



# QUALITY MANAGEMENT SYSTEM IMPLEMENTATION AND OPERATIONAL PERFORMANCE OF NATIONAL COUNCIL FOR LAW REPORTING, KENYA

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**ABSTRACT: Purpose:** This study aimed to establish how implementing quality management systems would have effects on operational performance of an organization. **Design/Research method:** Literature on implementation of quality management systems was reviewed and based on that questionnaires were administered to all employees at the National Council for Law Reporting. The collected data was analyzed using descriptive statistics and correlation analysis. **Finding:** The findings reveal that the organization has realized considerable improvements on the performance of its operations due to the implementation of the quality management system. **Limitation:** Respondent composition was a limitation since the study only focused on the employees of the organization and views were not collected from other stakeholders such as customers and suppliers hence it lacked representativeness of all the stakeholders of the organization. **Implication:** Further research is required to focus on all the organization's stakeholders such as customers, suppliers, financiers so as to determine the impact of the implementation of quality management system on their service encounter. Additionally, a research study would be required to assess the process undertaken in implementing quality management system that meets the specific needs of the organization.

**Keywords:** Quality Management System, Implementation, Operational Performance, National Council for Law Reporting and Kenya.

## 1. INTRODUCTION

Many organizations compete for eminence in quality, reliability, price and delivery. Of all the parameters mentioned, the quality of the product remains the most desirable of these distinctive elements (Oackland, 2003). Over time, competition in the market place has intensified forcing companies to evolve the quality of their performance by putting in order their quality practices with the aim of capitalizing on available opportunities that would lead to achievement of competitive advantage. This is possible through adaption of quality management approach, which ensures that quality beliefs and practices that are well understood, and spread in the whole organization. Consequently, the principal outcome is improving the knowledge base on the centrality of quality to the overall thus developing a well-established quality blueprints, practices and systems (Maletic *et al.*, 2014).

Quality management refers to synchronized activities that guarantee a particular quality of organization output. These activities are quality planning, quality control, quality improvement and quality assurance. Quality control's focal point is on activities that monitor processes to ensure that output is of the required quality and discrepancies corrected whenever they arise while quality assurance's focuses on the capacity of a process to produce a product or service that satisfies the needs of customers. Quality planning is involved with setting up quality objectives and generate products and processes necessitate meeting of the established goals and quality improvement involves establishing infrastructure needed to ensure improvement in quality through enhancing the effectiveness and efficiency of processes and improving products to ensure that they meet requirements (Nanda, 2016).

This study was anchored on systems and resource based theories. System theory places emphasis on analyzing an organization from a system point of view where complexity is reduced by dividing the whole system into subsystems and understanding how the various elements interact with each other in the achievement of the required goals. This makes it possible for an organization to identify key and supporting processes that are helpful in adding value to stakeholders and better allocation of resources (Rocha-Lona *et al.*, 2013). Whereas resource based theory focuses on resource-based perspective that assures sustained competitive advantage achievable through taking advantage of the competencies that arise from the characteristics of the available resources (Linstead, 2009).

Operational performance is of utmost importance to an organization in the sense that it not only improves effectiveness of production but also creates high quality products and customer satisfaction. This eventually results in increased revenue and profits for the organization. It can be improved if the quality management practices are implemented as an integrated system where they interact with each other rather than independent practices thus improving performance (Truong *et al.*, 2014).

Improving operational performance would require performance measurement which if implemented would lead to improved quality and productivity. Performance measurement would be instrumental in determining the difference between the actual performance and the desired performance which would necessitate the changing or improving the processes that would in effect improve performance (Kaydos, 1999). Operational performance is the dependent variable in this study.

NCLR, whose brand name is Kenya Law, exists through the National Council for Law Reporting Act of 1994. It is a semi-autonomous public entity whose parent institution ostensibly being the Judiciary. The President of the Kenyan Judiciary chairs the operating committee and fulfills his mandate with the help of a secretariat that has a Chief Executive/Senior Editor as the administrative head.

