

**AN INVESTIGATION ON THE EFFECT OF QUALITY MANAGEMENT
PRACTICES ON THE PERFORMANCE OF PUBLIC PRIMARY
SCHOOLS IN NAKURU MUNICIPALITY, KENYA**

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DECLARATION

This research project is my original work and has not been submitted for the award of a diploma or degree in any institution/University.

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DEDICATION

This proposal is dedicated to my dear wife Gladys whose support, motivation, encouragement and inspiration were key to the development of this project proposal. To our daughter Maureen, thank you for the patience and support. To my parents Samwel Ndung'u and Freshiah Wanjiku, thank you for standing by me. May the almighty God bless you abundantly.

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ABSTRACT

This study investigated the effect of quality management practices on the performance of public primary schools in Nakuru Municipality, Kenya. The research objectives were to; determine the extent to which QM practices have been applied in public primary schools and determine the effect of QM practices on performance in public primary schools within Nakuru Municipality. The study used a census survey of all the 60 public primary schools and the respondents of the study were 60 head teachers from all the public primary schools in Nakuru Municipality. The study used structured questionnaires to gather data from school head teachers. Data was analyzed with help of the Statistical Package for Social Sciences (SPSS). Descriptive statistics mean, median, mode, percentages were used. Inferential statistics regression analysis technique was used to analyze data. Study findings showed that competitive benchmarking, training as well as reward and recognition were achieved moderately whereas teamwork and customer focus were marginally achieved in the public primary schools in the study area. Quality management practices (top management commitment, teamwork, continuous improvement, competitive benchmarking, training, reward and recognition and customer focus) were found to significantly influence performance among schools in the study area. This study recommended the need to strengthen these elements of quality management practices in order to realize meaningful performance; effective application of quality management practices among other strategies in order to achieve measurable improvement in the performance. There is need for stakeholders in the public primary schools to increasingly and effectively implement the identified quality management practices in order to realize increased levels of performance especially in KCPE mean score, enrolment and co-curricular activities.

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LIST OF ABBREVIATIONS

BPM:	Business Performance Management
CPM:	Corporate Performance Management
DQAS:	Directorate of Quality Assurance and Standards
DQASO:	District Quality Assurance Officers
EPM:	Enterprise Performance Management
FPE:	Free Primary Education
ISO:	International Standards Organization
KCPE:	Kenya Certificate of Primary Education
MHE:	Ministry of Higher Education
MOE:	Ministry of Education
MOST:	Ministry of Science and Technology
OPM:	Operational Performance Management
PDCA:	Plan Do- Check-Act
PQASO:	Provincial Quality Assurance Officer
QA:	Quality Assurance
QC:	Quality Control
QM:	Quality Management
SPSS:	Statistical Program for Social Sciences
TQM:	Total Quality Management
UNESCO:	United Nation Educational, Scientific and Cultural Organization.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Quality Management is generally described as a collective, interlinked system of quality management practices that is associated with organizational performance (Cua et al. 2001), and Kaynak (2003), underlined the importance of causal relations between quality management practices. Feigenbaum (1994) contend 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”. Education is being driven towards commercial competition imposed by economic forces (Seymour, 1992).

Quality Management presents a strategic option and an integrated management philosophy for organizations, which allows them to reach their objectives effectively and efficiently, and to achieve sustainable competitive advantage (Goldberg and Cole, 2002). Even Total Quality Management (TQM) promoters agree that organizations have not found it so easy to implement the quality Management Practices and to achieve the expected benefits (Kirk, 2000). More critically, Brown (2000) concluded that there are still organizations where, despite this criticism, the quality management philosophy mechanism for contributing to better performances. This study extends previous research on the Quality Management Practices by establishing the impact of Quality Management practices on performance in public primary schools.

Quality authorities like Joseph Juran (1950's); Edward Deming (1950's) and Philip Crosby (1980's) have put forth several approaches to improve organization performance. These approaches are embodied in a set of quality management practices, known as Total Quality Management (TQM). On account of these policies, different approaches have been adopted for the introduction of quality management in organizations, such as top management commitment, quality planning, education and training, teamwork, continuous improvement, benchmarking, teacher empowerment and external assessment of the institutions, and different models of TQM (Wiklund *et al.*, 2003).

1.1.1 Nakuru Municipality

Nakuru, the capital of Kenya's Rift Valley Province, is located 160 kilometres northwest of Nairobi, along the Kenya-Uganda highway, at an altitude of 1800 metres. Founded by the British colonial authorities at the beginning of the 20th century as a station along the Ugandan Railway, Nakuru later became a service centre for a fertile agricultural hinterland occupied by white settlers. Nakuru as a county is divided into nine districts one of which is Nakuru municipality (Foekenn and Owour, 2000). Education services available in Nakuru municipality include pre-primary, primary, secondary and tertiary education. The municipal council and the private sector are the major providers of educational services. There are 60 government-aided primary schools and 45 privately-run primary schools in the municipality. Nakuru Municipality is divided into five education zones which are Eastern zone, Central zone, Western zone, Northern zone and Southern zone. Eastern zone has sixteen public primary schools with 257 teachers, Central zone has 11 primary schools and 175 teachers, Western zone has 11 primary schools and 252 teachers, Northern zone has 9 primary schools and 202 teachers, Southern zone has 13 primary schools and 237 teachers, Enrollment in public primary schools within Nakuru Municipality currently stands at 49,607 pupils represented by 24,775 boys and 24, 832 girls spread over 1050 classrooms (UNESCO, 2005).

1.1.2 Quality Assurance and Standards in Education in Kenya

The Ministry of Education in Kenya is responsible for centrally providing educational services in the country. The ministry's vision is "to provide quality education for development" while its mission is "to provide, promote and co-ordinate lifelong education, training and research for Kenya's sustainable development" (Ministry of Education Strategic Plan 2006-2011, 2005). At independence in 1963, the Kenya government recognized education as a basic human right and a powerful tool for human resource and national development. Since then, policy documents have reiterated the importance of education in eliminating poverty, disease and ignorance (Ominde Report, 1964). Ministry of Education (2005) states that the government is fully committed to an education system that guarantees the right of every learner to quality and relevant education. Chapman and Carrier (1990) emphasized that particular attention should be given to the issues concerning educational quality and improvement strategies in the developing world. It is in this light that the Ministry of Education deemed it necessary to improve its inspection wing by

restructuring it and changing its name from The Inspectorate in 2004 to the Directorate of Quality Assurance and Standards DQAS (Sessional Paper no.1, 2005). In the restructuring there was the creation of the Directorate of Quality Assurance and Standards at the National, provincial, district and divisional levels. At the provincial level there is the Provincial Quality Assurance Officers (PQASO) in charge of quality assurance in both primary and secondary schools. At the district level we have District Quality Assurance Officers (DQASO) in charge of quality assurance in both primary and secondary schools. At all levels the incumbent Directorate of Quality Assurance and Standards constitutes the Directorate of Quality Assurance and Standards for school quality and standards assessment.

At school level principals and deputy principals are the designated internal quality assurance officers and at departmental level the heads of departments are the designated quality assurance and standards officers (Sessional Paper no.1, 2005). School prefects are mandated to assist school administrators in carrying out duties and responsibilities that enhance quality of education in Kenya. These duties and responsibilities include supervision of curricular activities such as preps and co- curricular activities such as drama, music and subject based clubs (Secondary schools Heads manual, 1979). The functions of Quality Assurance and Standards Officers include having regular reporting on the general quality of education, identifying educational institutional needs for improvement, ensuring that quality teaching is taking place in the institutions, monitoring the performance of teachers and educational institutions in accordance with all round standard performance indicators, ensuring equitable distribution of teachers by working out the curriculum based establishment, carrying out regular assessment of all educational institutions , advising on the provision of proper and adequate facilities in educational institutions, ensuring that the appropriate curriculum is implemented in educational institutions, encouraging a collaborative and corporate approach to educational institutional management among the various stakeholders, and organizing and administering co curricular activities with a view to developing all round learners (Wasanga, 2007).

1.1.3 The implementation of free primary education in Kenya

Since independence, the Kenya government has had two attempts or interventions of implementing free primary education (Sifuna, 2005). The first was in the 1970s, which was unsuccessful, and the second is the current one which was introduced in January 2003 (Sifuna,

2005). The second attempt is just what Sifuna describes as a re-introduction of the free primary education policy or rather a repeat (Sifuna, 2005).

Since independence the Kenya government has always desired to offer free primary education programme in order to reach and support the children of the disadvantaged communities (Sifuna, 2005; Rob et al., 2004). With the introduction of Free Primary Education (FPE) the schools lost revenue as a result of the abolition of tuition fees and other levies and there was significant pressure on the physical facilities and teaching staff. There was overcrowding in classrooms and the supply of teaching and learning materials underwent a severe strain. In terms of the teaching force, at the time of the pronouncement the country was already experiencing serious shortage of properly trained teachers (Sifuna, 2005).

As a result of the introduction of FPE an estimated 1.5 million children who were previously out of school were enrolled in primary education. The government was praised because of implementing the FPE policy, which was described as laudable (Rob et al. 2004). Provision of instructional materials especially textbooks was recognized as one of the major achievements of the FPE programme (UNESCO, 2005). But Yieke (2006) and UNESCO (2005) note that the policy was rushed without consultation with various key stakeholders such as teachers and parents, among others. Many issues were rushed through without being addressed adequately.

According to Sifuna (2005) the government did not carry out a situation analysis before implementing FPE. The result was serious confusion amongst teachers, parents, school committees, sponsors and local donors. Also there was still lack of clear guidelines on admission, resulting in the entry of over-age children (UNESCO, 2005). Also FPE disbursements were not always done on time and the procurement procedures have also been too cumbersome and time consuming. The delay in disbursement of funds by the Kenyan Government is still noticeable four to five years on (Kenya, 2008). There has also been lack of sustained and comprehensive communication strategy for FPE (Kenya, 2008). This suggests that a majority of the education stakeholders are left in limbo. Other challenges besieging the implementation of the programme include unavailability of sufficient physical facilities, school furniture, equipment and teachers among others (Rob et al., 2004; Kenya, 2008). In other words there were serious

shortfalls in instructional materials, building funds and furniture (Riddell, 2003). The result is overcrowded classrooms and overburdened teachers, which are likely to negatively affect the quality of education being offered (Yieke, 2006).

The other challenge undermining the policy include, pupils being in inappropriate classes. For instance, only a quarter of the pupils are actually in a grade that is suitable for their age and 44 percent were over-age for their grade by two or more years, with the result that the learning achievement was negatively affected (UNESCO, 2005). Therefore, while the government has been praised for the implementation of the FPE policy, to many it is a repeat of policy. Based on the experience of implementation of the previous FPE policy and the challenges besieging the current FPE policy, critics consider it to be a passing cloud (Sifuna, 2005).

1.2 Statement of the Problem

Quality Management practices are a collection of management practices that are associated with organizational performance. Studies have indicated that organizations that implement Quality Management practices have enhanced their performance. Organizations that focus on Quality Management practices involve and motivate employees to achieve quality output and focus on satisfying customers' needs. The extent an organization implements Quality Management practices, performance is enhanced (Brah et al., 2002). Public primary schools in Kenya have instituted some Quality Management practices in their service provision. Despite the concerted efforts to implement the quality management practices, most of the primary schools in Nakuru Municipality have continued to have dismal performance in academics see appendix III (District Education Offices, Nakuru). This study seeks to bridge the knowledge gap on the effect of Quality Management practices on performance in public primary schools within Nakuru Municipality.

1.3 General objective of the study

The general objective of the study was to investigate the effect of Quality Management practices on performance in public primary schools in Nakuru Municipality in Kenya.

1.4 Specific objectives

The specific objectives of the study were:

- i. To determine the extent to which Quality Management practices have been applied in public primary schools in Nakuru Municipality.
- ii. To determine the effect of Quality Management practices on performance in public primary schools in Nakuru Municipality.

1.5 Research Questions

- i. To what extent has Quality Management practices been achieved in public primary schools in Nakuru Municipality?
- ii. What is the effect of Quality Management practices on performance in public primary schools in Nakuru Municipality?

1.6 Significance of the Study

The study will yield information that may be useful for proper planning and decision-making at the Ministry of Education to improve primary schools competitiveness in Kenya. The findings and recommendations of the study may also be useful to the head teachers and school management committees of primary schools. Knowing the QM practices and their effectiveness will enable the school managers to know the areas requiring improvement and enable the Ministry of Education to plan further on this practice. The study will form a basis for further research on how QM practices enhance the competitiveness of not only primary schools but other organizations. This may lead to the generation of new ideas for the better and more efficient management of primary schools and other organizations in Kenya and globally.

1.7 Scope of the study

The study confined itself to the QM practices in public primary schools within Nakuru Municipality in Kenya. Data collected covered performance in public primary schools in the period 2006-2010 and QM practices implemented within the same period. With regard to organizational performance, the study was confined to measurable indicators such as academic performance, enrolment of pupils and co-curricula activities, within the period.

1.8 Limitations of the study

Some respondents were not willing to cooperate in filling the questionnaires and the researcher had to assure them of confidentiality of information and that the research was for academic use only. Other respondents misplaced the questionnaires and the researcher had to give them other questionnaires to fill.

1.9 Operational Definition of Terms

Academic performance refers to quality marks scored in the Kenya Certificate of Primary Education (K.C.P.E Marks).

Competitive benchmarking refers to the continuous process of measuring products, services, and practices against those of the competitors or leading firms.

Continuous improvement refers to the relentless pursuit of improvement in the delivery of value to customers.

Customer focus refers to the degree to which a firm continuously satisfies customer needs and expectations.

Employee participation refers to the degree to which employees in a firm engage in various quality management activities.

Quality management refers to activities aimed at meeting customer demands and applicable regulatory requirements, as well as efforts to continually improve the organization's performance. Included here are steps taken to minimize the effects of product deficiencies and to continually improve product performance.

Quality control (QC) circle is a group of workforce-level people, usually from within one department, who volunteer to meet weekly to address quality problems that occur within their department.

Quality system refers to the organizational structure, procedures, processes and resources needed to implement quality management.

