the Universities have not invested much in the acquisition of textbooks to cope with the increased student intakes (Mwiria Ngome & Odero, 2007). Many students in public universities conduct their studies in their rooms where they do not make any references due to lack of enough textbooks and sitting space in the libraries. These have implications on the Universities effectiveness in transmitting knowledge and skills by making them possible to avail content, influence the scope and depth of coverage of that content to student and the faculty (Republic of Kenya, 2008). Ahemba (2006) observed that most libraries in African Universities are depleted. Available literature indicates a shortage of funding and investment in many sub-Saharan African universities resulting into deficiencies in key learning resources such as books and other physical infrastructure. Mbirithi's (2013) and Ahemba's (2006) findings concurs with ISO 9001:2008 Quality Management System findings on the fact that provision of quality facilities in universities are necessary for provision of quality service delivery. Therefore it was desirable to establish the influence of ISO 9001:2008 Quality Management System on provision of these facilities in public universities.

The taskforce on Higher Education and Society (World Bank, 2000) observed that most of the teaching practices in African Universities major on rote memorization of factual information and called for learning methods that emphasized greater intellectual engagement, participation and discovery during the learning process, rather than rote learning. Rote learning is most likely to proliferate in resource deficient environments. A Kenyan taskforce for the development of the National Strategy for Higher Education argues that Kenyan University students rely on lecturers notes because library books are insufficient (Republic of Kenya, 2008). In Knowledge economies libraries and computers are critical indicators of quality. The biggest challenge faced by public universities in Kenya is lack of enough teaching and learning resources like textbooks, computers and in general, teaching and learning infrastructure (Chacha, 2005). Research by Mwangi et al (2011) showed that the quality of the library, online resources and lecture facilities did not meet quality measures of adequacy. The facilities were the antithesis of healthy and secure facilities that can provide stimulating setting for the users. Therefore, insufficient resources has a negative impact on the quality of education.

Research by Waswa and Katana (2008) showed that academic staff in Public Universities in Kenya viewed promotion criterion as being unnecessarily inflexible with an overemphasis on chronological teaching duration and refereed publications in international journals. Combined these problems appear to undermine the quality of service delivery as do various counter reactions from staff such as moonlighting, the use of old teaching notes, zero research based teaching and learning, a lack of commitment in mentoring of students and examination oriented teaching rather than education for sustainable development. The reviewed literature indicate that academic staff require provision of quality learning materials to provide quality

teaching which is envisaged by ISO 9001:2008 Quality Management System requirements. According to study by Owino (2011) that there is shortage of learning physical facilities in public universities and effective teaching and learning in public universities was hampered by lack of enough essential facilities. Furthermore, the study found that management of quality assurance in private and public universities in Kenya was significantly different. Private universities were doing better in quality assurance than public universities. This was mainly because private universities had better physical facilities and effectively engaged their stakeholders in management of the institutions. Lack of sufficient physical facilities also impacted negatively on the leadership of universities. This was mainly because funding, purchase and maintenance of facilities in public universities was controlled by the relevant government ministry and budgeted funds were hardly received in full by the universities. A consequence public universities suffered repercussions of demoralized staff and an agitating student body.

According to Okibo et al (2013) in many institutions, students face difficult conditions for study. Severely overcrowded classes, inadequate library and laboratory facilities, distracting living conditions and few if any student services are the norm. The financial strain currently faced by most universities are making conditions even worse. The developing world is littered with deteriorating buildings, inadequate libraries, computer laboratories that are rarely open and scientific equipment that cannot be used for want of supplies and parts. A study by Munene (2008) indicated that in Kenyatta University threat to academic quality emanated from the rapid involvement of privately sponsored students which did not commensurate with an equal increase in the number of teaching staff, library and laboratory facilities as well as staff development opportunities. There have also been problems with infrastructure (lack of staff accommodation, land for expansion and research and poor roads).