The organization has 71 staff members who work in different departments, which include Human Resource, Laws of Kenya, Law Reporting, Finance, Marketing and Communication, Internal Audit, Information and Communication Technologies, Research and Development and Strategy, Quality Assurance and Performance Management. In the year 2017, NCLR began the journey of implementing QMS as a way of improving on effectiveness of the organizational to achieve ISO 9001 certification. Internal audit of the QMS done in the year 2018, the first external audit of the system conducted in the month of June 2019, and the second external auditing done in the month of August. The results of the audit revealed that the organization has successfully implemented its QMS and in the month of September, Kenya Law became ISO 9001:2015 certified.

## **1.1. Research Problem**

The success of an organization can be pegged on the extent to which the organization can create products or provide services of higher quality than competitors provide. If quality is fundamental in the achievement of an organization's success then QMS provides an opportunity for organizations not only to sustain but also to meet present quality levels and consumer's requirement (Rocha-Lona *et al.*, 2013).

The typical system put in place to manage quality provides an integration of activities that direct and control an organization and to manage organizational resources towards continued optimal outcomes in the delivery; resulting in delivering customers' requirements by consistently providing the desired products and meeting organizations requirements through efficient resource use in the organization. Implementing a QMS renders the opportunity to identify risks faced such as products or services that are not of quality, failure of suppliers, rising costs in production, lateness in delivery ("Quality Management system", n.d).

State corporations such as Kenya Railways cited as institutions that have failed in their service provision. The then Treasury Cabinet Secretary, Henry Rotich was of the opinion that such institutions require key reforms that would address system weakness (Michira, 2018). A QMS is an assured approach that would allow an organization to achieve excellence through improving performance and providing a strong focus on customers.

Parastatals that come into existence pursuant to the enabling State Corporations Act under the third section are partially/fully owned by the government and their role is to provide essential services. Most of the state corporations lack competitors. Question begs, should quality be compromised or little attention be given to quality. With increasing customer expectations, state agencies cannot ignore quality issues and expect to deliver reliable services. The state agencies provide essential services meaning that there are processes in place, resources and the ultimate customers being served by these institutions. There is need for assessment of their processes, factors whether internal or external that affects quality and the need to improve on service provision to consistently provide services that lead to customer satisfaction.

A number of scholarly inquiries that have interrogated the concept, in context, of QMS affects OP in service/manufacturing organizations that are small and medium enterprises. Through those studies an individual can easily understand that the mechanism/system is, a sure bet that would enhance operational as well as the organization's performance. (Roy and Ghose, 2016) conducted a case study on QMS in operations. The authors concluded that a quality management system aids in enhancing organization's performance through improvement of customers' needs and better documentation. It is effective in continuous growth of an organization.

Zimon (2015) examined the impact of quality management system in streamlining and improving warehouse processes. The study revealed that application of quality management system requirements resulted in improvements in the warehouse' internal operations thus reducing on loss of quality brought about by defects and non-compliances.

Njenga and Kidombo (2017) studied the impact of a quality management system on Operation Performance (OP) of technical training institutions, a case of the Nkabune Technical Training Institute, Kenya. From their analysis, they came to the empirical conclusion out that leadership, training, focusing on the consumer, and involving employees had great influence on Operational Performance.

Based on the above understanding, quality management system is mandatory for every type of organization that wants to deliver quality and excel in satisfying the needs of their customers. There is no available information regarding a study within National Council for law reporting that recently implemented a QMS for the purpose of conforming to the statutory requirements as entrenched in the 1994 Act creating the national council for law reporting, Kenya; and the attendant legal notice that came into force in 2009 are particularly useful in identifying this matter. In addition, they also speak to the organization of its processes, improving the efficiency of its processes and continuous improvement in delivering products and provision of service. There was therefore need for a study to be done with a specific focus on national council for law reporting, Kenya; based on the following research questions; what is the extent of implementation of the quality management system requirements? What is the relationship between implementation of quality management systems and operational performance? What would be the barriers to implementing quality management system? What would be the benefits of implementing quality management system?