Recognition refers to the public acknowledgment of superior performance of specific activities.

Reward refers to benefits, such as increased salary, bonuses and promotion, which are conferred for generally superior performance with respect to goals.

Total Quality Management refers to the application of quality management principles to all aspects of the organization, including customers and suppliers, and their integration with the key business processes.

Training refers to the acquisition of specific skills or knowledge.

CHAPTER TWO

LITERATURE REVIEW

2.1 The Concept of Quality Management

Quality management involves the formulation of strategies, setting goals and objectives, planning and implementing the plans; and using control systems for monitoring feedback and taking corrective actions. An organization's quality management implementations are of two folds: Satisfying customer's expectation and improvement in the overall business efficiency (Dale, et al 1994). According to Juran (1988), the basic goal of quality management is the elimination of failure; both in the concept and in the reality of products, services and processes. This does not only mean that product, services and processes will fail in fulfilling their function but that their function was not what the customer desire. Failure must be prevented in quality management and to handle this there should be planning, organizing and controlling.

From the perspective of the consumers or users, quality management is in the product or service. From the perspective of the organization providing goods/services, the process-perspective is more useful (Sangeeta and Banwe, 2004). From a managerial philosophy viewpoint, the elements of Quality Management are varied and this is very apparent in education. The different terms like strategic quality management, total quality improvement, and total quality leadership are actually examples showing the different emphasis placed on particular aspects of what is generally called quality management (Sangeeta and Banwe, 2004). Seymour (1992) identified four philosophical principles for what he called strategic quality management: "meeting or exceeding customer needs", "everyone's job", "Continuous improvement" and "leadership". He believed that the domination of customers is a reality that displays itself, for example with the quality marks. Relating to continuous improvement, Seymour (1992) highlighted the importance of processes and the necessity for a never-ending improvement strategy using the plan do- check-act (PDCA) cycle. Tribus (1993) expressed the "process over the product principle" for the classroom stating that for improving students' achievements, the teaching process and not the examinations should be addressed. Harris (1992) defined the stages in a PDCA cycle developed for course improvement as designing courses to actually meet students' needs (plan), teaching

subjects (do), assessing how students use learning and surveying students' opinions (check), and modifying according to assessment findings (act).

2.2 Total Quality Management

This is the highest level of quality management. It is concerned with the management of quality principle in all the facets of a business including customers and suppliers (Dale et al, 1994, Lockwood et al, 1996). Total Quality Management (TQM) involves the application of quality management principles to all aspects of the organization, including customers and suppliers, and their integration with the key business processes. It is an approach which involves continuous improvement by everyone in the organization. TQM is a principle which involves the mutual cooperation of everyone that aids the business process of an organization and it involves all the stake holders of an organization (Dale et al, 1994).

According to Mohammed (2006), TQM is an effective system for integrating the quality development, quality maintenance and quality improvement efforts of various aspects of a system so as to enable services at most economical level and derive full satisfaction. TQM is aimed at the satisfaction of customers needs in an efficient, reliable and profitable way. It involves a radical direction through which an organization perform her day to day operations in other to ensure that quality is put at the top of mind of every employee and departments in which they operate. Vorley and Tickle (2001), defined TQM as the synthesis of the organizational, technical and cultural elements of a company.

They contend that TQM is a heart and mind philosophy which recognizes that company culture affects behaviour which in turn affects quality Oakland (1989), describes TQM as an approach to improve competitiveness efficiently and flexibility for the whole organization. According to Hellsten and Klefsjö (2000), TQM can be defined as a management system which consist of interdependent unit namely core values, techniques such as process management, benchmarking customer focused planning or improvement teams and tools such as control charts. Dahlgaurd, Kristensen and Kanji (1999) saw TQM as a corporate culture that is characterized by increased customer satisfaction through continuous improvement involving all employees in the organization. Oakland (1989), noted that 'for an organization to be truly effective each part of it must work properly together towards the same goal, recognizing that each person and each

activity affects and in turn is affected by each other – the methods and techniques used in TQM can be applied through out any organization.’

2.3 Major Quality Management Practices

From various Quality Management models the eight quality management practices which are customer focus, leadership, personnel involvement, process approach, system approach to management, continuous improvement, factual approach to decision making, and mutually beneficial relationships with suppliers Lam et al (2002). ISO 9001 standard is a generic standard that means the standard could be applied to all organization without depending on the type, product, and size of organization ISO (2008). Before an organization can rip the benefit from Quality Management implementation, some principles would have to be enshrined into the organization’s culture.

2.3.1 Top Management Commitment and Leadership

The role of management commitment is well recognized as a primary requirement in standards such as ISO 9001 and ISO 14001. Quality Management requires effective change in organizational culture and this can only be made possible with the deep involvement/commitment of management to the organization’s strategy of continuous improvement, open communication and cooperation through out the organization. Quality Management implementation improves the organizational performance by influencing other Quality Management dimensions (Kaynak, 2003).

According to Oakland (1993), to be successful in promoting business efficiency and effectiveness, Quality Management must start at the top with the chief executive. Cooper and Ellram (1993), identified leadership as being critical in effecting organizational change most especially in the areas of building effecting relationship with suppliers and others involved in the process of value delivery. The commitment of leadership to the Quality Management strategy as shown in their daily disposition to work will go a long way in motivating employees to deliver quality services that exceeds the expectation of customers. Andrlé (1994), noted that ‘the implementation of Quality Management requires a clear long term leadership commitment’. To him, long term relationship with satisfied customers is an asset to the organization, thus, management must be committed to it. Andrlé also stressed the importance of management in

providing a 'customer focused support system' such as measurements, rewards and recognition for satisfying customers with the aim of building a positive relationship with customers.

2.3.2 Cultural Change

According to Oakland, (1989), Quality Management is a way of managing the whole business process to ensure complete customer satisfaction at every stage, both internally and externally. Cultural change to Dale et al, (1994) implies an approach to changing the cooperate culture of an organization to be customer centric. The need for cultural change is stressed by the role it plays in the life of an organization. According to Dale et al, (1994), 'culture influences what the executive groups attend to, how it interprets information and the response it makes to changes in the external environments'- it is exceedingly crucial in the drawing up of the strategic position of the firm as it dictates how members of staff approach their day to day activities. Culture is said to help an organization in planning and implementing their strategy.

Dale, et al (1994), defined quality culture as 'the culture which nurtures high social relationship, and respects for individual, a sense of membership or the organization and a belief that continuous improvement is for common good'. The total quality culture implies the decentralization of responsibility to the lowest cadre. By so doing, it taps into the intellectual capability of every individual in the organization in the process of continuous quality improvement. This makes quality central to every employee and management in the organization. Quality Management emphasizes the need for change from the traditional approach of quality management which is bureaucratic in nature and which gives little or no room for innovation. The process of change is however difficult as most organizations find it very difficult abandoning their traditional approaches (Dale et al, 1994). The nature of change to take place makes it more difficult as it involves change in people's attitude.

2.3.3 Customer Focus

QM is an ideology which is focused on the satisfaction of customer's need. Thus, most organizations try as much as possible to meet or exceed customer's expectation in their daily activity and also their long term plan (Andrle, 1994). Quality Management require organizations to develop a customer focused operational processes and at the same time committing the resources that position customers and meeting their expectation as an asset to the financial well

being of the organization. Filippini and Forza (1998) explained that it is necessary for organization to maintain a close link with their customers in order to know their requirements and to measure how it has been successful in meeting up to customers' requirements. According to Muffatto and Panizzolo (1995), a high level of customer satisfaction is obtained solely by providing services or products whose features will satisfy customer's requirements or needs. The customer's needs and expectation serve to drive development of new service offering. This is due to the fact that customers determine the quality level of service delivered (Jablonski, 1992) Oakland (1993), noted that organizations are made up of a series of internal suppliers and customers. To him, this forms the quality chain of the company and it implies that every employee is a potential customer and supplier in the course of production. The process of production is structured in a way where each process have needs and expectation which must be fulfilled by others in the network of production. The effective fulfillment of these needs leads to the production of quality goods and services.

2.3.4 Total Involvement

In the traditional sense, employee involvement was conceived to mean a 'feeling of psychological ownership among organizational members' (Harvey and Brown, 1996). Unlike what obtains in the Quality Management ideology, the traditional employee involvement is narrow-minded; it is job-centred rather than process-centred. The Quality Management approach involves 'achieving broad employee interest, participation and contribution in the process of quality management' (Dale and Cooper, 1993). The concept assumes a company wide quality culture, which gives autonomy or a level of freedom to employees in taking decisions that affect their job. Thus, employees are encouraged to perform function such as information processing, problem solving and decision making (Dimitriades, 2000). This is supported by Omachonu and Ross (1994), who noted that intrinsic motivation is at the heart of Quality Management, where empowerment and involvement in decision making is viewed as essential for sustained result. The main aim for the total involvement of employee is to boost internal and external customer's satisfaction by developing a flexible environment which allows for innovation.

2.3.5 Continuous Improvement

Continuous improvement means 'a commitment to constant examination of the technical and administrative process in search of better methods' (Fuentes-Fuentes et al, 2004). Turney and

Anderson (1989) defined continuous improvement as the relentless pursuit of improvement in the delivery of value to customers. This was supported by Dean and Bowen (1994), who argued that customer satisfaction can be attained only through the relentless improvement of processes that create product or service. Quality management involves the design into the process of production, a system of continuous improvement. This contains regular cycles of planning, execution and evaluation (Muffatto and Panizzolo, 1995). According to Oakland (1993), ‘the focus on continuous improvement will lead to the formation of formidable team whose membership is determined by their work on the detailed knowledge of the process, and their ability to take improvement action’.

Quality Management is concerned with the continuous improvement in all the process of production, from the levels of planning and decision making to the execution of work by the front line staff. The principle behind the idea of continuous improvement is basically the idea that mistakes can be avoided and defects can be prevented. According to Stahl (1995), “continuous improvement refers to the constant refinement and improvement of products, services and organizational system to yield improved value to customers”. He further explained that the continuous look for ways in improving quality of product or service in the absence of customers’ complain may prevent a future problem. The continuous improvement process aims to identify and eliminate the cause of a mistake in order to prevent its reoccurrence. Fuentes-Fuentes et al, (2004) explained that organizations operating in a dynamic environment are liable to carry up continuous improvement in its operation; they explained that the face of competition changes faster in this environment as a result of the changes in customers’ needs, competitors’ activities and service/product innovation.

2.3.6 Training

Training helps in preparing employees towards managing the Quality Management ideology in the process of production. Training equips people with the necessary skills and techniques of quality improvement. It is argued to be a powerful building block of business in the achievement of its aims and objectives (Stahl, 1995). Through training, employees are able to identify improvement opportunities as it is directed at providing necessary skills and knowledge for all employees to be able to contribute to ongoing quality improvement process of production. Stahl

(1995) argued that training and development programme should not be seen as a one time event but a life long process.

2.3.7 Team work

A well structured team will aid the effective production of goods and services through the integration of activities involved in the process of production. Dale et al (1994) noted that team work is a key feature of involvement. To him, team work aids the commitment of the workforce to the organizational goals and objectives. The researchers believe it is essential to have a team made of people with right attitudinal disposition to working in groups so as to realize the gains of quality management. Team work is a way of stimulating positive work attitude, which includes loyalty to the organization and a focus on organizational goals. Martinez et al, (2000) noted that teamwork contributes to the generation of improvements that are proposed by employees. To them, the proposed improvements have a way of changing the attitudes of employees that are resistance to change. Team work has a lot of benefits to an organization.

Recommendations made by teams are more likely to be accepted and implemented where the team is highly formidable, unlike the individual suggestion which represents just an individual's opinion, A greater variety of complex problem will be tackled i.e. problems beyond the capability of an individual or department can be handled more efficiently through the pooling of resources together. Working in teams exposes a problem to a great variety of knowledge thus problems beyond functional departments can be solved more easily. Team work will boost workers morale and ownership through participation in problem solving and decision making. (Oakland, 2005).

2.3.8 Reward and Recognition

Recognition is defined as the public acknowledgment of superior performance of specific activities. Reward is defined as benefits, such as increased salary, bonuses and promotion, which are conferred for generally superior performance with respect to goals (Juran and Gryna, 1993). Public recognition is an important source of human motivation (Deming, 1986). It almost goes without saying that an important feature of any quality improvement program is the showing of due recognition for improved performance by any individual, section, department or division within the firm (Dale and Plunkett, 1990). To effectively support their quality effort, firms must

implement an employee compensation system that strongly links quality and customer satisfaction with pay (Brown et al., 1994). Deming (1986) and Ishikawa (1985) identified one source of human motivation at work as social motivation, the energy that comes from cooperation with others on a shared task and the incentive provided by recognition from others. A large majority of firms implementing Quality Management modify their performance measurement and reward systems so that achievement of specific quality goals can be assessed and rewarded (Hackman and Wageman, 2003). Quality Management implementation relies increasingly on performance measurement and performance contingent rewards to motivate and control employees. According to the review results by Hackman and Wageman (2003), 85% of Quality Management firms have developed programs to reward individuals and teams for quality achievements.

DuBrin (2005) stated that punishment is a behavior modification strategy. Punishment is the presentation of an undesirable consequence or the removal of a desirable consequence because of unacceptable behavior, and is regarded as negative motivator. DuBrin (2005) further proposed that a reward and recognition system should be equitable. Workers who achieve the same level of performance should receive comparable rewards. Similarly, workers who fail to obtain certain levels of performance should receive comparable punishment. In this regard, punishment is a special recognition and “reward” for employees who do not perform well. It is important to note that employees’ recognition and rewards should be based on equity.

Effective recognition and reward activities can stimulate employee commitment to the firm. A firm’s Quality Management initiative must be supported with a recognition and reward system that encourages and motivates employees to achieve the desired performance. Firms that are serious about achieving quality and customer satisfaction must integrate these aspects into their recognition and reward system. Ishikawa (1985) suggested that firm-wide gain-sharing or profit-sharing programs can appropriately be used to recognize and reward collective excellence. Excellent employee suggestions should be financially rewarded in order to encourage employee participation. The forms of recognition can be a praise letter, an oral praise, award ceremony, moral award, publicly presenting successful working experiences (Zhang, 2000). Mann and Kehoe (1994) suggested that working condition improvement be used to recognize employee

quality improvement efforts. Cherrington (1995) stated that the forms of reward can be merit pay, piece-rate incentives, team and group incentives, skill-based pay and pay-for-knowledge, suggestion system, profit sharing, salary increase, and bonus scheme.

