

## **Challenges and Prospects of Implementation of ISO 9001:2015 in TVET Institutions: The Case of Nkabune Technical Training Institute**

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### **Abstract**

*Quality is considered to be a competitive weapon in today's marketplace. There is now a shift to service-based economies where supply chain has become complex and there are increased expectations from customers. Consequently, there is a need for a greater focus on customer requirements where conformity of products and service delivery should be ensured. This can be achieved through the implementation of high-level-structured Quality Management Systems (QMS) such as the ISO 9001:2015, an updated version of the ISO 9001:2008. A significant number of TVET institutions have induced the confidence of their stakeholders by implementing ISO 9001:2015 into their system; however, there is major gap in research in the area of ISO 9001:2015 implementation in these institutions. The aim of this paper therefore is to investigate the challenges and prospects of Implementing ISO 9001:2015 in TVET institutions and propose solutions to address these challenges. The research adopted a mixed methods approach and a two-stage sampling procedure was used on a sample size comprising 33 teaching and none teaching staff of Nkabune Technical Training Institute. A toolkit containing a self-administered questionnaire and a structured in-depth interview guide was used. The study ascertained that Nkabune Technical Training Institute in its quest to acquire and implement ISO 9001:2015 certification encountered key challenges namely: massive documentation requirements, high cost of hiring consultants, and complexity of the processes and lack of clear understanding of ISO requirements. The standard is highly documentation-driven and requires that all documentation be updated to reflect all its system requirements. The study recommends the use of an effective document management system that ensures easy accessibility and accuracy of documents while maintaining their validity. Academic institutions should also consider integrating ISO 21001:2018 management system for educational organizations to complement other international standards. Development of a good organizational culture is also a fundamental pre-requisite to the successful implementation of the standard and for the achievement of quality*

**Key words:** *ISO 9001:2015, TVET, quality management systems, standards*

### **Introduction**

With the advent of globalization, the competitive arena and the flows of information and processes have changed radically. Many organizations have realized that to sustain competitive advantages; they must focus on the quality of the products and

services they provide to customers. ISO stands for the International Organization of Standardization (ISO) which was formed in Geneva, Switzerland in 1946. The objective of ISO is to develop international, industrial and quality standards as a model for quality assurance standards in design, development, production, installation, and service (Aba & Badar, 2004). The ISO 9000 standards are a collection of internationally accepted standards for quality management and assurance. Since its introduction in 1987, the series has received wide acceptance and has become a worldwide quality management norm for most organizations despite the size or industry (Nabavi, Azizi, & Faezipour, 2014). Under these standards, there are ISO 9001, ISO 9004, ISO 19011 and ISO 14000. The number of organizations certified for ISO 9001 has grown tremendously. ISO 9001 has been revised and amended several times - in 1994, 2000, and 2008 respectively (Bouayad, 2013). And the latest revision being ISO 9001:2015 which was produced in September 2015. This version of the standard includes additional organizational needs such as leadership engagement, risk evaluation, and integration of safety and environment management systems (ISO, 2015). Organizations implementing ISO 9001:2008 were given three (3) years for the transition to the new version. The transition period ended on September 2018, therefore, ISO 9001:2008 certificates are not valid anymore.

**Table 1**  
*Number of ISO 9001 Certificates in East Africa*

<b>Country</b>	<b>ISO 9001:2008</b>	<b>ISO 9001:2015</b>
<b>Burundi</b>	1	3
<b>Kenya</b>	420	173
<b>Somalia</b>	1	2
<b>Tanzania</b>	65	81
<b>Uganda</b>	46	53

Quality in higher education institutions cannot be separated; however, there is no specific definition of quality in higher education institutions since it involves students, disciplines, labor market, society and government (Zabadi, 2013). The main objective of TVET institutions is to create, preserve and disseminate knowledge (Karapetrovic, 1997). Alternatively, this may be viewed as three main products: student knowledge, abilities and competencies, courses and programs, and research (Karapetrovic, Rajamani, & Willborn, 1998).

Nkabune Technical Training Institute is a government institution located in Meru county four kilometers from Meru town, The institute offers technical and vocational education and training aimed at producing skilled manpower that fit in the dynamic Kenyan economy and the world at large. The institute got ISO 9001:2008 certified in January 2011 and later in July 2017 it became one of the first higher education institutions in Kenya to successfully transition to the new ISO

9001:2015 Standard.

