FACTORS INFLUENCING APPLICATION OF TOTAL QUALITY MANAGEMENT IN TECHNICAL TRAINING INSTITUTIONS IN NAIROBI COUNTY, KENYA

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A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN PROJECT PLANNING AND MANAGEMENT, UNIVERSITY OF NAIROBI

2013
DECLARATION

This Research Project report is my original work and has not been presented for award of a degree at any University.

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This research project report is dedicated to my loving parents Mr Robert Gichara and Mrs Susan Wachera, my brothers Edward Maina and George Muna and my sister Jane Wambui.
ACKNOWLEDGMENTS

I acknowledge my supervisor Dr Mercy Mugambi whose dedication, guidance and supervision enabled me to successfully complete this study and my lecturers whose wisdom, knowledge and guidance I have greatly benefited from in the course of my studies. I greatly appreciate the chance accorded to me by the University of Nairobi to pursue this course and also appreciate my fellow students and friends for their generous contributions, suggestions, and moral support that they offered. I also appreciate all the respondents for agreeing to participate in this study by dedicating their time to be interviewed or filling in the questionnaire. I will always be indebted to you all.
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<td>Communication Commission of Kenya</td>
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<tr>
<td>IHRM K</td>
<td>Institute of Human Resource Management of Kenya</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labor Organization</td>
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<td>IT</td>
<td>Information and Technology</td>
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<td>KIM</td>
<td>Kenya Institute of Management</td>
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<td>MOEST</td>
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ABSTRACT
This study sought to establish factors influencing the use of TQM in the management of Public Technical Training Institutions (PTTIs) in Nairobi County, Kenya. The study looked at various factors which included; employee involvement, employee training, and technology, communications systems and resource availability. The study was guided by the following objectives; to examine how employee involvement systems influence the use of TQM, to determine how employee training influence the use of TQM, to establish how technology influence the use of TQM, to establish how communication systems influence the use of TQM and to establish how the availability of resources influence the use of TQM in management of PTTIs. The study adopted a descriptive survey design. The target population of the study comprised seven hundred and sixty (760) Heads of Department (HODs) and lecturers in PPTIs in Nairobi County. The study sampled twenty four (24) HODs and one twenty eight (128) lecturers using stratified random sampling and simple random sampling to select the sample elements (HODs & Lecturers) to participate in the study. An interview guide and questionnaire were used to collect both qualitative and quantitative data. Data analysis entailed the use of SPSS to run frequency distribution. The study established that 57% of the PTTIs allowed direct lecturers involvement while 35.4% of the PTTIs allowed indirect involvement in management through various programs, this involvement positively influenced (73%) use of TQM in the management of the PTTIs. The study found out that employee level of training had an influence (70%) on TQM use in management with most of PTTIs providing opportunities to its lecturers for continuous training and development. The study established that majority (78.5%) of the PTTIs had adopted modern computer based technology that was used in various levels of management thus resonating positively (64%) with use of TQM in management. The study also established that resource availability (41.8%) in terms of funds and physical facilities to be important in the adoption and use of TQM programs in the management of the PTTIs. The study further established that majority (69.8%) of the PTTIs had closed communication systems that were ineffective (48.1%) for use thus negatively influencing the use of TQM in the management of the PTTIs. The study recommended the setting up of reward and recognition systems that encourage direct participation and involvement of lecturers in management affairs of the PTTIs, training the lecturers in other areas like continuous quality improvement techniques and use of IT tools, setting up additional IT infrastructure so as to improve TQM use in the management of the PTTIs, provision of quality and adequate resources to facilitate the effective use of TQM in the management of PTTIs and adoption of communication systems that are open and all round and thus effective for use in management of the PTTIs. The study proposes further research study to be conducted to establish; Factors influencing the use of TQM in the Management of Tertiary Institutions: A case of Private Technical Training Institutions. Influence of organizational culture on the use of TQM in the management of PTTIs and Top leadership influence on the use of TQM in the management of PTTIs.
CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Since its inception Total Quality Management (TQM) philosophy has proved to be very popular with almost all organizations both in the private and public sectors. TQM has been very instrumental in the determination of the success or failure, growth or stagnation, survival or demise, competitiveness or non-competitiveness and expansion or decline of organizations. When applied carefully and effectively TQM philosophy has been responsible for increased, success, growths, competitiveness, expansion, prosperity and survival. Conversely when used haphazardly and ineffectively TQM results in more stagnation, failures and non-competitiveness (Boela, 2011). TQM has been used successfully in management of organizations where it has continued to register impressive results. It has been applied in planning, organizing, decision making, control and coordination functions with recorded cases of increased success. The use of TQM has equally been noticed in the key functional areas of human resources, marketing, productions, finance and administration where it has proved very critical and important in eliciting positive outcomes as in innovation, change, commitment, flexibility and production (Robbins, 2009).