2.3.9 Competitive Benchmarking

Benchmarking, one of the most important approaches to TQM, is widely used by many companies to help them become better in their field. The concept of Benchmarking is defined by the Society of Management Accountants of Canada as: ‘A systematic and continuous measurement process; a process of continuously comparing and measuring an organization’s business processes against business leaders anywhere in the world to gain information which will help the organization take action to improve its performance’ (Parker & Harrison, 1995).

The purpose of benchmarking is to provide a target for improving the performance of the organization in order to achieve superiority in the market place. Apart from benchmarking with the leaders in the industry, the company also needs to assess its competitors’ performance. The aim is to discover best practices and adopt them in the company to achieve competitive advantages (Bank 1992). In the process, people must have the determination to learn from others because benchmarking involves finding gaps, problem solving, and continuous change. The link between benchmarking and TQM is improving performance based on industry best practice and should directly contribute to meeting customer requirements.

2.4 Benefits of Quality Management Implementation

The effective implementation of Quality Management will increase customer satisfaction with the service offerings (Omachonu and Ross, 1994). Quality enhances customer loyalty through satisfaction; this in turn can generate repeat business and lead to the attraction of new customers through positive word of mouth. The word of mouth communication will help in cost reduction. This Omachonu and Ross (1994), noted will provide competitive edge to the company. The improvement in quality will result in increased market share and profitability. Total quality management is a management philosophy which emphasizes the devolution of authority to the front line staff. It ensures the participation of every one in the decision making process through activities such as quality cycles and team work. The question is, does this devolution of authority leads to employees’ satisfaction or not? Motivations theories indicate that two major forms of

motivation exist – the intrinsic and the extrinsic motivation. While some will argue that the best form of motivation is monetary incentive, others argue for self fulfillment and recognition. The motive behind the intrinsic reward is to provide the employee with some autonomy which empowers him to take decisions that affects his job, thus making him responsible and accountable. This is said to increase the employee's level of job satisfaction (Dimitrades, 2000).

The implementation of Quality Management ensures that every worker in the organization does his work with quality the first time, thus improving the efficiency of operation and avoiding some cost associated with waste. This in turn will offer more value to customers in terms of price and s them satisfied. Implementation of Quality Management further ensures that organizations change how they perform activities so as to eliminate inefficiency, improve customer satisfaction and achieve the best practice (Porter, 1996). Porter noted that constant improvement in the effectiveness of operation is essential but not a sufficient factor for organization to be profitable. According to Sila (2007), Quality Management helps in improving the quality of products and also reduces the scrap, rework and the need for buffer stock by establishing a stable production process. He argued that Quality Management will reduce the cost of production and time of production. Continuous improvement which is a feature of Quality Management is said to reduce the product cycle time thus improving productivity (Huang and Lin, 2002).

Many other Quality Management practices such as training, information system management, relationship with suppliers etc have a positive impact on operational performance. The efficient management handling of these practices will improve efficiency and no doubt affect the profitability of the firm. According to Sila (2007), Quality Management can minimize the total cost of production through 'sole sourcing'. The cost in this case is reduced by limiting the number of suppliers used by the firm and providing them with necessary training and technology. The efficient functioning of an operation will then depend on how well the suppliers meet up with the expectations of the organization. This is why the Quality Management principle emphasizes the totality of quality in all facets which includes the suppliers. Quality Management endorses the total quality approach in creating customer satisfaction. The total quality approach creates an integrated method of analyzing operation by focusing the processes of production on customer satisfaction. Thus, it requires that quality be built into all the processes so as to be

efficient in the overall operation (Andrle, 1994). Kaynak (2003) suggested that the effectiveness of QM organizations should be measured by the degree of integration with their supplier bases because supplier quality management is a critical component of Quality Management. Operational effectiveness is then a function of how well the various units of an organization carry out their functions with quality.

2.5 Limitations to the Implementation of Quality Management

Oakland, (1995) identified factors that hinder the implementation of Quality Management. These include the thought that its implementation can be time consuming, bureaucratic, formalistic, rigid and impersonal. Ugboro and Obeng, (2000) in their research they found out that the half hearted implementation of Quality Management is a major reason for its failure in most organizations. According to them, organizations are only willing to implement just those aspects of Quality Management which is supported by existing organizational culture. Their findings revealed that employees did not feel as part of the decision making process and their ability to make contributions to quality improvement were restricted due to the limited authority granted them to carry out their activities.

Smith, (2004) explained that quality management programs have failed because they were 'programs of the month'. According to him, implementing quality through out an organization is not the result of a formalized programme but requires a cultural change in the way activities is conducted. Andrle, (1994) on his own assessment, claims that the adoption of incompatible quality approach by organizations results in the failure of Quality Management implementation, he further stressed that the delegation of quality leadership by managers might lead to the development of Quality Management bureaucracies that are ineffective like other functional departments.

According to Wilkinson et al (1998) the lack of commitment from any particular group within the organization can be a serious barrier in management of quality. Most especially the non commitment by management to quality management is a major hindrance to the successful implementation of Quality Management. Asher (1996) observes that there is a need for management to drive the ideology of Quality Management process in order to encourage

employees to follow and also to prove to them about management's commitment to quality. Porter (1996) noted that Quality Management is essential for an organization's productivity and effectiveness but will not necessarily give an organization competitive advantage over her competitors. Quality Management does not address strategic business issues like differentiation and positioning strategies. McCabe and Wilkinson (1998) noted that the failure of Quality Management can be attributed to the inappropriate implementation method adopted by the firms employed and not because of the principles of Quality Management itself. They believed Quality Management could be successful if it is adequately planned for and implemented according to plan. Another reason for the failure of Quality Management is the emphasis given to individual rewards for Quality Management effort. This negates the recommendation made by Deming (1986), who argued that rewards needs to be tied to team work or department rather than individual. The failure of organizations to implement the rewards to group might lead to internal competition amongst employee and this will have a negative impact on team performance which Quality Management promotes. High cost of providing quality service is a major hindrance to the implementation of QM, in organizations.

2.6 Performance in Public Primary Schools

After the (political) declaration of the Free Primary Education (FPE) policy, school heads were expected to implement it without prior planning and arrangements. There has been a national outcry that the performance of most of the public primary schools in Kenya is below average compared to other countries (Riddell, 2003). The KCPE results for majority of the public primary schools in Kenya for the last three years (2006-2008) period have not been very satisfactory nationally. More than half of the total numbers of candidates in most of the schools have been scoring below the required pass mark of 250 marks (KNEC report 2008). Subsequently, there has been a low intake to national and provincial schools for KCPE candidates from public primary schools.

Primary school education in Kenya is free and the Kenyan government gives a certain fixed amount of money for every school-going child (MOEST, 2003). This policy of Free Primary Education (FPE) has seen a tremendous increase in enrolment of school going children from 5 million in January 2003 to 8 million by May 2009 (World Bank Report, 2009). This rapid

increase in numbers of pupils has created constraints and challenges to successful implementation of FPE in Kenya, thereby compromising the performance and quality of standards (MOEST 2003). The increase in enrolment has occurred in the background of unexpanding infrastructure and support facilities (GoK, 2005). This has seen several facilities being overstretched, including the human resource which is actually thin on the ground. For example, the teacher-pupil ratio has increased from 1:45 to 1:60 in most public primary schools and this has compromised the performance of pupils in national examinations (KCPE). Most of the previous studies on Free Primary Education have tended to assess it in respect to challenges experienced by implementation. More specifically, they have concentrated on establishing if the capacity of the existing school physical structures are able to cope with the increased pupil enrolment, establishing the extent to which school administrative structures and human resource outlay (teaching and non-teaching) were prepared to cope with the implementation of the new primary education policy and establishing how the increased enrolment has affected the objective evaluation of pupils, pupils' performance standards and teachers' morale (Kosgei, 2009).

2.7 Quality in Education

Defining quality in education is a massive challenge since it deals with the most sensitive creation on earth –the human being. Industrial products are finished goods- take them or leave them. Nothing can be done once they are finished. Service is here and now. You can look for better quality only next time. Education has no such finished product, nor even the graduates. They are on the way “to be”. Education only charges the human propensities to evolve and unfold it till the last breath, a process that covers the human journey from ‘womb to tomb’. Human beings continue to learn, and evolve, ‘to be’ (Mukhopadhyay 2006).

Education is goal-oriented. Accordingly, quality of education has been seen with reference to excellence in education, value addition in education (Feigenbaum 1983), fitness of educational outcome and experience for use (Juran and Gryna 1988), conformance of education output to planned goals, specifications and requirements (Crosby 1979), defect avoidance in education process (Crosby 1979) and meeting or exceeding customer's expectation of education (Parasuraman et al. 1985). Holt (2000) argues, ‘I shall suppose that education is concerned with the development that of minds of the pupils; school produce educated persons who, by virtue of

their schooling, to be construed? Commitment to quality makes student proud to learn and work hard for improvement. Quality improvement is a never ending process. Education quality leads to a prospective future. Hence, insight on quality indices and virtual implementation need to be given top priority and due attention should be paid to the category in the wide range of educational strata e.g. school, university, educational management, and the staff.

2.8 Measuring and Managing Quality in Education

Quality is a significant element of production or services in keeping the customers satisfied. There are different definitions and competing views of the term quality by different people and the common element of the business definitions is that the quality of a product or service refers to the perception of the degree to which the product or service meets the customer's expectations. Crosby, (1979) defined quality as the conformance to requirements or specifications and also suggested that to manage quality adequately; it must be able to be measured. ISO 9000: (2000) (cited in Vorley and Tickle, 2001) defined quality as the degree to which a set of inherent characteristics fulfils requirements.

Managing quality in education has proved to be a challenging task. The literature suggests that there are two main reasons for this. First, 'quality' has different meanings for different stakeholders. Within education there are both internal and external stakeholders who are likely to have disparate or even contradictory definitions of quality. Cheng and Tam (1997) suggest therefore that 'education quality is a rather vague and controversial concept'. Similarly, Pounder (1999) argues that quality is a 'notoriously ambiguous term' given that it has different meanings to different stakeholders. As a result of the difficulty in defining quality, its measurement and management has unsurprisingly proved to be contentious.

Traditionally, external stakeholders have been concerned with quality assurance procedures. Quality assurance refers to the 'planned and systematic actions [deemed] necessary to provide adequate confidence that a product or service will satisfy given requirements for quality' (Borahan and Ziarati, (2002). The focus on quality for external stakeholders is driven by these agendas and focuses predominantly on the measurement of procedures and the extent to which they result in appropriate levels of quality (Jackson, 1996). In addition, Avdjieva and Wilson

(2002) suggest that primary schools are now also required to become learning organizations, where internal stakeholders also interpret and assess the quality of education provision. The emphasis for internal stakeholders is not only on quality assurance, but also on quality enhancement which aims for an overall increase in the actual quality of teaching and learning, often through more innovative practices (McKay and Kember, 1999). As students are viewed as an integral part of the learning process (Wiklund *et al.*, 2003), this type of evaluation tends to be more formative in nature and therefore more likely to lead to continual quality improvement efforts. Furthermore, the involvement of internal stakeholders often results in a culture of quality management being embedded within programmes.

2.8.1 Quality Management in the Education Sector

For a country to develop, its education sector plays a pivotal role. Quality Management is a tool for senior management and therefore for schools to embrace it, the parent ministry must be practicing it effectively. However, according to the Institute of Research and Policy on Education (2008), the education sector operates in a changing environment and it faces challenges such as poverty, unemployment, corruption and violence among others. This requires a paradigm shift in leadership. Other challenges facing the education sector include; delays in disbursing funds to support free education which frustrate many teachers besides putting pressure on parents' financial burden, lack of teacher motivation, ineffective management of education system, autocracy in school governance, inadequate funding and mismanagement of school funds. This raises questions on the effectiveness of Quality Management in schools when the parent ministry is facing such challenges.

Public schools over the years have experienced changes which have complicated their management. These changes include; free primary tuition, breakthrough in technology and climatic changes. Although schools that fall under the public sector have less opportunity to develop Quality Management practices as this is defined by a political process outside the control of school management, (Macmillan & Tampoe, (2000). Adopting and adapting Quality Management practices could see schools into great heights. For QM to be effected, it must have the support of the top management (Oakland 2003), that is, the permanent secretary in the ministry of education. This is also related to the need to ensure adoption of the new philosophy at

the 'power centre' in government. Reforms need to be coordinated from the Office of the President and cabinet as this office is the hub of both the political and administrative functions of the state. Delegation to other ministries needs to be avoided. The significance of culture change, starting with top management and cutting across all levels of the organizational hierarchy, is also crucial for the successful implementation of reform initiatives. Public schools find themselves in a competitive world ranging from sports and games activities to quality of learning and teaching. In addition schools have a mission to accomplish just like the other commercial organizations. Therefore, adopting and adapting Quality Management practices will give a school the competitiveness desired in achieving its overall goal.

For a few years, the emergence of alliances among schools has constituted one of the more striking phenomena in the school system that would testify to the development of a Quality Management practices in these schools. As public institutions, schools are not autonomous and therefore their operation depends on many other factors such as ministry funding. Although Quality Management is widely accepted and recognized some people feel Quality Management is unfit for the public sector (Berry, 2001) because plans are often not implemented. Public schools are run by school management committees who may not be competent in Quality Management and often Quality Management practices are prepared as a requirement and not a prerequisite to effective management.