The principal aim of the investigation was to evaluate the effects of implementing quality management system on operational performance with particular attention to national council for law reporting, Kenya. Arising from these, the specific research objectives were to determine the extent of implementation of the quality management system requirements in national council for law reporting, Kenya; and to establish the relationship between quality management systems implementation and operational performance in national council for law reporting, Kenya.

## **2. LITERATURE REVIEW**

In this section, the focus of the paper is to illustrate current scholarship on the subject.

### **2.1. Theoretical Literature Review**

Eisenhart (as cited by Grant and Osanloo (2014) explains theoretical frameworks as being the structure from which the formal theory of a concept is explained, formulated by using an established explanation of a phenomena and relationships. It also serves as a structure for the rationale of the study and provides a justification for the literature review (Grant and Osanloo, 2014). The theories that the study focused on were systems theory which is instrumental in understanding the importance of managing quality by a system and resource based theory that considers the operations competencies which have an influence on the plan of action of operations that would ensure organizational effectiveness.

Systems theory: Systems theory considers a system as a collection of interrelated parts that work together to achieve a stated goal. An organization is a system with a set of inputs such as materials, people, information, finance that are transformed into outputs such as a product or service (Plunkett *et al.*, 2015). Analyzing an organization from a systems point of view helps to reduce complexity by dividing the whole system into subsystems and understanding the way the elements interact with each other in the achievement of the required goals. It allows for identification of key and supporting processes that are instrumental in adding value to stakeholders as well as better allocation of resources that are required (Rocha-Lona *et al.*, 2013). Systems theory encompasses systems approach as one of those principles in the management of quality outcomes.

Resource-based Theory: The crux of this theory concerns itself with linking the available resources to the firm's capabilities which rely on the status and innate qualities of resources both in the external and

internal business entity. A resource based perspective will sustain the advantageous competitive advantage that is achievable through leveraging competencies that arise from resource traits (Linstead, 2009). In resource based view approach, internal resources include the organizational, human and physical resources.

## **2.2. Quality Management System**

Quality being an end point, quality management therefore is the approach and process of reaching the end point (Knowles, 2014). QMS is a formalized system that documents procedures, processes, and responsibilities for the purpose of achieving quality policies and objectives through coordinating and directing an organization's activities towards meeting customer and regulatory requirements in addition to improving its effectiveness and efficiency on a continuous basis (American Society for Quality, 2018). The key Quality Management System are: Measurement, analysis and improvement requirements, Resource management requirements, Management responsibility requirements, (Oackland, 2003), and Realization requirements (De-Silva, 2013).

**Management Responsibility:** Management responsibility places emphasis on the obligations of the management in relation to the needs of the customer, quality policy, quality planning, quality objectives, management review, quality manual, documents control and the control of quality records (Oackland, 2003). **Requirement for Managing Resources:** It is prudent to allocate and appropriate all the necessary resources required in establishing and improving the system that will manage quality. There is similarly the need to ascertain the training necessary to get to this level, while addressing the needs of the organization (Oackland, 2003).

**Realization Requirement:** This requirement manages the processes involved in the manufacture of products or provision of service (De-Silva, 2013) and it is a requirement that relates to how the order of production should be conceived, set out, and restrained to ensure they effectively contribute to organizational vision for quality of finished products (Oackland, 2003). These requirements are then reviewed to ascertain whether the organization is in a capacity to deliver them (Oackland, 2003). **Measuring, Analyzing, and Improvement Requirement:** Effectuating measurement, analysis and improvement processes is necessary in ensuring that products or services provided adhere to requirements and that the schedule of these measurements should be determined and their outcome recorded. This outcome serves as an input to management review (Oackland, 2003). Customer satisfaction is the principal quantifier of a system's output and those internal audits serves as a tool for evaluating system compliance (Nima *et al.*, 2019).