Abagi (1999) observes that the increasing student numbers over the years has not been matched by a corresponding expansion in teaching and /learning facilities and class sizes of above 300 are not uncommon in public Universities especially in humanities and education courses. Libraries, laboratories, lecture theatres and halls of residence are all overstretched. The increase in student population has not resulted in more recruitment of teaching staff, resulting in those who have remained being manifestly overloaded. According to Eshiwani (2009), Kenyan universities are forced to work under adverse conditions, poor services, and lack of resources for non-salary academic expenditure such as textbooks, journals, teaching and research equipment and maintenance of such equipment. He asserted that the situation had resulted in lowering of academic standards and of quality of graduates. Graduates are deficient in written communication and technical proficiency which make them unfit for the market. Analysis by Gudo et al (2011) on adequacy of trained staff for library staff in private and public universities showed that 87.50% and 73.33% of librarians in private and public universities respectively were satisfied with the number of trained library staff available. The interpretation was that both private and public universities had enough trained library staff to support effective library services for teaching and learning. The researchers wanted to find out the adequacy of library facilities such as space, print, journals, e-journals, internet and current books. It was found that 100% and 66.66% of librarians in private and public universities

respectively were satisfied with library space. It meant that the library staff were of the opinion that private and public universities had enough reading space in the libraries to accommodate the students. Investigations was done on the perceived adequacy of print journals in university libraries. It was found that 100% and 46.6% of librarians in private and public universities were satisfied with available print journals. It meant that print journals were not adequate in public universities. It was interpreted that public universities did not have a satisfactory number of print journals for effective teaching and learning. Results on the perceived adequacy of internet facilities in university libraries indicated that 100% and 40% of librarians in private and public universities respectively were satisfied with internet facilities. It meant that public universities did not have adequate internet facilities for effective teaching and learning. Analysis was done on the perceived satisfaction with availability of current books (2005-2010). Responses showed that 100% and 60% of librarians in private and public universities were satisfied with the available current books and journals. It meant that quality teaching and learning in private and public universities was not negatively affected by shortage of current books and journals. The rapid expansion of university education since the 1990's, both in terms of increase in student enrolment and the mushrooming of new universities has stretched physical, academic and financial resources to their limits. It has also posed challenges on how to manage, organize, finance, regulate and integrate university education to ensure sustainable quality and relevance to current and future national human resource requirements. Almost without exception resources fail to match the rate of increase in enrolment, and universities are expected to do more with less in terms of infrastructure, teaching and research facilities (Okwakol, 2008).

Developing Countries are able to attract highly skilled workers from developing countries especially in the critical fields of science and Information Communication Technology. There is a growing mobility of academics, professionals' and skilled workers, especially given the usually less attractive terms and conditions of service, salary structures and work environments in developing countries (Magagula, 2005). Mulryan-Kyne (2010) has found out that large classes of between 300 and 1,000 and even more at the undergraduate level are common at institutions of higher learning in a number of countries. This occurrence according to research poses challenges to both experienced and inexperienced educators who are assigned to teach larger classes. According to Macgregor et al (2001) introductory courses or classes that fulfill general education requirements often carry enrolment of hundreds of students. These large-class settings have historically been heavily lecture-centered, requiring minimal student engagement and expecting little more than memorization of terms and concepts as evidence of student learning. Exley and Demnick (2004) and Bligh (2000) established that when educators are confronted with large classes, they tend to present their lessons using lecture based format rather than engaging themselves in other teaching strategies that promote discussions, critical thinking, change attitudes or behavioral skills. Laurillard (2002) concludes that higher education is made up of students with different academic abilities and as such most students will have to struggle to learn materials presented to them through lectures. The reviewed studies did not address provision of quality teaching /learning facilities and therefore this study attempted to fill the gap.

Conceptual Framework

While many businesses have benefited, many others have failed to achieve quality and competitive benefits through ISO 9001:2008 implementation which means that not all companies are able to take advantage of the certification. For this reason it was important to take a closer look at the issues surrounding the implementation of ISO 9001:2008 and construct conceptual framework for its successful implementation. Therefore, this study adopted the following conceptual framework.

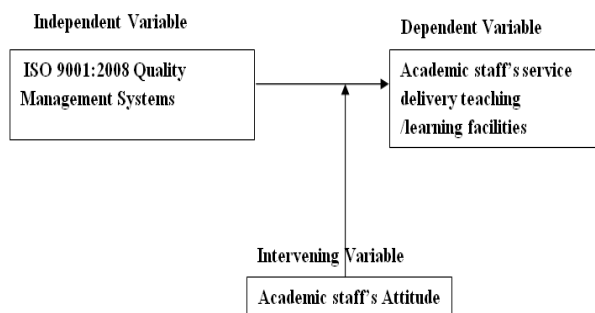


Figure 1. Conceptual framework showing the influence of ISO 9001:2008 Quality Management Systems on Academic Staff's Service Delivery in provision of Teaching / Learning facilities in Public Universities

As perceived in the review of the literature, the independent variable for the study is the influence of ISO 9001:2008 quality management system. The dependent variable is academic staff's service delivery in relation to provision of teaching /learning facilities. The intervening variable is the academic staff's attitude. These factors directly or indirectly intervene on the dependent variable and the independent variables as illustrated in Figure 1.