2.9 Conceptual Framework

Quality Management is fundamentally concerned with continuous improvements and organizational adaptations. Therefore, the greatest importance in Quality Management research is the relationship between a Quality Management practices and performance. In fact, the central question in most Quality Management research is "Why do some firms perform better than others?" As a result, a substantial amount of Quality Management research examines the effects of Quality Management practices on firm performance. In other words, it is assumed that Quality Management practices lead to (produce) particular performance outcomes. The conceptual framework for this study considers Quality Management practices as critical components of organizational growth and performance. According to this framework, the Quality Management practices are the independent variables which are; Top management commitment, Teamwork, Continuous improvement, Continuous benchmarking, Training, reward and recognition and

customer focus. On the other hand, organizational performance is considered to be the dependent variables assessed in terms of indicators such as academic performance, enrolment of pupils and co-curricula activities. In this conceptual framework, the moderating variables are the Organizational culture, and School management committee. The conceptual framework for this study is illustrated in the Figure 1 below:-

2.9.1 Conceptual framework

This is a functional form of how the independent variables affect the dependent variable.

(Moderating variables)

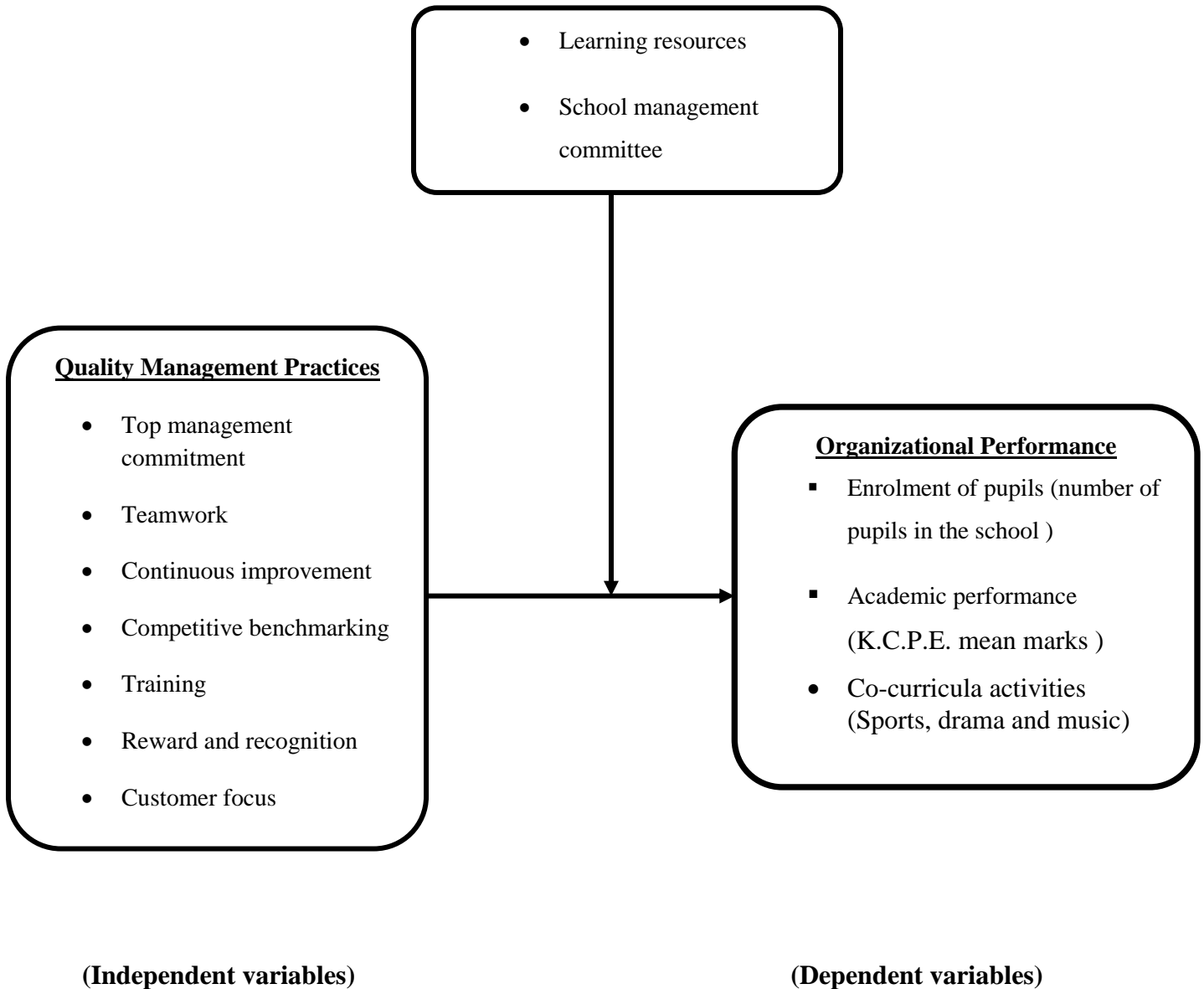


Figure 1: Relationship between Quality Management Practices and Organizational Performance.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Research Design

This study was conducted through a census to investigate Quality Management practices and their effect on performance in public primary schools in Nakuru Municipality. Census research usually uses questionnaires and interviews in order to determine the opinions, attitudes, preferences, and perceptions of the population of interest to the researcher (Kathuri, 1993). The study investigated the effect of QM practices on performance in public primary schools within Nakuru Municipality.

3.2 Study population

The study involved public primary schools head teachers in Nakuru Municipality, Kenya. In Nakuru Municipality there are 60 public primary schools and the researcher targeted all the public primary schools and the 60 head teachers, see appendix III (District Education Offices, Nakuru).

3.3 Data Collection Instruments

To collect primary data, the researcher used questionnaires, which consists of a set of questions to be presented to respondents for their answers. The researcher used these as they are the most common instruments used in primary data collection (Mugenda and Mugenda, 2003). The questionnaires were pre-tested randomly on 10 head teachers in public primary schools within Dundori location in Nakuru North District. The purpose of this is to establish the accuracy and consistency of the questions asked and to remove all ambiguities and replace such questions with focused ones. (See appendix 1)

3.3.1 Validity and Reliability

Validity refers to the quality that a procedure or instrument or tool used in research is accurate, correct, true and meaningful and right. Construct and content validity of the questionnaire will be determined by the help of experts (such as the research supervisors). This is expected to give guidance to ensure that the instruments are constructed in a manner that will not mislead the respondents in the course of providing information. This ensured that the items in the

instruments are a representative of the research independent and dependent variables and more so ensure that the research objectives are addressed by the information sought in the instrument. Reliability of an instrument is the degree of consistency with which it measures a variable ((Mugenda and Mugenda 2003). It is concerned with estimates of the degree to which a research instrument yields consistent results or data after repeated trials. To ensure reliability, the researcher used the cronbach alpha reliability test where the questionnaires were administered to 10 head teachers in Nakuru North District that bears the similar characteristics as those in Nakuru Municipality. The calculated cronbach alpha from the pilot study was found to be 0.732 (within the acceptable reliability limits of at least 0.7).

3.4 Data Collection Procedure

An introduction letter from Egerton University Nakuru Town Campus was obtained to enable the researcher to administer the questionnaires. Permission was sought from the Municipal Education Office to undertake the research. Questionnaires were self-administered to the respondents and the researcher explained to them the purpose of the research. The researcher assured the respondents that information obtained would be handled with confidentiality. After dropping the questionnaires the researcher agreed with the respondents on when to collect the questionnaires within a period of two weeks.

3.5 Data Analysis and Presentation of Results

To process the primary data descriptive statistics was applied in establishing frequencies, means and percentages. Primary data was analyzed with the help of the Statistical Package for Social Sciences (SPSS). In order to determine the extent of application of QM practices in public primary schools were scored on a scale of 1, indicating least level, to 5 indicating highest level of implementation. In order to determine the overall extent of application of the practices, an index was derived from the computation of the responses. The computed responses were then collapsed into three categories namely: “High”, “Moderate” and “Low”. The same procedure was applied to determine the level of performance among schools.

Inferential statistics was employed to determine the effect of QM practices on organizational performance in public primary schools. Specifically, multiple regression analysis was used to analyze the effect of the independent variable (quality management practices) and performance

(dependent variable). The regression coefficient of determination (R^2) was used to determine the significant factors at 95% confidence level ($p < 0.05$). In order to determine the effect of Quality Management practices on performance in Public Primary schools in Nakuru Municipality the following multiple regression model was used.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$$

Where:

Y = Dependent variable (organization performance)

β_0 = constant

β_1 = parameter associated with X_1 (top management commitment)

β_2 = parameter associated with X_2 (teamwork,)

β_3 = parameter associated with X_3 (continuous improvement)

β_4 = parameter associated with X_4 (competitive benchmarking)

β_5 = parameter associated with X_5 (training)

β_6 = parameter associated with X_6 (reward and recognition)

β_7 = parameter associated with X_7 (customer focus)

ϵ = error term (contains factors rather than $X_1, X_2 \dots X_7$ that affect Y)

CHAPTER FOUR:

RESULTS AND DISCUSSION

4.1 Demographic Characteristics of the Study Respondents

This section presents a brief description of the demographic characteristics of the respondents involved in this study. Such a description is considered to be very important in providing a better understanding of the respondents included in the study and therefore provide a good foundation for a detailed discussion of the results based on the stipulated objectives of the study. The demographic characteristics included gender, level of education, number of years in the work station and the number of years as a head teacher. The study involved respondents from 60 public primary schools in Nakuru Municipality. A total of 60 questionnaires issued out to respondents were successfully completed and returned for analysis hence giving the study 100% response rate.

4.1.1 Gender of Respondents.

The study findings (figure 2) indicate that out of 60 respondents (Head teachers) from respective public primary schools, 63.3% of the respondents were male whereas 36.7% were female. These findings indicate that a significant proportion of the respondents were male head teachers.

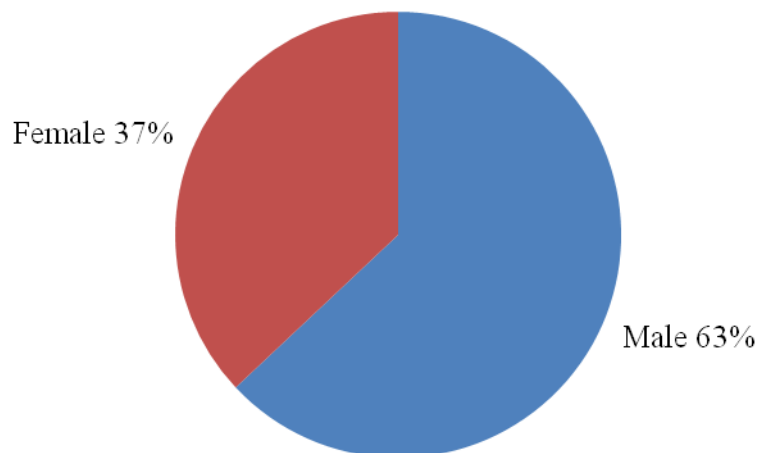


Figure 2: Respondents' Gender

Source: Research Data (2013)

4.1.2 Highest Level of education of respondents

Study findings on the highest education level of the respondents (Figure 3), show that 48.3% were Degree holders, 30% were Diploma holders, 13.3% were P1 holders and 8.3% had Masters.

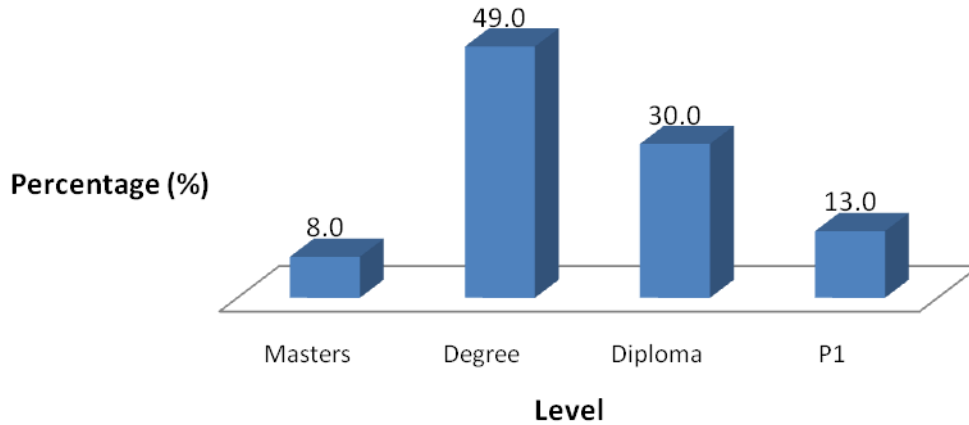


Figure 3: Respondents' level of education

Source: Research Data (2011)

4.1.3 Number of Years in the Current School

Respondents' number of years in the school is an important factor with significant influence on the understanding of the school's culture and goals. Survey data (Table 1) indicates that the respondents number of years in the school ranging from less than five years to over 10 years. The data shows that 28% of the respondents had 0-5 years in the school, 64% of the respondents had 6-10 years whereas 8% percent and had over 10 years in the current school. These finding suggest that a significant proportion of the respondents (72 percent) had long stay at their respective schools to understand the running of the schools.

Table1: Respondents' Number of Years in School

Duration	Frequency	Percentage (%)
0-5 years	17	28.0
6-10 years	38	64.0
> 10 years	5	8.0
Total	60	100.0

4.1.4 Number of Years as a head teacher

Number of years as an administrator shows the work experience of the respondents which is important in knowing the management practices used and their effects on the performance of the school. The research data (Figure 4) shows that 21.7 % of the respondents had served between 0-5 years, 41.7 percent between 6-10 years and 36.7 percent for over 10 years.