## **2.3. Operational Performance Measurement**

Operations performance can make or break any organization reason being that operations function allows an organization to gain competitiveness through instituting capabilities that will ensure that it stays ahead of its competitors in the long-term and finding ways of responding to the unique needs of customers (Slack and Lewis, 2011). Operational performance is the measurable aspects of the outcomes of an organization's process such as inventory turns and cycle times. The performance of an operation in turn affects business performance measures such as market share and customer satisfaction (Voss *et al.*, 1997).

An operation that carries out its activities fast affects the rate of delivery of products or services. Speed has an impact on customer service. Lower costs of producing products and services would mean customers would offer lower prices. Low costs would mean reduced prices as a way of gaining increased volumes or rising profitability on volume levels that exists within the organization (Slack *et al.*, 2013). Other benefits realized would include motivating in addition to changing the culture of an organization. Performance measures spur the modeling of a culture of excellence, teamwork and continuous improvement (Kaydos, 1999).

## **2.4. Empirical Literature Review on Quality Management System and Operational Performance**

The former solely affects the latter concept. Two principal benefits realized in implementing the quality management systems are meeting the customer's requirements and that of the organization. Within these two principal benefits are advantages such as producing of consistent results, prevention of mistakes, costs are reduced, processes are defined and controlled, and continually improving on the offerings of the organization (American Society for Quality, 2018).

Muiruri (2016) in her study concluded that the adoption of QMS results in prompt delivery of services and improvement in product quality because of reduction in customer complaints. Studies have been carried out on the execution of QMS and the effects it permeates on the excellence of operations and the wider organization. Strong correlations are reported when both are working well. White *et al.* (2009) even went so far as testing this hypothesis on an organization that does not work for profit. The unique thing about this organization was that it did not have the pressures of performance or survival the way the typical corporate entity does. All the same, the results of the research were the same. A strong synergy between the two factors contributed to heightened productivity in a positive way at the end of the observational cycle.

Kaziliunas (2010) conducted a study on implementation of QMS in service organizations. The author was of the opinion that QMS are relevant in our today's society and if based on international standards would benefit manufacturers, users, consumers, service providers. It is a process that is reinforced by an organization's strategy, goals, and policies and that the value of a QMS would depend on how it is implemented and its performance can be improved if new standards are adopted rather than incorporating it in an existing quality management system.

### **3. RESEARCH METHODS**

This section gives an overview of the research design that was employed, respondents of the study, sampling and sampling size, data collection methods and instruments used and analysis of the data collected.

#### **3.1. Research Design**

The study espoused a descriptive research design as it sought to describe as well as explain how implementation of QMS has affected operational performance in the organization. A descriptive study not only helped in describing the research problem more clearly with an aim of establishing which and how the quality management system requirements affected the operational performance (Magutu *et al.*, 2015; Magutu *et al.*, 2016; Mose *et al.*, 2013).

#### **3.2. Data Collection**

The respondents were heads of departments who are quality implementers and employees from each department. NCLR is a lean organization with a total of 71 members of staff who work in the organization's nine departments. Given the size of the population, all the respondents were targeted.

#### **3.3. Data Analysis**

Data analysis was based on the four objectives of the study. The collected questionnaires were edited for completeness and consistency and coded for purpose of categorizing the responses. The research was quantitative and the researcher used SPSS software to analyze the collected data.

### **4. RESULTS AND DISCUSSIONS**

#### **4.1. Introduction**

This section presents the analysis, presentation and interpretation of data collected in line with the four research questions investigated; (i) extent of implementation of the QMS requirements (ii) relationship between QMS implementation and operational performance.

#### **4.2. Response Rate**

71 questionnaires were distributed to the employees of NCLR and out of these 36 questionnaires were returned duly filled where 9 were questionnaires received from team leaders while 27 were employees from each of the nine departments. The response rate was 50% from the target population.