RESEARCH METHODOLOGY

Descriptive and correlational research designs were adopted. Study population was 759 academic staff consisting of 420 from one university and 333 from the other. Fisher's formula was used to determine sample size of 254 teaching staff. Proportionate and purposive sampling was used to select 254 teaching staff, that is, 142 from one university and 112 from another; and saturated sampling was used to select 4 students' leader and 2 management representatives. Questionnaire, interview schedule and document analysis guide were used to collect data.

Face and content validity of the instruments was determined by experts in educational administration. The content validity indices for the four instruments were academic staff questionnaire .89, interview schedule for academic staff .78, observation guide .89 and document analysis guide .89. This means that all the instruments were valid. Cronbach's alpha was used to determine reliability of the instruments using 75(10%) of study population whereby a coefficient of .7 and above at a p-value of 0.05 was considered reliable. The instruments were reliable as their coefficients exceeded .7 at p-value of .05. Quantitative data was analyzed using frequency counts, means, percentages and regression analysis. Qualitative data was transcribed and analyzed in emergent themes and sub-themes.

RESULTS

From Table 2, it can be noted that the return rate of questionnaire was 100%. This means that they were adequate for analysis of data. Thus according to Mugenda and Mugenda (2003) a response rate of 50% is adequate for analysis and reporting. A response rate of 60% is good and a response rate of 70% and over is very good. In essence these figures serve as guidelines, otherwise a response rate of 100% is the best because it is a representative sample for meaningful generalizations. Since the response rate was 100%, it means the results of this study are generalizable.

Institution Data

The institution data for the universities that were used as the site of the study were as shown in Table 3. From Table 3, it can be noted that universities had schools and departments. It is important to note that an "institution" is defined as an organization founded for purpose of university education and research. "Public university" means a university established and maintained or assisted out of public funds. "Academic staff" means any person who has been appointed to teach, train or to do research at a university. "Department" means an academic division into which a faculty or school is divided for purposes of teaching, examinations and administration. "Curriculum" means any documented programme of study. "Faculty /school" means an academic division so designed or established under the instruments constituting a university (Ministry of Education, Science and Technology, 2014). Examination on the other hand means an official test that reveals a student knowledge or ability in a particular subject. There are two types of examinations formative and summative evaluations. Formative evaluation are examinations or tests administered in the course of study while summative evaluation are examinations administered at the end of the course /semester. The purpose of examination is fourfold; one, examinations are used to diagnose the strengths and weaknesses of students; two, to inform students of progress in the curriculum; three, help in grading or classifying students, and four, to help in selecting students into correct career and programmes for further studies. Thus without good examinations, an education system can collapse and put the country's development scorecard into disarray.

ISO 9001:2008 Quality Management System Status Based on Departmental Audit Report in sampled Public Universities in Kenya (n=91) 2014/2015: In order to establish the influence of ISO 9001:2008 Quality Management System on academic staff's service delivery in public universities in Kenya data on ISO 9001:2008 Quality Management System status was first established from the departmental audit report using document analysis guide. The results were as shown in Table 4. The research hypothesis responded to was: ISO 9001:2008 Quality Management System certification does not influence provision of quality teaching/learning facilities in public universities. In order to establish the influence of ISO 9001:2008 Quality Management System on academic staff's service delivery in provision of quality teaching /learning facilities the null hypothesis, "ISO 9001:2008 Quality Management System has no significant influence on academic staff's service delivery in provision of quality teaching /learning facilities in public universities" was generated. Data on status ISO 9001:2008 Quality Management System after certification (Table 5) and status of quality teaching /learning