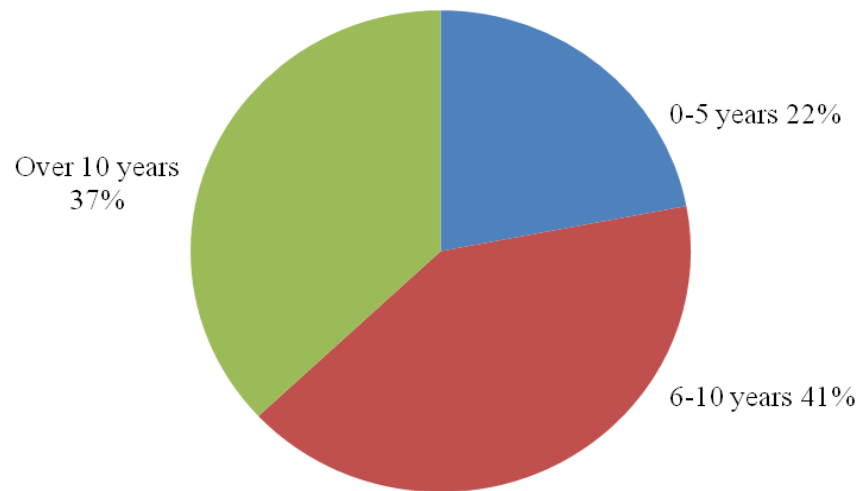


Figure 4: Respondents' Number of Years as a head teacher

Source: Research Data (2013)

4.2 Implementation of Quality Management Practices

The first objective of the study sought to determine the extent to which quality management practices have been applied in public primary schools in Nakuru Municipality. In this regard, the respondents were asked to indicate the extent to which the Quality management practices in terms of: Top management commitment, teamwork, continuous improvement, competitive benchmarking, training, reward and recognition and customer focus had been applied. The results of data analysis and discussions are as follows:

4.2.1 Top management Commitment in Public Primary Schools

The objective was aimed at determining the extent to which top management commitment had been achieved in the public primary schools in the study area. The five point likert scale with

levels strongly agree, moderately agree, undecided, moderately disagree and strongly disagree was used. The results are tabulated on Table 2.

Table 2: Extent of Top Management Commitment

Statement	Responses(percentages)					Total (%)
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
As a head teacher I give directions to teachers to improve quality	58.3	41.7	0.0	0.0	0.0	100.0
Our school strives to eliminate barriers for teachers to work efficiently & cooperatively	43.3	56.7	0.0	0.0	0.0	100.0
Teachers decisions are respected and adopted	45.0	48.0	5.0	2.0	0.0	100.0
Head teacher teaches his /her subject area and owns the results	56.7	40.0	0.0	1.7	1.6	100.0
Head teacher interacts with pupils to know their problems	48.3	48.3	1.7	0.0	1.7	100.0
As a head teacher you provide the necessary learning resources e.g. textbooks, charts etc	51.7	43.3	1.7	0.0	3.3	100.0
Teachers are encouraged to interact for the purposes of improving quality	41.7	53.3	0	3.3	1.7	100.0

The study revealed that all the respondents (100%) generally agreed that head teachers gave directions to teachers to improve quality. Also, all the study respondents (100%) generally agreed that schools strived to eliminate barriers for teachers to work efficiently and cooperatively.

Further, the study findings indicated that 93% generally agreed that the teachers' decisions were respected and adopted, 2% disagreed while 5% were undecided. Also, the study findings indicated that 96.7% of the respondents generally agreed that head teachers taught their subjects area and owned the results while 3.3% disagreed. Study findings indicate 96.6% of the

respondents generally agreed that head teachers interacted with pupils to know their problems, 1.7% disagreed whereas 1.7% were undecided.

Further, findings revealed that 95% of the respondents generally agreed that head teachers provided the necessary learning resources e.g. textbooks, charts etc, 3.3% disagreed while 1.7% were undecided. Finally, 95% of the respondents generally agreed that teachers were encouraged to interact for the purposes of improving quality while 5.0% disagreed.

On the overall extent to which top management commitment were achieved, survey data (Figure 5) shows that 51.7% of respondents reported “high”, 45% reported “moderate” whereas only 3.3% reported “low”. It is evident from the findings that top management commitment was highly achieved among the primary schools in Nakuru Municipality.

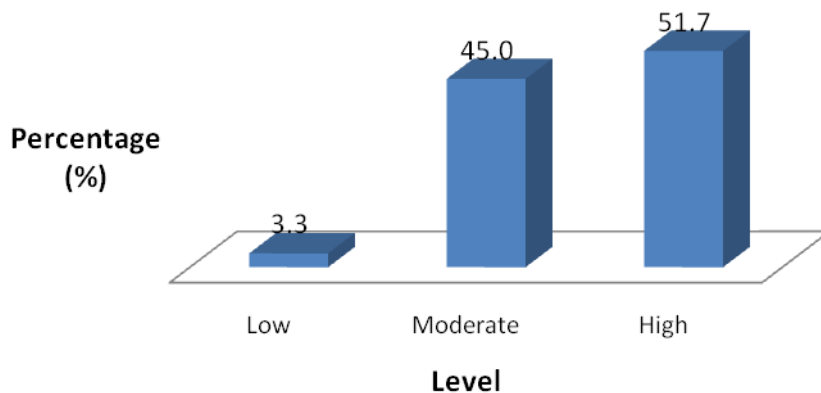


Figure 5: Overall Top Management Commitment

4.2.2 Extent of Teamwork among Public Primary Schools

The study sought to determine the extent to which teamwork had been achieved in the public primary schools in the study area. The five point likert scale with levels strongly agree, moderately agree, undecided, moderately disagree and strongly disagree was used. The results are tabulated on Table 3.

Table 3: Extent of Teamwork among Public Primary Schools

	Responses(percentages)					Total
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
In this school all the teachers participate in decision making process	30.8	55.8	11.5	0.0	0.0	100 %
Effective teams ensure commitment of teachers	25.0	67.3	7.7	0.0	0.0	100 %
There is an atmosphere of respect, cooperation & trust in our school that motivates our teachers	27.9	71.2	1.9	0.0	0.0	100 %
In this school, there is a good & open relationship among teachers	25.0	63.5	11.5	0.0	0.0	100 %
Teachers are involved in collaborative	15.4	59.6	21.2	3.8	0.0	100 %
All teachers participate in remedial classes during school holidays	1.9	19.2	12.7	26.9	42.3	100 %
The entire workforce understands & is committed to the vision, values& quality of goals of the organization	17.3	67.3	9.6	3.8	1.9	100 %

The study findings revealed that 86.6% of the respondents generally agreed that in their schools all the teachers participated in decision making process while 13.4% were undecided. Furthermore, 92.2% of the respondents generally agreed that effective teams ensured commitment of teachers while 7.7% were undecided.

In addition, 99.1% of the respondents generally agreed that there was an atmosphere of respect, cooperation & trust in their school that motivated their teachers while 1.9% were undecided. Also, study findings show that 88.5% of the respondents generally agreed that in their schools, there was a good & open relationship among teachers while 11.5% of the respondents were undecided. Furthermore, 75% of the respondents generally agreed that the teachers were involved in collaborative activities, 3.8 disagreed while 21.2% of the respondents were undecided.

In addition, study findings indicate that only 21.1% of the respondents generally agreed that all teachers participated in remedial classes during school holidays, 69.2 disagreed while 12.7% of the respondents were undecided. Finally, study data indicate that 84.6% of the respondents generally agreed that the entire workforce understood and was committed to the vision, values and quality of goals of the organization, 5.7% disagreed while 9.7% were undecided.

With regard to extent to which teamwork was achieved in the public primary schools survey data (Figure 6) shows that 98% of the respondents reported “low” and only 2% reported “high”. It is evident from the findings that teamwork was achieved to less extent among the primary schools in the area.

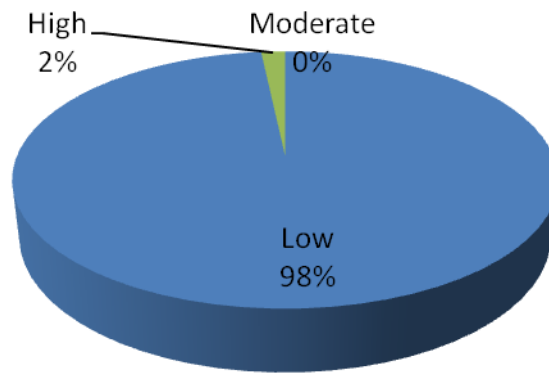


Figure 6: Overall Teamwork Index

4.2.3 Continuous Improvement in Public Primary Schools

The study aimed at determining the extent to which continuous improvement was achieved in the public primary schools in the study area. The five point likert scale with levels strongly agree, moderately agree, undecided, moderately disagree and strongly disagree was used. The results are tabulated on Table 4.

Table 4: Extent of Continuous Improvement in Public Primary Schools

Statement	Responses(percentages)					Total (%)
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
Teachers calculate value added progress for their pupils	17.3	73.1	9.6	0.0	0.0	100.0
The school keeps value added progress for each pupil from class one to eight	30.8	50.0	13.5	5.7	0.0	100.0
Head teacher communicates to teachers & pupils the overall mean marks for KCPE	63.5	34.6	1.9	0.0	0.0	100.0
Teachers discuss improvement strategies for their subjects	40.4	53.8	3.8	2.0	0.0	100.0
The school ensures the physical facilities are increased as enrollment goes up	26.9	46.2	19.3	3.8	3.8	100.0
Teachers constantly measure and assess performance	32.7	61.5	3.8	0.0	2.0	100.0

The study findings revealed that 90.4% of the respondents generally agreed that teachers calculated value added progress for their pupils whereas 9.6% were undecided. Also, 80.8% of the respondents generally agreed that the schools kept value added progress for each pupil from class one to eight, 5.7% disagreed while 13.5% were undecided.

In addition, 98.1% of the respondents generally agreed that the head teachers communicated to teachers & pupils the overall mean marks for KCPE while 1.9% were undecided. The study findings further revealed that 94.2% of the respondents agreed that teachers discussed improvement strategies for their subjects, 2.0% disagreed whereas 3.8% were undecided.

It is also evident that 73.1% of the respondents generally agreed that the schools ensured the physical facilities were increased as enrollments went up, 7.6% disagreed while 19.3% were undecided. Finally, 94.2% of the respondents generally agreed that teachers constantly measured and assessed performance, 2.0% disagreed whereas 3.8% were undecided.

On the overall extent to which continuous improvement was achieved in the public primary schools in the study area, survey findings (Figure7) indicate that 53.3% of the respondents reported “high”, 45% reported moderate extent while 1.7% reported “low”. It is evident from the findings that continuous improvement was achieved to a greater extent among the primary schools in the area.

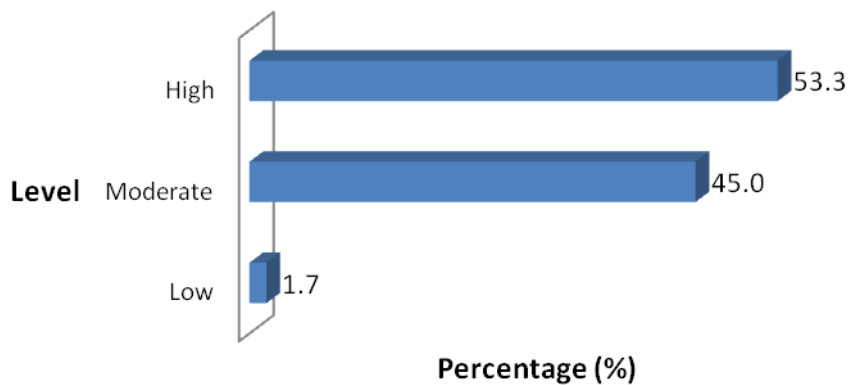


Figure 7: Overall Continuous Improvement Index

4.2.4 Competitive Benchmarking in Public Primary Schools

The study sought to determine the extent to which competitive benchmarking was achieved in the public primary schools. The five point likert scale with levels strongly agree, moderately agree, undecided, moderately disagree and strongly disagree was used. The results are tabulated on Table 5.

Table 5: Extent of Competitive Benchmarking in Public Primary Schools

Statements	Responses(percentages)					Total
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
The school compares its performance with other school	42.3	55.8	1.9	0.0	0.0	100 %
The school borrows improvement strategies from well performing schools	32.7	50.0	13.5	3.8	0.0	100 %
Teachers and pupils are given opportunities to	11.5	34.6	23.2	26.9	3.8	100 %

visit well performing schools & share experiences						
The school head compares his /her management style with other heads	25.0	59.6	13.5	1.9	0.0	100 %
The school compares its physical infrastructure e.g. classroom, workshop etc with other schools/organizations	17.3	61.5	17.3	1.9	2.0	100 %
The school borrows improvement strategies from organizations that do not provide education services	15.4	46.2	23.0	9.6	5.8	100 %

Further 98.1% of the respondents generally agreed that schools compared their performance with other schools while 1.9% were undecided. According to study findings, 82.7% of the respondents generally agreed that schools borrowed improvement strategies from well performing schools, 3.8% disagreed while 13.5% were undecided.

In addition, 46.1% of the respondents generally agreed that teachers and pupils were given opportunities to visit well performing schools and share experiences, 30.7% disagreed while 23.2% were undecided. Also findings show that 84.6% of the respondents generally agreed that school heads compared their management style with other heads, 1.9% disagreed while 13.5% were undecided.

Furthermore, 78.8% of the respondents generally agreed that schools compared their physical infrastructure e.g. classroom, workshop with other schools/organizations, 3.9% disagreed whereas 17.3% were undecided. Finally 61.6% of the respondents generally agreed that schools borrowed improvement strategies from organizations that do not provide education services, 15.4% disagreed while 23% were undecided.

With regard to the extent to which the competitive benchmarking was achieved in public primary schools, survey data (Figure 8) indicate that 60% of the respondents reported “moderate”, 23.3% reported “moderate” while 16.7% reported “low”. These findings generally indicate that

competitive benchmarking has been achieved to a moderate extent among public primary schools.

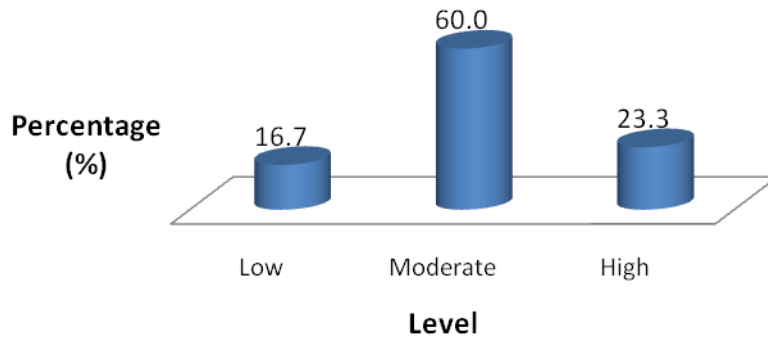


Figure 8: Overall Competitive Benchmarking Index

4.2.5 Training in Public Primary Schools

The study sought to determine the extent to which training had been achieved in the public primary. The five point likert scale with levels strongly agree, moderately agree, undecided, moderately disagree and strongly disagree was used. The results are tabulated on Table 6.