#### **4.3. Implementation of the Quality Management System Requirements**

The first research question required the respondents to indicate the degree to which they agreed or disagreed with how QMS requirements have been executed in the organization. The interviewees were required to rate the level of implementation using a Five point Likert scale (1 as strongly disagree and 5 as strongly agree) in relation to 58 statements which were grouped into four categories of quality

management requirements namely; management responsibility, resource management, realization requirement and measurement, analysis and improvement.

**Table 1.** Quality Management Systems Requirements

QMS Requirements	Mean	Standard Deviation
Management responsibility	3.76	0.1133
Realization Requirement	3.58	0.1409
Resource management	3.55	0.1349
Measurement, analysis and improvement	3.52	0.179

Source: Authors (2019)

As can be seen in [Table 1](#), Management responsibility (M=3.76, SD=0.1133) scored the highest and the least scored requirements was Measurement, analysis and improvement (M=3.52, SD=0.179). There was a general consensus from the respondents with regard to the Quality Management Systems Requirements that were interrogated in this research going by the variance from the general mean. The parameters considered under the quality management systems requirements are briefly outlined and their results shown in [Table 2](#) to [Table 3](#).

#### 4.3.1. Management Responsibility as a requirement of Quality Management Systems

The study sought to establish the requirements that apply to top management which serve as evidence for the management’s commitment to the establishment and implementation of the QMS and its continuous improvement as a way of improving the effectiveness of the system. The results are indicated in [Table 2](#).

There were 19 statements as indicated in [Table 2](#), majority of the respondents believe that top management was committed to the implementation of the QMS. The management has ensured that responsibility and authority in relation to QMS is defined and the delegation of authority and assignment of responsibility is carried out so that: there are individuals who are accountable (M=4.22, SD=0.760) had the highest ranking, while products and services are planned, designed, developed, produced and delivered as per the customers’ requirements (M=3.39, SD=1.103) and Customers’ needs and expectations being communicated throughout the organization (M=3.28, SD=1.003) had the least ranking. [Okwiri \(2013\)](#) believes that leadership brings about the appropriate organizational culture and direction. [Zajarskas and Ruzevicius \(2010\)](#) also hold the view that implementation of quality management system would be most efficient when it is coordinated directly by the management of an organization and the employees of the company as a way of ensuring that a new quality culture is being formulated purposefully.

**Table 2.** Management Responsibility Requirements

Management responsibility	Mean	Std. Dev
The management has ensured that responsibility and authority in relation to QMS is defined and delegation of authority and assignment of responsibility is carried out so that there are individuals who are accountable	4.22	.760
Top management is committed to the implementation of the QMS and continually improving its effectiveness.	4.14	.639
Existence of quality objectives that defines the functional responsibilities within the organization	4.08	.874
The organization focuses on current and future needs of customers and the needs are defined as the requirements for the organization	3.97	.878
The management has communicated the vision, mission, policy, strategies and processes throughout the organization	3.94	.826
Organization has ensured that there is organization wide commitment to quality	3.94	.851
Customers’ needs and expectations are linked to the objectives of the organization	3.92	1.052
The top management has ensured that quality management system planning is carried out to achieve quality objectives	3.92	.874
There is availability of a quality manual that encompasses the quality policy, definition of the quality management system, the interactions between QMS processes and documented procedures	3.89	.887
There is a defined and published quality policy that has been communicated and well understood by organizational members and IS maintained at every level of the organization	3.79	.845