Table 1. Public Universities in Kenya: Non –conformities 2012 to 2015

SN	University	Year of ISO certification	Areas of Focus and Non –Conformities					Total
			Examination processing procedures	Curriculum review process	Teaching process	Teaching/learning facilities	Processing of University Continuous assessment Tests	
1	A	20 th June 2012	1650	180	230	870	850	3780
2	B	29 th July 2009	1520	130	210	850	660	3370
3	C	30 th Oct 2014	1630	100	240	820	750	3540
4	C	8 th May 2012	1720	170	270	920	780	3860
5	E	1 st January 2011	2300	280	360	1100	1300	5340
6	F	26 th Sep 2013	2100	270	340	1200	1400	5310
7	G	20 th June 2012	1620	210	180	940	880	3830
8	H	4 th Dec 2009	1670	180	210	830	860	3750
9	I	5 th March 2012	1640	160	240	830	780	3650
10	J	25 th Nov 2014	1540	170	220	860	830	3620
11	K	15 th August 2012	1820	210	240	820	850	3940
12	L	6 th April 2009	1450	140	170	860	740	3360
13	M	16 th June 2010	1550	180	210	840	860	3640
14	N	2 nd Dec 2014	1730	220	230	870	870	3920

Source: KEBS (2015) Standards, Training, Testing and Certification of (14) ISO 9001:2008 Certified Public Universities in Kenya.

Table 2. Return Rate of Questionnaires

Respondents	Number Issued	Number Returned	Percentage
University E Lecturers	142	142	100
University F Lecturers	112	112	100

Source: Field Data 2016

Table 3. Institution Data

Institution	Number of Schools	Number of Academic Departments
University E	11	55
University F	11	36

Source: Field Data 2016

Table 4. Data on ISO 9001:2008 Quality Management System Status on Non Conformities in provision of Teaching /Learning facilities in Public Universities Based on Departmental Audit Reports (n=91) 2014/2015

S/N	Non Conformities- Teaching /learning Facilities	S/N	Non Conformities- Teaching /learning Facilities	S/N	Non Conformities- Teaching /learning Facilities
1	1.78	31	1.56	61	1.67
2	1.61	32	2.4	62	1.72
3	1.33	33	1.67	63	2.15
4	2.2	34	1.56	64	2.43
5	1.67	35	2.44	65	2.89
6	1.56	36	1.67	66	1.56
7	1.78	37	2.89	67	1.57
8	2.42	38	1.56	68	1.56
9	1.88	39	1.66	69	2.44
10	2.44	40	1.56	70	1.78
11	1.67	41	1.56	71	1.33
12	2.1	42	1.56	72	1.56
13	1.77	43	1.74	73	1.67
14	1.56	44	1.67	74	1.68
15	1.33	45	1.7	75	1.33
16	2.89	46	1.56	76	1.78
17	2.44	47	1.33	77	1.68
18	1.33	48	2.42	78	1.72
19	1.67	49	2.89	79	1.81
20	1.67	50	2.1	80	1.57
21	1.33	51	2.43	81	2.42
22	1.56	52	1.62	81	1.79
23	1.67	53	1.81	82	1.68
24	2.3	54	2.43	83	2.43
25	2.45	55	1.78	84	2.42
26	2.44	56	1.56	85	1.78
27	2.44	57	2.85	86	1.69
28	1.78	58	1.58	88	1.56
29	2.2	59	2.33	90	1.56
30	1.66	60	1.65	91	1.78

Table 5. Status of ISO 9001:2008 Quality Management System in relation to Teaching /Learning Facilities in Public Universities 2014 /2015 Academic Year

Level of Non conformity in Provision of Quality Teaching /learning Facilities (Ratings)	Frequency	Percentage
1.00 -1.44	7	7.7
1.45 -2.44	78	85.7
2.45 -3.44	06	6.6
3.45 -4.44	00	00
4.45 -5.00	00	00
Total	91	100.00

Source: Field Data 2016

Interpretation of Mean Rating

Numeric strength Practical strength

1.00 -1.44	Very Low non conformity
1.45 -2.44	Low non conformity
2.45 - 3.44	Moderate non conformity
3.45 - 4.44	High non conformity
4.45 -5.00	Very High non conformity

Table 6. Status of Provision of Quality Teaching /Learning Facilities after ISO 9001:2008 Quality Management System Certification in Public Universities 2015 /2016 Academic year

Provision of Quality Teaching /Learning Facilities (Ratings)	Frequency	Percentage
1.00 -1.44	00	00
1.45 -2.44	10	10.99
2.45 -3.44	36	39.56
3.45 -4.44	30	32.97
4.45 -5.00	15	16.48
Total	91	100.00