### **The Research Problem**

Despite the vast amount of literature on the implementation of ISO standards, a review of literature shows that there has not been any that focused on ISO 9001:2015 in Higher education and specifically TVET institutions in Kenya. In Kenya, there are about 420 organizations that were certified to ISO 9001:2008 from these only 173 had transited to ISO 9001:2015 by December 2017 (ISO, 2017). This represents less than half of the organizations. Little or no information is available as to why most of them are not opting to implement the ISO 9001:2015 and what are the benefits obtained and challenges faced by the organizations that have undergone the certifications and implementation processes. This study seeks to fill this gap.

### **Specific Objectives**

- a) To find out the most important benefits of implementing the quality management system.
- b) To identify the major challenges faced by TVET institutions during the transition from ISO 9001:2008 to ISO 9001:2015.
- c) To explore the opportunities available and how they can be implemented to ensure successful implementation of the ISO 9001:2015.

### **Literature Review**

Many studies disclose that effective implementation of the ISO 9001 standard has benefits to the organization such as improvement of management control, efficiency, productivity, and customer service (Nabavi, Azizi & Faezipour, 2014). As a result of the positive perception of the performance of the standard, there has been a consistent increase in the number of countries that have adopted ISO 9001 as their national quality standard. There has also been a continual increase in the number of organizations within these countries that have been certified (Valmohammadi & Kalantari, 2015). According to KEBS, there are 1.2 million organizations certified to the ISO 9001 standard globally from 160 countries (Kenya Bureau of Standards, 2015).

One of the purposes of a quality management system is a tool for risk prevention (Hunt, 2014). Risk management relates to all activities, conditions and events that can affect the organization and its ability to achieve the organization's goals and vision. Identification of these activities, conditions and events are important and will depend on the organization and its goals and vision. (Aven, 2008). In the context of ISO 9001:2015, risk based thinking requires that risks and opportunities which may affect the QMS and its intended results, must be identified and managed. This new approach replaces what was called preventive action in the previous standard version.

In spite of the various measures that have been put in place to counter challenges faced by organizations implementing QMS which would eventually lead to ISO 9001 certification, the consequential level of success has been insignificant. Empirical evidence shows that the implementation of ISO 9000 meets many different challenges in organizations throughout the world (Fotopoulos & Psomas, 2009). Study by Mersha, (2007) indicate that most of these failures result from lack of top management support and commitment, the resistance of employees towards change, lack of understanding of the ISO requirements, inadequate training, and quality knowledge, low-quality awareness and culture, the allocation of personal responsibilities and constraints on resources such as manpower time and finance. Another study by Sampaio, Saraiva and Rodriguez, (2001) suggest that the major challenges faced in implementing ISO 9000 are the low-level involvement of top management and employees, a poor flow of information, resistance to new responsibilities, lack of technical knowledge and difficulty in the communication of new tasks.

In the Kenyan context Ochieng, Muturi, and Njihia (2015) carried out a study on the impact of ISO 9001 on organizational performance in Kenya, the findings of the study were that ISO 9001 certification influenced return on assets on the organization and as a result influenced their performance. The study also found that there were significant differences in the net asset value between organizations with ISO 9001 certification and non-certified organizations and on profit and revenue there were no significant differences between ISO 9001 certified and non-certified organizations. Another study done by Muturi and Mbithi (2015) focused on the implementation and impact of the standard at the University of Nairobi in relation to effectiveness on service delivery, operational performance, automation, implementation challenges and related emerging issues. The findings of the study were that considerable achievements have been realized with regard to the institutionalization of quality satisfaction, infrastructure and facilities and the use of ICT as a prime mover of performance improvement and ranking of the university. There exists a contextual gap between this study and the study done by Juanzon and Muhi (2017) which was based on SME in the Philippines, whereas this study focused on a Public Service organization in Kenya. A conceptual gap exists between this study and the other four studies highlighted which focused on clarifying the purpose of implementation, motivations of implementation and the impact of implementation respectively. From the discussed streams of literature, it is evident that ISO 9001 certification has many benefits and thus maintaining certified status presents an advantage to the certified organizations. However, there is a much smaller literature base focusing on challenges encountered by an organization seeking ISO certification in Kenya.

This study will focus on the transition state, the factors that influence the successful transition and the challenges faced thereafter.

## **Methodology**

### ***The Scope of the Study***

The study was conducted in the months of September and October 2018, approximately one year since the Nkabune Technical Training Institute (Nkabune TTI) successfully transitioned to ISO 9001:2015. The research was limited to the data obtained from the staff of Nkabune TTI located in Meru, Kenya.