There is control of quality records that are required in ensuring conformance to requirements and effective operation of the quality management system	3.69	.786
The management has ensured that there is shared values and ethical models of behavior throughout the organization	3.64	.798
Management reviews the system at defined interval and records kept for actions agreed upon	3.58	.996
The organization effectively manages its relationships with customers so as to achieve sustained success	3.58	.906
The organization takes action in relation to interested parties needs that may have effects on customer satisfaction	3.56	.746
16. The organization measures and monitors customer satisfaction so as to determine the appropriate action	3.50	.971
There exists established procedures where new and revised documentation required for the operation of the QMS are controlled	3.42	.937
Products and services are planned, designed, developed, produced and delivered as per the customers' requirements	3.39	1.103
Customers' needs and expectations are communicated throughout the organization	3.28	1.003

Source: Authors (2019)

### 4.3.2. Realization as a Requirement of Quality Management Systems

Realization requirement sought to verify through use of 14 statements the extent to which the respondents agree that organization determines the processes necessary in converting customer requirements into customer satisfaction through provision of the required products or services. This also included determining whether there is a sequence and that interactions of processes are properly planned and controlled to guarantee that they operate effectively. The results are presented in Table 3.

The results revealed that majority of the respondents believe that Objectives relating to systems and processes are well defined which had the highest ranking of (M= 4.09, SD=0.621). The statement “The capabilities of the organization are well understood and any resource constraint is identified before any action is taken” (M= 3.25, SD=1.05) as a realization requirement received the lowest score.

Abuhav (2017) opines that availability of resources is fundamental in the realization of product or service not forgetting the required processes and activities required to realize them. Creating standardization of processes in the organization ensures that every organizational unit work in a unified way and determining the key processes and sub processes that are essential in the delivery and realization of product or service.

Table 3. Realization Requirement

Realization Requirement	Mean	Std. Dev
Objectives relating to systems and processes are well defined	4.09	.621
There is established authority responsibility and accountability in relation to managing processes	4.00	.894
The organization has well planned processes required for the realization product and service	3.97	.845
The design and establishment of products or services are planned, controlled, reviewed, verified and validated	3.74	.828
Processes and their interdependencies are managed as a system with the view of achieving quality objectives efficiently and effectively	3.63	.833
Processes involved in purchasing are controlled to ensure that product or services conform to organizational requirements	3.62	1.015
There is availability of monitoring and measuring devices that ensure conformity to the specified requirements	3.57	.815
Processes for production and service delivery are controlled through provision of information detailing the product or service, work guidelines that are understandable, suitable work environment, acceptable inspection, measuring and test equipment	3.49	.981
Customer related processes have been established to identify customer requirements	3.44	.860
Risks that may affect the output of the processes are identified and managed	3.35	1.178
Information is made available on how to operate and improve processes	3.35	.884
Post delivery services are planned and done in line with customer requirement	3.33	1.042
Process interdependencies are determined and any changes made on individual processes are analyzed to determine their effects on the whole process.	3.25	.967
The capabilities of the organization are well understood and any resource constraint is identified before any action is taken	3.25	1.105

Source: Authors (2019)

### 4.3.3. Resource Management as a Requirement of Quality Management Systems

Resource Management sought to establish whether the organization determines and provides the vital resources required in improving the QMS. This requirement also aimed at establishing whether there is provision of infrastructure that would necessitate the achievement of conformity to the product or service requirements, including work environment, buildings, equipment and provision of supporting services. The results are as indicated in the [table 4](#).

Through a list of 10 statements as indicated in [Table 4](#) the respondents to a great extent believe that the organization has ensured that there is determination of resources required in the implementation and maintenance of QMS. Majority of the respondents concurred that the organization has provided a conducive work environment required in product (M= 4.25, SD=0.732) while “Employees are empowered to ascertain the constraints they encounter in their performance and take initiatives” had the least ranking of (M=2.89, SD= 1.01).