Table 6: Extent of Training among Public Primary Schools

Statement	Responses(percentages)					Total (%)
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
School as an organization always strives to develop the skills & abilities of personnel to improve facilities in order to satisfy customers	25.0	63.5	11.5	0.0	0.0	100 %
Regular training for teachers is put in place	21.2	67.3	7.7	1.9	1.9	100 %
Teachers are sponsored to attend seminars	28.8	63.5	3.9	3.8	0.0	100 %
In-service for teachers is done internally	13.5	61.5	17.3	5.8	1.9	100 %
External specialists in a subject area are invited to train teachers	11.5	65.4	13.5	7.7	1.9	100 %
Teachers are allowed to study on their own sponsorship during school holidays	51.9	36.5	7.7	0.0	3.9	100 %

The study findings revealed that 88.5% of the respondents generally agreed that schools as organizations always strived to develop the skills and abilities of personnel to improve facilities in order to satisfy customers while 11.5% were undecided. Furthermore, 88.5% of the respondents generally agreed that regular training for teachers had been put in place, 3.8% of the respondents disagreed while 7.7% were undecided.

In addition, 92.3% of the respondents generally agreed that teachers were sponsored to attend seminars, 3.8% disagreed while 3.9% were undecided. Also, study findings show that 75% of the respondents generally agreed that in-service for teachers was done internally, 7.7% disagreed while 17.3% of the respondents were undecided.

The study findings further revealed that 76.9% of the respondents generally agreed that external specialists in a subject area were invited to train teachers, 9.6% disagreed while 13.5% were undecided. Finally, study findings show that 88.4% of the respondents generally agreed that teachers were allowed to study on their own sponsorship during school holidays, 3.9% disagreed while 7.7% were undecided.

With regard to extent to which training was achieved in public primary schools in the study area, survey data (Figure 9) shows that 72% of the respondents reported “moderate”, 20% reported “high” and only 8% reported “low”. The study findings generally indicate that training was achieved moderately among public primary schools.

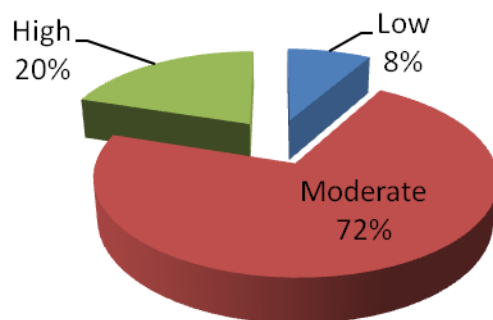


Figure 9: Overall Training Index

4.2.6 Reward and Recognition among Public Primary Schools

The study sought to determine the extent to which reward and recognition was achieved in public primary schools. The five point likert scale with levels strongly agree, moderately agree, undecided, moderately disagree and strongly disagree was used. The results are tabulated on Table 7.

Table 7: Extent of Reward and Recognition among Public Primary Schools

Statement	Responses(percentages)					Total (%)
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
There is a tendency from the side of administration to consider teachers as valuable & long term human resources	50.0	50.0	0.0	0.0	0.0	100 %
In this school, teachers are empowered to participate in quality improvement process	36.5	61.5	2.0	0.0	0.0	100 %
Physical working conditions in our school motivate employees	26.9	53.8	17.3	0.0	2.0	100 %
All the teachers in our school are treated with respect & dignity	13.5	61.5	17.3	5.8	1.9	100 %
External specialists in a subject area are invited to train teachers	11.5	65.4	13.5	7.7	1.9	100 %
Teachers are allowed to study on their own sponsorship during school holidays	51.9	36.5	7.7	0.0	3.9	100 %

The study findings revealed that all the study respondents (100%) generally agreed that there was a tendency from the side of administration to consider teachers as valuable and long term human resources. Furthermore, 98% of the respondents that generally agreed that in their schools, teachers were empowered to participate in quality improvement process whereas 2% of the respondents were undecided.

In addition, 80.7% of the respondents generally agreed that the physical working conditions in schools motivated employees, 1.9% disagreed while 17.3% were undecided. Also, study findings show that 75% of the respondents generally agreed that all the teachers in schools were treated with respect and dignity. 7.7% disagreed while 17.3% of the respondents were undecided.

Furthermore, study findings revealed that 76.9% of the respondents generally agreed that external specialists in a subject area were invited to train teachers. 9.6% disagreed while 13.5% of the respondents were undecided. Finally, study data indicate that 88.4% of the respondents generally agreed that teachers were allowed to study on their own sponsorship during school holidays, 3.9% disagreed while 9.6% were undecided.

With regard to extent to which reward and recognition was achieved in public primary schools, survey data (Figure 10) shows that 55% of the respondents reported “moderate”, 41.7% reported “high” and only 3.3% reported “low”. The study findings indicate that reward and recognition was achieved to a moderate extent among public primary schools in the study area.

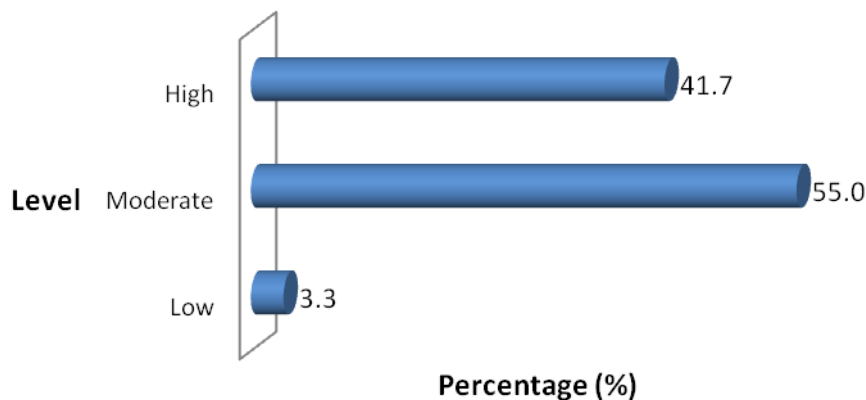


Figure 10: Overall Reward and Recognition Index

4.2.7 Customer Focus in the Public Primary Schools

The study sought to determine the extent to which customer focus was achieved in public primary schools. The five point likert scale with levels strongly agree, moderately agree,

undecided, moderately disagree and strongly disagree was used. The results are tabulated on Table 8.

Table 8: Extent of Customer Focus among Public Primary Schools

Statement	Responses(percentages)					Total
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
The employees of this school in all levels , realize that the real reason of their existence is to offer educational services to the pupils	28.8	61.5	7.7	2.0	0.0	100 %
In this school, there is a clear vision (focused on pupils) which forms the basis for strategic planning & decision making	30.8	61.5	7.7	0.0	0.0	100 %
In this school, students are viewed as the most important customers	40.4	46.2	13.5	9.9	0.0	100 %
The environmental conditions as temperature, ventilation, noise, neatness, painting, furniture outlay physical lighting that school offers are sufficient in terms of quality to the school customers (pupils)	17.3	44.2	23.1	13.5	1.9	100 %
Pupils interests are respected and implemented	23.1	63.5	11.5	1.9	0.0	100 %
Pupils different needs are catered for in our school	26.9	63.5	9.6	0	0	100 %
Pupils results are communicated immediately after an examination	42.3	53.8	1.9	0	1.9	

This study revealed that 90.3% of the study respondents generally agreed that the employees of their schools in all levels realized that the real reason of their existence was to offer educational services to the pupils, 2.9% disagreed while 7.7% were undecided. Also, 92.2% of the study respondents generally agreed that in schools, there was a clear vision (focused on pupils) which formed the basis for strategic planning and decision making while 7.7% were undecided.

Further, the study findings indicated that 86.6% generally agreed that in schools, students were viewed as the most important customers, 9.9% disagreed while 13.5% were undecided. Also, the study findings indicated that 61.5% of the respondents generally agreed that the environmental conditions (temperature, ventilation, noise, neatness, painting, furniture outlay physical lighting) that school offered were sufficient in terms of quality to the school customers (pupils), 15.4 disagreed while 23.1% were undecided. Study findings indicate 86.6% of the respondents generally agreed that pupils interests were respected and implemented, 1.9% disagreed whereas 11.5% were undecided.

Further, findings revealed that 90.4% of the respondents generally agreed that pupils' different needs were catered for in schools while 9.6% were undecided. Finally, 96.1% of the respondents generally agreed that pupils results were communicated immediately after an examination, 1.9% disagreed while 1.9% were undecided.

On the overall extent to which customer focus were achieved, survey data (Figure 11) shows that 87% of respondents reported "low", 12% reported "moderate" whereas only 1% reported "high". It is evident from the findings that customer focus was achieved to a less extent among the primary schools in the area.

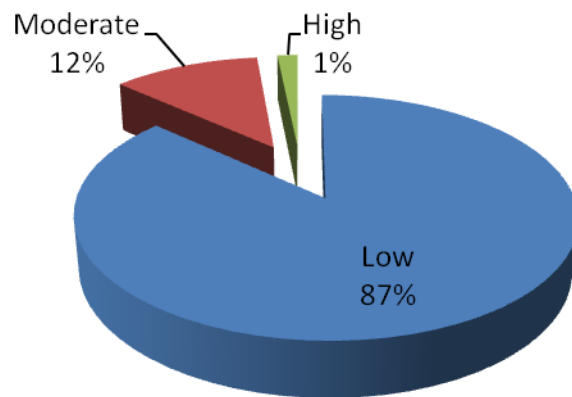


Figure 11: Overall Customer Focus Index

4.2.8 Other Intervening Factors in Public Primary Schools

The study set out to determine the extent to which other intervening factors in public primary schools have influenced performance. The five point likert scale with levels strongly agree, moderately agree, undecided, moderately disagree and strongly disagree was used. The results are tabulated on Table 9.

Table 9: Extent of Other Factors in Public Primary Schools

Statement	Responses(percentages)					Total (%)
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
Learning resources influence the academic performance	51.9	36.5	1.9	1.9	7.9	100.0
Learning resources influence enrollment levels	38.5	40.4	7.6	5.8	7.7	100.0
Learning resources influence co –curricular activities	28.8	42.3	11.6	7.7	9.6	100.0
School management committee influence the academic performance	19.2	65.4	5.8	1.9	7.7	100.0
School management affects enrollment levels	11.5	65.4	0.0	13.5	9.6	100.0
School management influence co-curricular activities	11.5	53.8	15.7	11.5	7.7	100.0

The study findings revealed that 88.4% of the respondents generally agreed that learning resources influenced the academic performance, 9.6% disagreed while 1.9% were undecided. Furthermore, 78.9% of the respondents generally agreed that learning resources influenced enrollment levels, 13.5% disagreed whereas 7.6% of the respondents were undecided.

In addition, 71.1% of the respondents generally agreed that learning resources influenced co – curricular activities, 17.3% disagreed while 11.6% were undecided. Also, study findings show that 84.6% of the respondents generally agreed that school management committee influenced the academic performance, 9.6% disagreed while 5.8% of the respondents were undecided. In addition, study findings show that 76.9% of the respondents generally agreed that school

management affects enrollment levels while 23.1% disagreed. Finally, study data indicate that 65.1% of the respondents generally agreed that school management influenced co-curricular activities, 19.2% disagreed while 15.7% were undecided.

With regard to overall extent to which other factors influenced performance in the public primary schools, survey data (Figure12) shows that 75% of the respondents reported “high”, 18% reported “moderate” and only 7% reported “low”. It is evident that other intervening factors influenced performance in the schools to a greater extent.

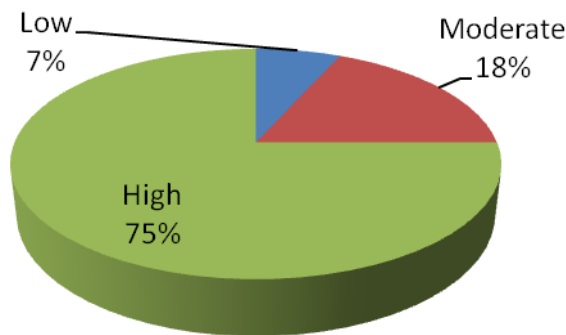


Figure 12: Overall Other Factors Index

4.3 The Effect of Quality Management Practices on Performance of Public Primary Schools

The third objective of this study sought to determine the effect of quality management practices on performance in public primary schools within Nakuru Municipality. To achieve this, the various independent variables such as top management commitment, teamwork, continuous improvement, competitive benchmarking, training, reward and recognition and customer focus) were regressed on the overall performance (KCPE mean score, enrollment and co-curricular activities) at 95% confidence level. The results of the regression analysis are presented and discussed in the section below:

4.3.1 Effect of Quality Management Practices on Academic Performance

On the basis of the level of significance (p-values) in Table 10, most of the elements of quality management practices namely; Top Management commitment (p = .045, p<0.05), Teamwork (p = .047, p<0.05), Continuous Improvement (p = .013, p<0.05), Competitive Benchmarking (p = .026, p<0.05), , Reward and Recognition (p = .034, p<0.05) were found to significantly influence academic performance in the schools. Nevertheless elements of quality management such as Training (p = .052, p>0.05) and Customer focus (p = .065, p>0.05) were not found to significantly influence academic performance in the schools.