### ***Sample Size***

The sample size that was selected was a total of 33 members of staff spread across seven (7) administrative and six (6) academic departments as illustrated in Table 3.1 below. Saunders, Lewis and Thornhill (2009), state that a sample size that is more than 30 is scientific and can be used by a researcher as a representative sample of a population.

### ***Data Analysis Methods***

The quantitative data that was obtained from the study was thoroughly examined using the Statistical Package for Social Sciences (SPSS), and the findings were represented in statistical or graphical representation generated using Microsoft Excel. Presentation of data was done in form of tables, charts, and graphs.

## **Findings**

### ***Response Rate***

The sample size of the study was thirty-three (33) respondents from Nkabune TTI. Questionnaires were issued out to randomly selected staff in a total of thirteen (13) administrative and academic departments. A total of thirty (30) responses were achieved representing 96%. According to Mugenda and Mugenda (2003) the threshold for response rate should be above 70% and therefore 96% response rate was adequate to proceed with the study.

### ***Main Department of Respondents***

Majority of the respondents' main department was academic 55% while 45% were from the administration this is due to the fact that the core business of Nkabune TTI is teaching or curriculum implementation.

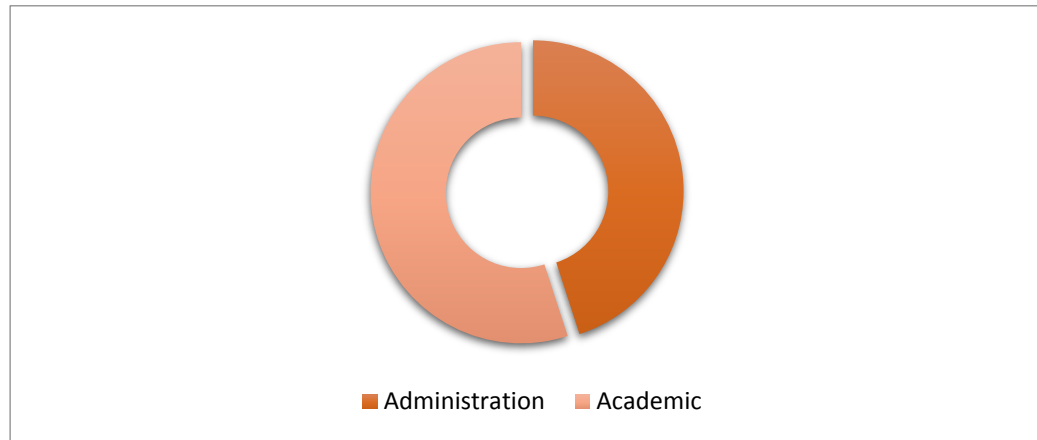


Figure: 1. Categories of Department of Respondents

**Years Worked at Nkabune TTI**

Majority of the respondents had worked at Nkabune TTI for a period of between 5-10 years (53.3%), 20% had worked for more than 10 years, 16.7% had worked between 2-5 years while 10% had worked for less than 2 years. This implies that most of the respondents had worked at Nkabune TTI before the school started implementing a QMS, during the implementation of ISO 9001:2018 and during the transition and implementation of ISO 9001:2015; most of them were, therefore, knowledgeable of the contributions to changes within and after the transition period.

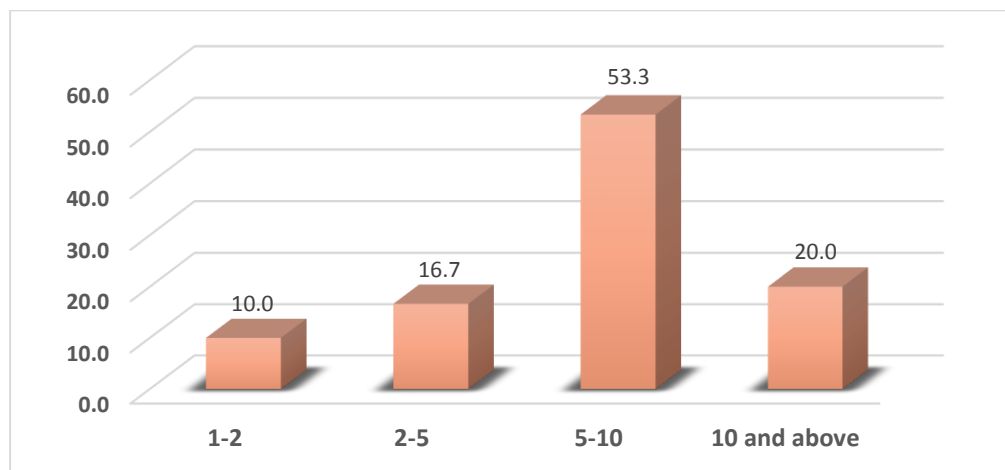


Figure 2: Years worked at Nkabune TTI.