**Table 4.** Resource Management Requirements

Resource Management	Mean	Std. Dev
The organization has provided a conducive work environment required in achieving conformity of product e.g. adequate lighting, proper ventilation	4.25	.732
Infrastructure necessary for the achievement of conformity to product or service requirements are provided and maintained e.g. equipment, support services, building	4.06	.924
The organization has provided resources required to implement and maintain QMS, continually improve its effectiveness and meeting customer requirements that leads to customer satisfaction	4.00	.828
There is self-evaluation of an employee’s performance against personal work objectives	3.75	.806
The organization has determined and assigned people who have the right training, skills and experience to the organizational activities that have an impact the adherence to product or service provision.	3.75	.937
The organization has provided training that is necessary in enhancing the competence of employees while performing their work	3.47	1.000
Open discussions and sharing of knowledge and experience is highly encouraged in the organization	3.19	1.167
There is communication in relation to employees performance and the importance of their contribution to the organization’s performance	3.11	1.116
The organization has ensured that employees are inspired, encouraged and that their contribution is recognized	3.03	.941
Employees are empowered to determine constraints to their performance and take initiatives	2.89	1.008

Source: Authors (2019)

[Singhal and Singhal \(2012\)](#) hold the view that resource management is the effective and efficient deployment of the required resources and is required to preserve and improve the QMS in the organization and carry out work required in a manner that organizational customers will be satisfied and that a review of the resources should be carried out on a regularly.

### 4.3.4. Measurement, Analysis and Improvement as a Requirement of Quality Management Systems

Using a list of 15 statements, the respondents were required to rate the extent to which they were in agreement that Measurement, Analysis and Improvement requirement sought to obtain information from the respondents on whether the organization has put in place plans as well as processes required in the monitoring, quantification, analysis and improvement of operations that are required in demonstrating product or service conformity. The results obtained are indicated in the [table 5](#).

The study revealed that “There are processes established for measuring and monitoring the performance of QMS” ranked the highest (M= 4, SD=0.53). This is an indication that majority of the those respondents concurred with the statement that there are established processes for measuring and monitoring the system. However the statement “Employees are trained in relation to the methods and tools of improvement (M=2.86, SD=1.09) had the least score which is an indication that few were in agreement with the statement.



**Table 5.** Measurement, Analysis and Improvement Requirements

Measurement, Analysis and Improvement	Mean	Std. Dev
There are processes established for measuring and monitoring the performance of quality management system	4.00	.535
The organization determines, measures and monitors the indicators that demonstrate performance of operations and the whole organization	3.89	.785
Organization ensures that data that is made available is accurate and reliable	3.75	.937
Corrective and preventive actions are taken to eliminate any occurrences and any potential problems that may affect quality	3.69	.749
Continual improvement is carried out to enhance organizations performance through reviewing quality policy, objectives and conducting frequent audit	3.69	.980
Analysis of data is regularly carried out as a way of determining areas within the system where improvements can be effected.	3.67	.986
Data is made available to the relevant individuals	3.64	1.125
Organization ensures that there is joint improvement activities with interested parties	3.50	1.000
The organization encourages and takes recognition of improvements and achievements of partners and providers	3.47	.810
There are established processes for doing away with causes of non-conformities and prohibiting their reoccurrence	3.44	.969
Decisions are made and action taken based on facts and evidence	3.42	.806
The organization measures its performance and gives feedback to its interested parties as a way of enhancing improvement initiatives	3.36	1.125
Non-conforming products and services are controlled to prevent their use. The non-conformities are identified, recorded and action taken	3.31	.889
The organization has ensured that the improvement of products, services, processes and system is every individual's responsibility	3.17	1.231
Employees are trained in relation to the methods and tools of improvement	2.86	1.099

Source: Authors (2019)

Gustafsson (2016) believes that implementing a QMS is not a one day event but a continuous process of improvement and that it would be ideal for an organizations management to evaluate Quality Management System periodically.

#### 4.4. Relationship between Quality Management Systems Requirements and Operational Performance

The second research question sought to establish the relationship between Quality management systems requirements and operational performance. The correlation analysis was used to describe the data and identify the strength of the effect that the independent variables (Management responsibility, Realization requirement, Resource requirement, and Measurement, analysis and improvement requirement) have on a dependent variables (Cost, Speed, Flexibility, Dependability, quality). The results of the analysis are as shown in Table 6.