Source: Field Data 2016

Interpretation of Mean Rating

Numeric strength Practical strength

1.00 -1.44	Poor
1.45 -2.44	Below Average
2.45 - 3.44	Average
3.45 - 4.44	Good
4.45 -5.00	Very good

Table 7. Regression analysis of the influence of ISO 9001:2008 Quality Management System in Provision of Quality Teaching/ Learning Facilities in Public Universities

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.336 ^a	.113	.103	.72255	.113	11.347	1	89	.001

a.Predictors: (Constant), ISO 9001:2008 Quality Management Systems

Table 9. ANOVA of ISO 9001:2008 Quality Management System and the Provision of quality teaching /learning facilities in public universities

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.924	1	5.924	11.347	.001 ^b
	Residual	46.465	89	.522		
	Total	52.389	90			

a.Dependent Variable: Teaching learning Facilities

b.Predictors: (Constant), ISO 9001:2008 Quality Management Systems

Table 10. Linear Regression Analysis of the influence of ISO 9001:2008 Quality Management System on the Provision of Quality Teaching /Learning Facilities in Public Universities

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.680	.353		13.246	.000	3.978	5.382
	ISO 9001:2008 Quality Management System in Teaching/learning Facilities	-.617	.183	-.336	-3.369	.001	-0.981	-.253

a. Dependent Variable: Teaching learning Facilities Regression Equation $Y = B_0 + B_1X_1 + \dots$

facilities (Table 6) were used in the computation. From Table 5, it can be observed that the non conformities in provision of quality teaching /learning facilities were majorly low as majority 78(85.7%) rated them as low, 6(6.6%) as moderate while 7(7.7%) as very low. The areas of focus or indicators were furniture in the lecture halls, office space, office computers, office furniture, library space, library books and library furniture. From Table 6, it can be noted that provision of quality teaching /learning resources was rated good by 30 (32.97%), as average, by 36(39.56%) as below average, by 10(10.99%) and as very good by 15(16.48%). The areas of focus were provision of library space, book/ student ratio, toilets and washrooms, copies of textbooks per title, lighting in lecture rooms, lighting in offices, computers in offices, conditions of lecture rooms and office spaces, office space, furniture in lecture room and offices. Regression analysis was computed to establish the influence of ISO 9001:2008 Quality Management System on academic staff's service delivery in provision of quality teaching /learning facilities in public universities. The results were as shown in Table 7. From Table 8, it can be noted that ISO 9001:2008 quality management system had significant influence on Academic Staff's Service Delivery in Provision of Quality Teaching/ Learning Facilities in Public Universities as the p value was less than .05. The null hypothesis "ISO 9001:2008 Quality Management System has no significant influence on academic staff's service delivery in provision of quality teaching/learning facilities in public universities was rejected and therefore the alternative hypothesis H_{a1} ISO 9001:2008 quality management system has significant influence on academic staff's service delivery in provision of quality teaching/learning facilities in public universities was accepted. It can also be observed that ISO 9001:2008 Quality Management System accounted for 10.3% of the variation in the provision of quality teaching /learning facilities in public universities. This was signified by the Adjusted R Square coefficient .103. The other 89.7% was due to other factors that were not the subject of this study.

To determine whether ISO 9001:2008 Quality Management System was a significant predictor of academic staff's service delivery in provision of quality teaching /learning facilities in public universities, Analysis of Variance was computed and the results were as shown in Table 9. From Table 9, it can be noted that ISO 9001:2008 Quality Management System was a significant predictor of provision of quality teaching /learning facilities in public universities ($F(1, 89) = 11.347, P < 0.05$). This means that ISO 9001:2008 Quality Management System can be relied upon to predict the provision of quality teaching /learning facilities in public universities. To determine the actual influence of ISO 9001:2008 Quality Management System on the provision of quality teaching /learning facilities in public universities, linear regression analysis was computed. The results were as shown in Table 10. From Table 10, it can be observed that for every one unit increase in non conformities in the provision of quality teaching /learning facilities, provision of quality teaching /learning facilities declined by .617 units as signified by the coefficient -.617. Conversely for every one unit reduction in non conformities in the provision of quality teaching /learning facilities, the provision of quality teaching /learning facilities improved by .617 units. The regression equation is $Y = 4.680 + -.617X_1$.

DISCUSSION

Observation revealed that the quality of teaching /learning facilities provided was generally good.