Table 10: Regression of Quality Management practices on Academic Performance

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig. (P-value)
	B	Std. Error	Beta		
(Constant)	648.635	297.848		2.178	.034
Top Management commitment	1.231	9.012	.023	.137	.045
Teamwork	.685	3.517	.029	.195	.047
Continuous Improvement	6.705	11.272	.115	.595	.013
Competitive Benchmarking	4.564	9.423	.092	.484	.026
Training	.429	10.758	.008	.040	.052
Reward & Recognition	4.261	11.496	.095	.371	.034
Customer focus	.545	5.293	.017	.103	.065
a. Dependent Variable: Average Mean score					

Consequently, regression summary model (Table 11) confirms that the observed change in academic performance attributed to the elements of quality management practices (top management commitment, teamwork, continuous improvement, competitive benchmarking, training, reward and recognition and customer focus) was 60.84% ($r^2 = 0.6084$). On the basis of the regression analysis, quality management practices significantly influences academic performance in the public primary schools in the study area. The solved regression line using the values obtained is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$$

Where: **Y** = dependent variable, **β_0** = Intercept (Beta constant), **X_1** = Top Management commitment, **X_2** = Teamwork **X_3** = Continuous Improvement, **X_4** = Competitive Benchmarking, **X_5** = Training, **X_6** =

Reward and Recognition, X_7 = Customer focus and ϵ = Prediction error (standard error). The regression model is thus expressed as;

$$\text{Academic Performance} = 648.635 + 1.231 (P=0.045) X_1 + 0.685 (P=0.047) X_2 + 6.705 (P=0.013) X_3 + 4.564 (P=0.026) X_4 + 0.429 (p = 0.026) X_5 + 4.261 (p= 0.034) X_6 + 0.545 (p= 0.065) X_7 + 297.848$$

The regression model shows that, an increase in Top Management commitment, Teamwork, Continuous improvement, Competitive Benchmarking, Training, Reward and Recognition Customer focus have a positive impact on academic performance.

Table 11: Regression Summary of Quality Management Practices on Academic Performance

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	.780 ^a	.6084	.6072	149.48465	.079	.600	7	49	.002

a. Predictors: (Constant), Customer focus, Competitive Benchmarking, Teamwork, Training, Top Management commitment, Continuous Improvement, Reward and Recognition

4.3.2 Effect of Quality Management Practices on Enrolment in Primary Schools

According to the study findings (p-values) in Table 12, elements of quality management practices namely; Top Management commitment (p = .050, p<0.05), Continuous Improvement (p = .041, p<0.05), Competitive Benchmarking (p = .038, p<0.05), and Customer focus (p = .048, p<0.05) were found to significantly influence enrolment in the schools. On the other hand, Teamwork (p = .062, p>0.05), Training (p = .057, p>0.05) and Reward and Recognition (p = .079, p>0.05) did not significantly influence enrolment in the schools.

Table 12: Regression of Quality Management Practices on Enrolment

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig. (p-value)
		B	Std. Error	Beta		
1	(Constant)	3180.900	3748.427		.849	.400
	Top Management commitment	132.425	113.951	-.196	-1.162	.050
	Teamwork	25.033	45.750	-.080	-.547	.041
	Continuous Improvement	16.153	112.409	-.023	-.144	.016

	Competitive Benchmarking	107.184	108.110	.169	.991	.038
	Training	76.597	137.162	.115	.558	.057
	Reward & Recognition	2.206	149.707	.004	.015	.079
	Customer focus	66.139	68.747	.159	.962	.048
a. Dependent Variable: Total enrolment						

Ultimately, regression summary model (Table 13) confirms that the observed change in enrolment levels attributed to the elements of quality management practices (top management commitment, teamwork, continuous improvement, competitive benchmarking, training, reward and recognition and customer focus) was 33.75% ($r^2 = 0.3375$). On the basis of the regression analysis, quality management practices were found to significantly influence enrolment in the public primary schools in the study area. The solved regression line using the values obtained is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$$

Where: Y = dependent variable, β_0 = Intercept (Beta constant), X_1 = Top Management commitment, X_2 = Teamwork X_3 = Continuous Improvement, X_4 = Competitive Benchmarking, X_5 = Training, X_6 = Reward and Recognition, X_7 = Customer focus and ϵ = Prediction error (standard error). The regression model is thus expressed as;

$$\text{Enrolment} = 3180.900 + 132.425 (P=0.050) X_1 + 25.033 (P=0.041) X_2 + 16.153 (P=0.016) X_3 + 107.184 (P=0.038) X_4 + 76.597 (P = 0.057) X_5 + 2.206 (P= 0.079) X_6 + 66.139 (P= 0.048) X_7 + 3748.427$$

The regression model shows that, an increase in Top Management commitment, Teamwork, Continuous improvement, Competitive Benchmarking, Training, Reward and Recognition Customer focus have a positive impact on enrolment.

Table 13: Regression Summary of Quality Management Practices on Enrolment

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	.581 ^a	.3375	.3365	1960.339	.337	.510	7	52	.003

a. Predictors: (Constant), Customer focus, Competitive Benchmarking, Teamwork, Training, Top Management commitment, Continuous Improvement, Reward & Recognition.

4.3.3 Effect of Quality Management Practices on Co-curricular Activities

Based on the study findings, (p-values) in Table 14, elements of quality management practices namely; Top Management commitment (p = .035, p>0.05), Teamwork (p = .029, p>0.05), Competitive Benchmarking (p = .047, p<0.05), Reward and Recognition (p = .002, p<0.05) were found to significantly influence performance in co-curricular activities in the schools. However, quality management practices such as continuous improvement (p = .125, p>0.05), Training (p = .122, p>0.05) and customer focus (p = .081, p>0.05) were not found to significantly influence performance in co-curricular activities in the schools.

Table 14: Regression of Quality Management Practices on Co-curricular Activities

Model		Un-standardized Coefficients		Standardized Coefficients	T	Sig. (p-value)
		B	Std. Error	Beta		
1	(Constant)	3.745	2.559		1.463	.149
	Top Management commitment	.076	.078	.157	.976	.035
	Teamwork	.040	.031	.176	1.267	.029
	Continuous Improvement	-.025	.077	-.049	-.321	.125
	Competitive Benchmarking	.148	.074	.325	1.999	.047
	Training	.061	.094	.129	.654	.122
	Reward & Recognition	-.233	.102	-.562	-2.279	.002
	Customer focus	.039	.047	.132	.837	.081
<i>a. Dependent Variable: Level of co-curricula performance</i>						

Consequently, regression summary model (Table 15) confirms that the observed change in co-curricular activity performance attributed to the elements of quality management practices (top

management commitment, teamwork, continuous improvement, competitive benchmarking, training, reward and recognition and customer focus) was 72.5% ($R^2 = 0.725$). On the basis of the regression analysis, quality management practices significantly influenced performance in co-curricular activities within the public primary schools in the study area. The solved regression line using the values obtained is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$$

Where: Y = dependent variable, β_0 = Intercept (Beta constant), X_1 = Top Management commitment, X_2 = Teamwork X_3 = Continuous Improvement, X_4 = Competitive Benchmarking, X_5 = Training, X_6 = Reward and Recognition, X_7 = Customer focus and ϵ = Prediction error (standard error). The regression model is thus expressed as;

$$\begin{aligned} \text{Co-curricular activities} = & 3.745 + 0.076 (P=0.035) X_1 + 0.040 (P=0.029) X_2 - 0.025 (P=0.125) \\ & X_3 + 0.148 (P=0.047) X_4 + 0.061 (P= 0.122) X_5 - 0.233 (P= 0.002) X_6 + 0.039 \\ & (P= 0.081) X_7 + 2.559 \end{aligned}$$

The regression model shows that, an increase in Top Management commitment, Teamwork, Competitive Benchmarking, Training and Customer focus have a positive impact on Co-curricular activities whereas increase in Continuous improvement and Reward and Recognition have a negative impact.

Table 15: Regression Summary of Quality Management practices on Co-curricula Activities

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	.852 ^a	.725	.723	1.33845	.725	1.262	7	52	.004

a. Predictors: (Constant), Customer focus, Competitive Benchmarking, Teamwork, Training, Top Management commitment, Continuous Improvement, Reward & Recognition.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

On the basis of the study objectives and data analysis, the results support the following summary findings:

5.1.1 Application of Quality Management Practices in Public Primary Schools in Nakuru Municipality.

The first objective of the study was to determine the extent to which quality management practices have been applied in public primary schools in Nakuru Municipality. To achieve this objective, the study investigated the various aspects of quality management practices namely: top management commitment, teamwork, continuous improvement, competitive benchmarking, training, reward and recognition and customer focus. The study findings revealed that top management commitment was highly achieved among the public primary schools and continuous improvement was achieved to a greater extent among the primary schools in the area. Further, competitive benchmarking, training as well as reward and recognition were achieved to moderate extent among the public primary schools in Nakuru Municipality. Finally the Study findings indicate that teamwork and customer focus were achieved to a less extent in the public primary schools in Nakuru Municipality.

5.1.2 The Effect of Quality Management Practices on Performance in Public Primary Schools

The second objective sought to determine the effect of quality management practices on performance in public primary schools in Nakuru Municipality. On the basis of the regression analyses, quality management practices top management commitment was found to significantly influence academic performance, enrolment and co-curricular activities in public primary schools. This agrees with other scholars findings such as Oakland who found that to be successful in promoting business efficiency and effectiveness, Quality management must start at the top with the chief executive. Cooper and Ellram identified leadership as being critical in effecting organizational change most especially in the areas of building effective relationships with suppliers and others involved in the process of value delivery.

Teamwork was found to significantly influence academic performance and co-curricular activities but did not significantly influence enrolment in public primary schools. This is in line with other researchers findings who argue that teamwork brings about improvement that have a way of changing the attitudes of employees that are resistant to change. Teamwork has a lot of benefits to an organization. Dale noted that team work is a key feature of involvement. To him team work aids the commitment of the workforce to the organizational goals and objectives.

Continuous improvement was found to significantly influence academic performance and enrolment but did not significantly influence co-curricular activities in public primary schools within Nakuru Municipality. This agrees with Stahl (1995) findings that “continuous improvement refers to the constant management and improvement of products, services and organizational system to yield improved value to customers”. He further explained that the continuous look for ways in improving quality of products or services in the absence of customer’s complaint may prevent a future problem.

Competitive benchmarking was found to significantly influence academic performance, enrolment and co-curricular activities in public primary schools. This agrees with other scholars work who argue that the purpose of bench marking is to provide a target for improving the performance of the organization in order to achieve superiority in the market place. Apart from benchmarking with other leaders in the industry, the company also needs to asses its Competitors performance. The aim is to discover best practices and adopt them in the company to achieve competitive advantages. Training was found not to significantly influence academic performance, enrolment and co-curricular activities in public primary schools. This was contrary to other researcher’s findings that training help in preparing employees towards managing the Quality Management ideology in the process of production. Training equips people with the necessary skills and techniques of quality improvement. It is argued to be a powerful building block of business in the achievement of its aims and objectives (Stahl, 1995).

Reward and recognition were found to significantly influence academic performance and co-curricular activities in public primary schools but did not significantly influence enrolment. This partly agrees with other scholar’s work that effective recognition and reward activities can stimulate employee commitment to the firm. A firm’s Quality Management initiative must be

supported with a recognition and reward system that encourages and motivates employees to achieve the desired performance. Finally Customer focus were found to significantly influence enrolment but did not significantly influence academic performance and co-curricular. On enrolment it agrees with other researchers work but disagrees on the area of academic performance and co-curricular activities since customer focus is an ideology which is focused on the satisfaction of customers needs.

On the basis of percentage effect of the quality management practices on performance, study findings revealed that performance in co-curricula activities (72.5%) was greatly impacted by the quality management practices followed by academic performance (60.84%) and enrolment (33.65%). The effective implementation of Quality Management practices will increase customer satisfaction with the service offerings (Omachonu and Ross, 1994). The core function of schools being to provide services, from the study academic performance is greatly impacted by Quality Management Practices. Quality enhances customer loyalty through satisfaction; this in turn can generate repeat business and lead to the attraction of new customers through positive word of mouth. The word of mouth communication will help in cost reduction. The improvement in quality will result in increased market share and profitability. Based on the study it reveals that enrolment in schools is impacted by the Quality Management Practices which has led to increased enrolment in public primary schools.

Public schools over the years have experienced changes which have complicated their management. These changes include; free primary tuition, breakthrough in technology and climatic changes. Although schools that fall under the public sector have less opportunity to develop Quality Management practices as this is defined by a political process outside the control of school management, (Macmillan & Tampoe, 2000). This is revealed by the study findings in that Quality Management Practices impact on enrolment is only 33.65% despite increased enrolments in public primary schools due to political policies. This is because Public primary schools face challenges of inadequate resources needed in enrolling more learners.

5.2 Conclusions

The purpose of this study was to establish the effect of quality management practices on performance in public primary schools in Nakuru Municipality. The study concluded that

quality management practices were achieved to varying extents among the public primary schools in the study area. It was notable that competitive benchmarking, training as well as reward and recognition were achieved moderately whereas teamwork and customer focus were marginally achieved in the public primary schools in the study area.

On the effect of quality management practices on performance, the study concluded that the top quality management practices such as top management commitment; continuous improvement, competitive benchmarking and reward and recognition were found to significantly influence performance of across the various aspects under study such as academic performance, enrollment and co-curricula activities. On the other hand the study concludes that other elements of quality management practices such as teamwork, training and customer focus were effective to particular aspects of school performance. For instance teamwork influenced co-curricula activities, Training (academic performance), and customer focus (enrollment). Finally, study concludes that quality management practices significantly influenced performance among the schools in the study area.

5.3 Recommendations

It is evident from the study findings that competitive benchmarking, training as well as reward and recognition were achieved moderately whereas teamwork and customer focus were marginally achieved in the public primary schools in the study area. This study recommends the need to strengthen these elements of quality management practices in order to realize meaningful performance among public primary schools in the study area.

The study also found out that the performance in terms of KCPE mean score; enrolment levels and co-curricular activities were generally low to moderate among public primary schools in the study area. The findings suggest that quality management practices perhaps have not translated into significant improvement in performance among public primary schools in the study area. Consequently, this study recommends effective application of quality management practices among other strategies in order to achieve measurable improvement in the performance of the schools.

Finally, this study revealed that all the quality management practices (top management commitment, teamwork, continuous improvement, competitive benchmarking, training, reward and recognition and customer focus) significantly influence performance among schools in the study area. There is need for stakeholders in the public primary schools to increasingly and effectively implement the identified quality management practices in order to realize increased levels of performance especially in KCPE mean score, enrollment and co-curricular activities.