**Perceived Benefits of Implementing QMS in Nkabune TTI**

The authors sought to know, whether there had been any improvements or deteriorations since the implementation of a QMS. According to majority, 89% of the survey participants, QMS has led to improved customer satisfaction, 83% agreed that QMS has improved the local and regional competitiveness of the

institution, 77% agreed that QMS has led to the improved academic performance and 91% agreed that QMS has led to improved processes.

### ***Training and Sensitization on ISO 9001:2015***

Majority (63%) of the respondents had received training on the implementation of ISO 9001:2015; We also sought to find out if those who had not received training had received any sensitization on the same and out of the 11(37%) that had not received training 10 of them representing (91%) had been sensitized on QMS and ISO standards when they reported to the institute. From this, we can accurately say that most of the respondents in Nkabune TTI were aware of the ISO 9001:2015 and its implementation in the institute.

### ***Risk Assessment and Management***

In order to investigate the conduct and applicability of risk-based thinking, the survey asked two specific questions. We sought to find out if people understood what risk-based thinking is and which major risks the respondents faced in their line of work. Majority of the respondents at 76% understood what risk-based thinking meant as entrenched in the new standard, most of the respondents at 69% also identified the major risks facing their departments as: cheating in exams, failure to complete/cover the whole syllabus, failure to submit the required documents on time and students absenteeism.

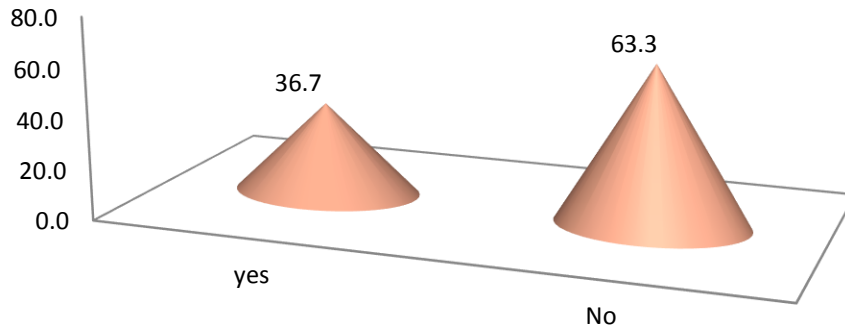
### ***Challenges Faced by the Institution during the Transition to the New Standard***

A common barrier that was identified during the process of transition to the new management standard is the lack of clear understanding of what the standard actually requires. The requirements of previous issues were clear for everyone: where the standard used “shall” it meant a documented requirement was needed. Shifting from “documented procedures” to “documented information” and doing that by using “risk-based thinking” proved to be beyond most process owners’ abilities to understand and grasp.

Another challenge identified was a varied interpretation of the standard and tailoring the standard framework to the organizations' requirements. Even though the ISO 9001:2015 is an international standard which could apply to organizations of different sizes, cultures, and industries, they apply it differently in their organizations as they need to adjust the standard to their organizations requirements.

Limited time was also identified by 27% of the respondents as a great challenge encountered during the transition. The staff involved in the development of the documents for transition had to work extra time and sometimes far away from the institution. This proved to be a challenge since the implementers double up as heads of departments who also had lessons to teach and other academic and administrative matters to handle.

### **Training of Auditors**



**Figure 4:** Training of Auditors.

Of the respondents 36.7% were trained as auditors in the new standard while 63.3% were not.

### **Internal Audit Challenges based on ISO 9001:2015**

The authors sought to know which challenges the auditors faced as they audited according to the new standard.

One of the main challenges identified by 40% of the respondents was inadequate auditors. This is because the institution had trained significant number of QMS auditors but most of them doubled up as the heads and deputy heads of departments who are also involved in other departmental work. It is therefore imperative to set up a budget to train more auditors for the institution. The training of more auditors will increase understanding of QMS and ultimately reduce the resistance to change.

Another challenge identified by 32% of the respondents was lack of proper understanding of the risk register and analysis of the actions taken to address the risks. The ISO 9001:2015 is based on risk-based thinking which is a new phenomenon that was not in the previous standards.

19% of the respondents said that another challenge they faced was too many audits planned for the year. Nkabune TTI conducts one internal audit every term which implies there are three internal audits per year. This does not include external audits which vary from one or more audits in a year. Internal audit strengthens an organization's control environment, identifies control weaknesses, exposes inefficient processes and provides an opportunity to correct those weaknesses early enough.