However, there were few cases of decaying conditions of building such as peeling paint, crumbling plaster, and non functioning toilet, poor lighting, inadequate ventilation and in operating temperature control systems that affected the learning as well as the morale of some staffs and students to some extent. During interviews the interviewees stated ISO 9001:2008 Quality Management System had improved the provision of quality teaching /learning facilities. Thus "In response to ISO 9001:2008 Quality Management System and Quality Assurance requirements, the university has put in place maintenance policy and asset inventory to alleviate the insufficient or shortage of chairs, tables, computers, library books and space, lecture rooms and their accessories due to the large enrolment. In fact during this financial year the university has budgeted for purchase of additional facilities to cater for the deficit." These results support the fact that quality teaching /learning facilities are a basic requirement for establishing a university just like any other institution of learning. This means that value addition to quality teaching /learning facilities translate to better learning outcomes. It is for this reason that teaching /learning facilities are a requirement in ISO 9001:2008 Quality Management System certification in universities. Good teaching /learning facilities are important preconditions for better student learning provided that other conditions are present that support a strong academic programme. A growing body of research has established a positive link between student achievement and behaviour; and teaching /learning facilities (Ahawo, Simatwa & Yalo, 2015; Ahawo, Simatwa & Gidudu 2017).

These results indicate that ISO 9001:2008 Quality Management System certification of public universities has really enhanced provision of quality teaching learning facilities. These findings concur with those of Vusa (2016) in a study entitled ISO 9001:2008 quality management system certification and service delivery in Kenyan public universities: A case study of the university of Nairobi, who established that ISO 9001:2008 Quality Management System enhanced quality service delivery in many dimensions such as customer focus, leadership involvement of people process approach, systems approach and decision making. These dimensions have a link to provision of quality teaching /learning resources. That is ISO 9001:2008 Quality Management System guide or form a basis for good decision making systems approach, customer focus and involvement of people in providing the desired quality teaching /learning facilities. In fact during the interviews, interviewees were unanimous on the fact that ISO 9001:2008 had guided university managements in making good decisions in providing the desired quality teaching /learning facilities in all departments and schools. In this respect the management representatives and student leaders stated "ISO 9001:2008 Quality Management System was awake up call upon university leadership /management to equip universities with the right teaching learning facilities. Having been ISO certified universities are struggling to improve standards by complying with the set requirements. All professional courses, be they medicine, Architecture, teaching engineering, nursing among others have the responsibility of providing quality training as this can only be achieved by use of quality teaching /learning facilities supported by other factors such as highly qualified academic staff, and support staff." These findings also agree with those of Ali and Ensar (2014) who established that ISO 9001:2008 Quality Management Systems enhanced the establishment and accreditation of Star University.

This is majorly because ISO 9001:2008 Quality Management System was used in meeting the requirements that led to accreditation. In this research quality was dealt with as a part of standards that was important in fulfilling the requirements. The indicator used by Ali and Ensar (2014) are directly the product of provision of quality teaching /learning facilities studied by Vusa (2016) who attests to these findings. Indeed with quality teaching /learning facilities passing rates, average grade, evaluation of staff by students, students' satisfaction and number of publications cannot be realized. To this end interviewees both management representatives and student leaders stated: "Provision of quality teaching /learning facilities in accordance with ISO 9001:2008 are requisites to pass rates. This is because they immensely enhances teaching /learning processes. This in turn, positively influence student grades. Students use the teaching /learning facilities to evaluate their teaching by assessing how the teacher selects and uses these facilities. It is also commonplace to hear students praising or condemning the quality of teaching /learning facilities which is an indicator of their level of satisfaction. Similarly without provision of quality teaching /learning facilities lecturers at universities cannot effectively conduct research and publish research articles." The new knowledge generated is the empirical evidence that ISO 9001:2008 improved provision of quality teaching /learning facilities which in turn enhanced pass rates, average grades, student satisfaction and increased publications by staff.

Conclusion

The ISO 9001:2008 Quality Management System significantly influenced academic staff's service delivery in the provision of quality teaching/ learning facilities namely; provision of library space, book student ratio, toilets and washrooms, copies of textbooks per title, lighting in lecture rooms, lighting in offices, computers in offices, conditions of lecture rooms and office spaces, office space, furniture in lecture room and offices. This helped universities to improve in public image and performance in teaching and research.

Recommendation

Public universities should endeavour to reduce the non conformities in the provision of quality teaching /learning facilities so as to enhance quality of education offered. This is because achievement in teaching research and curriculum development would be of high standards.

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