5.4 Suggestions for Future Research

The study provided relevant insights on the extent to which public primary schools implement quality management practices and the effects it has on the performance in terms of KCPE mean score, enrollment and co-curricula activities. Future research should attempt to replicate this study in other counties to compare the results. Further, there is a need for other studies to focus on the private primary schools in Kenya since majority of them offer the same curriculum as the public primary schools.

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APPENDICES

APPENDIX I

Head teachers questionnaire

Kindly provide answers to the questions below in the spaces provided

SECTION A: RESPONDENT'S BIO DATA

1. Name of school: (Optional)
2. What is your gender? Male Female
3. Highest Educational level attained: PI Diploma Degree
 Masters PhD
4. Number of years in the school: 0-5 yrs 6-10yrs over 10 years
5. Number of years as a head teacher: 0-5 yrs 6-10yrs over 10 years

SECTION B: IMPLEMENTATION OF QUALITY MANAGEMENT PRACTICES

6. Please evaluate the extent to which your school implements the following quality practices, using the key/scale provided.

Scale

5 - Strongly agree 4 - Agree 3- Undecided 2- Disagree 1- Strongly disagree

a) Top management commitment

Quality Practices	5	4	3	2	1
As a head teacher I give directions to teachers to improve quality					
Our school strives to eliminate barriers for teachers to work efficiently and cooperatively					
Teachers decisions are respected and adopted					
Head teacher teaches his/her subject area and owns the results					
Head teacher interacts with pupils to know their problems					
As a head teacher you provide the necessary learning resources e.g textbooks, charts etc					
Teachers are encouraged to interact for the purpose of improving quality					

b) Teamwork

Quality Practices	5	4	3	2	1
In this school, all the teachers participate in Decision-making process.					
Effective teams ensure commitment of teachers					
There is a atmosphere of respect, cooperation and trust in our school that motivates our teachers					
In this school, there is a good and open relationship among teachers					
Teachers are involved in cooperative teaching					
All teachers participate in remedial classes during school holidays					
The entire workforce understands, and is committed to the vision, values and quality goals of the organization.					

c) Continuous improvement

Quality Practices	5	4	3	2	1
Teachers calculate value added progress for their pupils					
The school keeps value added progress for each pupil from class one to eight					
Head teacher communicates to teachers and pupils the overall mean marks for KCPE					
When KCPE results are released a staff meeting is held to discuss the results and way forward					
Teachers discuss improvement strategies for their subjects					
The school ensures that physical facilities are increased as enrolment goes up					
Teachers constantly Measure and assess performance					

d) Competitive benchmarking

Quality Practices	5	4	3	2	1
The school compares its performance with other schools					
The school borrows improvement strategies from well performing schools					
Teachers and pupils are given opportunities to visit well performing schools and share experiences,					
The school head compares his/her management style with other heads					

The school compares its physical infrastructure e.g classrooms ,workshops etc with other schools/organizations					
The school borrows improvement strategies from organization that do not provide education services					

e) Training

Quality Practices	5	4	3	2	1
School as an organization always strives to develop the skills and abilities of personnel to improve facilities in order to satisfy customers					
Regular Training for teachers is put in place					
Teachers are sponsored to attend educational seminars					
In-service of teachers is done internally by senior teachers					
External specialists in a subject area are invited to train teachers					
Teachers are allowed to study on their own sponsorship during school holidays					

f) Reward and recognition

Quality Practices	5	4	3	2	1
There is a tendency from the side of the administration to consider teachers as valuable and long term human resources					
In this school, teachers are empowered to participate in quality improvement process					
Physical working conditions in our school motivate employees					
All the teachers in our school are treated with respect and dignity					
Management encourages and recognize team-work effort					
All the teachers of our school are recognized as contributors in decision making					
In our school teachers are rewarded after posting good results					

g) Customer focus

Quality Practices	5	4	3	2	1
The employees of this school in all levels, realize that the real reason of their existence is to “to offer educational services to the pupils					
In this school there is a clear vision (based on pupil focus) and the extent to which the vision forms the basis for strategic planning and decision-making					
In this school, students are viewed as the most important customers					
The environmental conditions as temperature, ventilation, noise, neatness, painting furniture layout and physical lighting that school offers are sufficient in terms of quality to the school customers (pupils)					
Pupils decisions are respected and implemented					
Pupils different needs are catered for in our school					
Pupils results are communicated immediately after an examination					

SECTION C: ORGANIZATIONAL PERFORMANCE

7. Please indicate the K.C.P.E. mean marks of your school in the last five years indicated.

Year	2006	2007	2008	2009	2010
Mean marks					

8. Please indicate the total number of pupils in your school for the years indicated.

Year	2006	2007	2008	2009	2010
Number of pupils					

9. Please indicate with a tick (√) the highest level your school has reached in sports.

- Zonal level
- District level
- Provincial Level
- National level

10. Please indicate with a tick (√) the highest level your school has reached in Drama and music.

Zonal level

District level

Provincial Level

National level

SECTION D: OTHER FACTORS

11. Indicate the extent to which you agree or disagree with the following statements concerning the organizational culture in your school. Use the scale below to tick appropriately in the table below:

1- Strongly disagree; 2 – Disagree; 3 – Undecided; 4 – Agree and 5 - Strongly agree

	Statement	1	2	3	4	5
1	Learning resources influence the academic performance					
2	Learning resources influence enrolment levels					
3	Learning resources influence co-curricular activities					

13. To what extent does the school management committee influence the achievements of set goals in your school? Use the scale below to tick appropriately in the table below:

1- Strongly disagree; 2 – Disagree; 3 – Undecided; 4 – Agree and 5 - Strongly agree

	Statement	1	2	3	4	5
1	school management committee influence the academic performance					
2	school management committee affects enrolment levels					
3	school management committee influence co-curricular activities					

Thank you for your cooperation

APPENDIX II

PUBLIC PRIMARY SCHOOLS STAFFING AS AT JANUARY 2011

S/NO.	ZONE & SCHOOLS	TEACHERS		GRAND TOTAL
		Male	Female	
CENTRAL ZONE				
1	BAHARINI	2	18	20
2	FLAMINGO	6	19	25
3	KALOLENI	2	7	9
4	KARIBA ROAD	4	13	17
5	KENYATTA	3	16	19
6	LAKEVIEW	3	6	9
7	ST. THERESA'S	1	8	9
8	ST. JOSEPH'S	4	16	20
9	ST. MARY'S	1	19	20
10	ST. PAUL'S	2	12	14
11	ST. XAVIERS	3	10	13
TOTAL		31	144	175
EASTERN ZONE				
1	ABERDARE RANGERS	2	4	6
2	BONDENI	4	7	11
3	CRATER	2	17	19
4	JAMHURI	5	15	20
5	KISULISULI	4	14	18
6	LIONHILL	4	19	23
7	MADARAKA	8	16	24
8	MBURU GICHUA	5	7	12
9	MENENGAI	3	20	23
10	MENENGAI INTERG	1	4	5
11	MIRUGI KARIUKI	3	14	17
12	NAIROBI ROAD	8	11	19
13	NAKA	6	6	12
14	NAKURU	4	9	13
15	NDIMU	9	8	17
16	RHINO	12	6	18
TOTAL		80	177	257
NORTHERN ZONE				
1	HYRAX	10	21	31
2	LANET	4	21	25

3	LENANA	1	13	14
4	MLIMANI	2	14	16
5	MOI	6	29	35
6	NAKURU EAST	3	17	20
7	NAKURU TEACHERS	6	13	19
8	PRISON'S	1	18	19
9	ST. JOHN'S	6	17	23
TOTAL		39	163	202
SOUTHERN ZONE				
1	BARUT	7	5	12
2	HESHIMA	6	25	31
3	INGOBOR	6	7	13
4	KELELWET	7	3	10
5	KIGONOR	8	1	9
6	KIMATHI	4	12	16
7	KIPTENDEN	8	3	11
8	LANGALANGA	10	24	34
9	MAMA NGINA	5	32	37
10	MOGOON	6	12	18
11	MWARIKI	4	13	17
12	PARKVIEW	8	1	9
13	RACETRACK	3	17	20
TOTAL		82	155	237
WESTERN ZONE				
1	EILEEN NGOCHOCH	7	10	17
2	FREEHOLD	6	15	21
3	HARAMBEE KHALSA	6	22	28
4	KAPTEMBWO	6	26	32
5	KIBOWEN KOMEN	4	19	23
6	KOINANGE	6	17	23
7	MUSLIM	5	24	29
8	NAKURU WEST	4	17	21
9	PANGANI	5	18	23
10	UHURU	2	17	19
11	UMOJA	3	13	16
TOTAL		54	198	252
GRAND TOTAL		286	837	1123

Source : Municipal Education Office, Nakuru.

APPENDIX III**PUBLIC SCHOOLS KCPE ANALYSIS**

S\no	Centre Code	School Name	2006	2007	2008	2009	2010
1	506 108	Moi	296.220	299.1530	318.5676	313.0655	301.9444
2	506129	St.Johns	308.057	279.024	306.0012	273.4000	288.8183
3	506 203	Mama Ngina	271.609	265.6080	291.3907	275.6892	283.9900
4	506 225	Racetrack	284.386	291.7690	279.3726	279.9042	302.8529
5	506 202	Harambee Khalsa	283.588	274.6100	277.8521	275.4600	248.6900
6	506 104	St. Mary's	288.513	302.7860	274.5876	289.1836	287.7180
7	506 117	Nakuru East	254.500	252.6740	269.9114	262.1700	263.1200
8	506 110	Lanet	244.568	268.1910	264.8561	252.3734	241.6777
9	506 126	Nairobi Road	250.571	240.0100	261.7956	258.4500	247.9110
10	506 118	Menengai	291.197	286.4520	260.9278	286.1685	296.2780
11	506 144	Mburu Gichua		New	257.7430	236.3678	228.0500
12	506 201	St. Joseph's	248.750	264.9900	254.8861	280.5521	256.1570
13	506 111	Hyrax	242.059	231.2200	252.6713	226.9000	234.1230
14	506 213	Freehold	270.521	242.8520	247.2973	242.9352	232.7320
15	506 107	Jamhuri	275.795	256.8410	245.5000	245.4730	259.1059
16	506 115	Crater	245.637	246.2550	242.2285	245.6030	253.0010
17	506 109	Kenyatta	234.073	245.2120	240.2942	234.3804	244.1470
18	506 130	Nakuru Teachers	256.122	245.4770	239.2933	277.3331	278.6690
19	506 211	Koinange	234.337	219.8280	235.1199	223.9641	238.3700
20	506 229	Ingobor	224.837	222.2200	234.8704	221.0213	232.6200
21	506 114	Madaraka	222.284	229.5890	232.6082	223.3900	217.7600

22	506 122	Lionhill	226.723	225.0570	230.7712	234.1892	218.7500
23	506 209	Mlimani	205.024	202.0930	230.3616	225.7179	220.9344
24	506 132	Naka	233.714	211.4810	230.0333	207.6885	214.0600
25	506 120	Kariba Road	222.615	208.8550	227.6421	201.2581	201.9999
26	506 230	Eileen Ng'ochoch	234.161	226.3880	227.4999	210.7720	203.2360
27	506 205	Flamingo	243.084	241.6070	227.1280	229.9839	228.9200
28	506 210	Heshima	245.750	210.1340	225.3424	230.4220	225.8570
29	506 112	Kisulisuli	233.675	244.9180	225.0954	242.7857	244.5543
30	506 207	Langalanga	223.938	228.8270	224.9920	226.0136	237.1800
31	506 206	Uhuru	234.758	202.4230	223.1383	233.0112	212.6118
32	506 121	Kaloleni	215.063	234.6790	221.5804	220.4517	235.5680
33	506 221	Nakuru West	227.696	213.0600	221.3056	216.8438	217.5170
34	506 116	Nakuru Primary	229.161	226.6570	218.5636	243.0566	230.5790
35	506 131	Ndimu	231.889	214.0250	218.2050	224.4691	224.9120
36	506 102	St. Theresa'a	184.098	210.3330	216.1923	215.7620	221.9590
37	506 208	Kaptembwo	223.407	210.3830	214.9525	208.8503	204.7507
38	506 222	Lakeview	237.065	215.3400	214.3266	230.1667	234.1230
39	506 103	Bondeni	213.172	201.2500	212.6711	217.1399	190.1429
40	506 134	Rhino	208.588	217.3390	210.6421	210.6382	225.4000
41	506 214	Pangani	212.165	226.5880	209.7227	232.5275	207.0072
42	506 218	Mogoon	228.931	225.6700	208.2644	194.7975	214.9000
43	506 204	Kimathi	225.489	228.1460	207.1085	207.9231	227.8340

44	506 224	Umoja	213.262	215.0630	204.7180	205.3147	224.6100
45	506 217	Barut	195.721	197.5490	203.6850	175.4912	191.6300
46	506 216	Prison's	222.148	228.1640	203.0431	234.3091	213.8600
47	506 101	Baharini	214.721	207.3140	202.8571	219.6616	207.6900
48	506 212	Mwariki	214.000	211.6700	202.1450	234.0000	213.0140
49	506 234	Kiptenden	228.833	215.7560	200.9510	204.1665	226.2290
50	506 113	Lenana	245.810	223.8000	200.6627	224.5135	234.8853
51	506 215	Muslim	227.822	209.1420	200.1342	222.6260	208.4139
52	506 105	St. Paul's	208.795	194.7530	194.0000	197.6806	240.2306
53	506 226	Kibowen Komen	232.974	186.8420	179.0905	221.3156	213.1650
54	506 219	Kelelwet	172.263	177.7710	174.4061	168.2128	186.2930
55	506 220	Kigonor	189.438	179.5630	157.3332	191.5000	147.2200
56	506 145	Mirugi Kariuki	-	-	-	246.9719	229.3390
57	506 106	St. Xaviers	324.674	328.7050	307.2033	325.1736	329.6200
58	506 232	Park view	193.235	202.0000	142.9000	186.2000	219.9100
59	506	Aberdare Ranger	-	-	-	-	-
60	506	Menengai Inte.	-	-	-	-	-

Source: Municipal Education Office, Nakuru.