Table 2  
*Main Challenges Faced by the Institution during the Implementation of the ISO 9001:2015*

<b>Challenges</b>	<b>Mean</b>	<b>Standard Deviation</b>
Lack of top management commitment	2.733	0.691
Ineffective internal audits	2.966	0.764
Lack of clear understanding of the standard requirements	4.033	0.999
A lot of documentation	4.566	0.504
Inadequate funds	3.867	0.860
Lack of involvement of people	2.263	1.147
Resistance to change	3.200	0.961

The participants revealed that the QMS had a lot of documentation at mean of 4.566, lack of clear understanding of the standard requirements at 4.033, inadequate funds, 3.867, and resistance to change at mean of 3.200, were a challenges to the implementation of ISO 9001:2015 QMS. However, the participants disagreed that ineffective internal audits at 2.966, lack of top management commitment at mean of 2.733, and lack of involvement of people at 2.263 were challenges that were faced by Nkabune TTI during the implementation of the ISO 9001:2015 QMS.

### ***Opportunities that Exist in the Implementation of ISO 9001:2015***

One of the major opportunities identified with the new standard is knowledge management. This is very important new requirement since the main mandate of TVET institutions is to create, preserve and disseminate knowledge. Prudent knowledge management is paramount and ensures that these organizations do not lose their know-how and experiences due to employee turnover especially in knowledge intense areas.

Another opportunity identified is in objectives and plans to achieve them; detailed information is needed about what needs to be done with the objectives. Organizations are now required to indicate what steps have been taken, what resources are required, who will be responsible for those objectives, and what will happen when an action cannot be completed (e.g., if a goal is not met). This will ensure that objectives are evaluated relative to the goals of the organization.

Yet another major opportunity identified is the risk based thinking entrenched in the new standard. An important aspect of checking the effectiveness of actions to address risk is having the right data available to make informed decisions. By improving risk data aggregation capabilities, organizations can strengthen the capability and the status of the risk function to make judgments. This leads to gains

in efficiency, reduced probability of losses, enhanced strategic decision-making and ultimately increased profitability.

### **Conclusion**

From the research it has emerged that implementing a quality management system has a range of benefits to organizations such as: achieving efficient operations, increased customer satisfaction, satisfaction of stakeholders, continual improvement, international recognition, improved quality and image among others. ISO 9001:2015 enables organizations to focus on key competence processes and apply the relevant principles in the most advantageous ways. Organizations can benefit from the range of the benefits identified and explore the opportunities available to ensure quality and success. Despite the identified challenges, developing a good quality management system and becoming certified to ISO 9001:2015 is a worthwhile challenge for any institution with aspirations of proving its quality.

### **Recommendations**

1. In order to implement ISO 9001:2015 successfully from beginning, the top management of TVET and other higher education institutions could use the identified challenges in this study to identify the barriers before they begin the certification process. Success of implementing ISO 9001:2015 QMS would be increased if it is well planned and implemented when the philosophical quality aspects of the organization are coupled with a rigorous employee training, periodic effective audits, corrective action and commitment all levels of the organisation.
2. The resistance to change is predictable in the educational institutions, since it deals with highly educated people who consider themselves as having extensive experience and knowledge and may be hesitant to accept new ways of doing things. The only way to get over this obstacle is to raise a special level of awareness in the organisation making the faculty members a part of it, which will help in spreading the quality culture smoothly within the educational institution. Engaging faculty and staff early in the process will certainly secure their buy-in and consequently their approval and acceptance of the outcomes.
3. Local and foreign ISO consultancy agencies can also benefit from the barriers found in this study when helping companies to obtain ISO 9001:2015 certification, because it will give them a full picture regarding the types of barrier which need to be overcome.
4. The standard is highly documentation-driven and requires that all documentation be updated to reflect all its system requirements. The study recommends use of an effective document management system that ensures easy accessibility and accuracy of documents while maintaining their validity. There also need for periodic sensitizations on the various documents that need

to be evaluated periodically such as the risk registers.

5. Finally, to resolve the issue of lack of clear understanding of the new standard requirements. We recommend that TVET and other higher education institutions to consider implementing the new ISO 21001:2018 standard which specifies guidelines for a management system for educational organizations (EOMS), through which these organizations can demonstrate the acquisition and development of competence through teaching, learning and research. ISO 21001 is a comprehensive, stand-alone international standard that integrates and complements other international standards. Certification against ISO 9001 followed by ISO 21001, may be considered as a hybrid two step model for getting a higher education institutions certified for both its administrative and academic processes, respectively.

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