Correlation analysis revealed that a strong positive relationship existed among the quality management system requirements but not with the performance measures. As it can be seen in the table 6, correlation between Management responsibility requirement and the other requirements, Resource Management (0.852), Realization Requirement (0.631) and Measurement, Analysis and Improvement (0.698) revealed that the requirements are perfectly related in a positive way.

**Table 6.** Correlation Analysis

		1	2	3	4	5	6	7	8	9
Management Responsibility (1)	Pearson Cor	1	.852**	.631**	.698**	.198	-.048	.127	-.083	-.003
	Sig.(2-tailed)		.000	.000	.000	.246	.782	.461	.630	.986
	N	36	36	36	36	36	36	36	36	36
Resource Management (2)	Pearson Cor	.852**	1	.818**	.724**	.146	-.099	.085	-.059	-.053
	Sig.(2-tailed)	.000		.000	.000	.395	.566	.624	.730	.758
	N	36	36	36	36	36	36	36	36	36
Realization Requirement (3)	Pearson Cor	.631**	.818**	1	.668**	.061	-.078	.059	-.017	-.047
	Sig.(2-tailed)	.000	.000		.000	.722	.651	.733	.924	.786
	N	36	36	36	36	36	36	36	36	36
Measurement,	Pearson Cor	.698**	.724**	.668**	1	.099	-.200	.123	-.058	-.032

Analysis and Improvement (4)	Sig.(2-tailed)	.000	.000	.000		.566	.242	.476	.736	.851
	N	36	36	36	36	36	36	36	36	36
Quality (5)	Pearson Cor	.198	.146	.061	.099	1	.710**	.260	.556**	.635**
	Sig.(2-tailed)	.246	.395	.722	.566		.000	.126	.000	.000
	N	36	36	36	36	36	36	36	36	36
Speed (6)	Pearson Cor	-.048	-.099	-.078	-.200	.710**	1	.415*	.656**	.707**
	Sig.(2-tailed)	.782	.566	.651	.242	.000		.012	.000	.000
	N	36	36	36	36	36	36	36	36	36
Dependability (7)	Pearson Cor	.127	.085	.059	.123	.260	.415*	1	.494**	.544**
	Sig.(2-tailed)	.461	.624	.733	.476	.126	.012		.002	.001
	N	36	36	36	36	36	36	36	36	36
Flexibility (8)	Pearson Cor	-.083	-.059	-.017	-.058	.556**	.656**	.494**	1	.845**
	Sig.(2-tailed)	.630	.730	.924	.736	.000	.000	.002		.000
	N	36	36	36	36	36	36	36	36	36
Cost (9)	Pearson Cor	-.003	-.053	-.047	-.032	.635**	.707**	.544**	.845**	1
	Sig.(2-tailed)	.986	.758	.786	.851	.000	.000	.001	.000	
	N	36	36	36	36	36	36	36	36	36

Source: Authors (2019)

However, using the example of Management responsibility and performance measures (Quality =0.198, Speed =-0.048, Dependability = 0.127, Flexibility = -0.083 and Cost = -0.003) revealed that there was a significant negative relationship.

## 5. CONCLUSION

In conclusion, the implementation of quality management system requirements was above average at a percentage mark of 72%. Correlation analysis revealed that a strong positive relationship existed among the quality management system requirements but not with the performance measures This performance is attributed to some of the requirements that had low ranking.

## 6. RECOMMENDATIONS

Based on the data generated from the research, the organization should ensure that measuring, analyzing and improving of the operational systems; frequently carried out for the assessment for the performance of the quality management systems. This would guarantee achievement of the goal of realization requirements are met such as identification of deviations in processes and immediate action taken; prevention of non-conformities through identifying gaps in processes and this can be used as means to continual improvement.

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