TQM has received attention from scholars and researchers alike through their varied studies in different setups. A study conducted in USA by the General Motors Ltd, Chicago Plant (Kennedy, 2007) on the application of TQM principles in strategic human resources management practices established TQM philosophy to be important in the management of human resources functions such as training and development, employee reward system, employee relations, recruitment and selection process. According to the study TQM has been successfully used in change, innovation, conflicts and stress management among other human resources functions with its application requiring the development of an appropriate organizational culture, adoption of training programs, huge resources and effective communication systems.
According to Kerry (2005) on a study conducted at Harvard University in USA, the application of TQM philosophy in the running of training institutions is important in the management functions of planning, coordinating, organizing, decision making, control and institutional development processes. According to the study TQM had been successfully used in institutional change and innovation process and in the running of these institutes. Despite the benefits associated with it, TQM required the development of flexible culture, comprehensive training programs, and huge resources and open all round communication systems.

According to a study conducted at the National Textiles of Malaysia (Ibrahim, 2008) on the effects of the application of TQM principles in the Textile sector, TQM has been responsible for the high levels of quality, productivity, commitment, loyalty, flexibility, increased morale and motivation. In the process TQM has proved very instrumental in the improvement of performance among organizations. Two other related studies conducted in Nigeria, at Shell Oil Company headquarters in the Niger Delta (Okafor, 2009) and in France at the ELF Oil Company in Paris (Jean, 2007) on the importance of TQM in the organization development processes established that TQM helps in the building of a sound climate, culture, environment and management of conflicts and change process that are critical to effective organizational development.

According to Ojukwu (2006) on a study conducted at the Lagos state university about the challenges facing the education sector in Africa, TQM has been responsible for the high levels of quality, productivity, commitment, loyalty, flexibility, increased morale and motivation and positive identification. However when applied carelessly TQM has the potential to cause confusion, conflicts and grievances, resulting in low grades, poor college rankings and inability to register superior developments. In other countries like Kenya for instance, the use of TQM remains minimal and is largely noticed among the emerging international organizations and companies. However the application of TQM is now creeping in among the public sector organizations more so in the service provision
sector, including education, information, healthcare and tourism. In the education sector TQM is commonly used among the higher learning institutions. The use of TQM in these institutions has come under serious threat due to the managerial styles, organizational culture, technological orientation and the mode and system of communication (Oluyede, 2010).

The application of TQM has been associated more with advance and open societies and countries. Its use is more prevalent in the private sector organization than in the public sector organization. In Kenya the application of TQM is now creeping in among the public sector organization more so in the service provision sector, including education, information, healthcare and tourism. In the education sector TQM is commonly used among the higher learning institutions as universities and colleges. The use of TQM in these institutions has come under threat due to the managerial styles, organizational culture, technological orientation and the mode and system of communication in use among these institutions (Wanjiru, 2011).

Public Technical Training Institutions are spread all over the country and offer valuable training and development services in technical and non technical field. The public technical training institutions are part of the tertiary intuitions under the management of the government of Kenya. Unlike the private technical training institutions, public technical training institutions operate on the guidelines of the government agencies, use technology as guided by the government organs and are managed on the state bureaucratic cultural outfit and directed communication and management and leadership ideologies (Kihara, 2011). The private tertiary institutions operate on more flexible programs, open communications systems, state of the art technology, and more participative management styles making them sound for the adoption of TQM and associated programs. While the public tertiary institutions continue to suffer lack of competitiveness, growth, developments, change and innovations due to their leadership/management styles and cultural approach, the opposite has been noticed in private tertiary institutions that continue to reap benefits of higher performance, positive
growth, high expansion rates and favorable development efforts and high levels of stakeholder good will arising from their adoption of TQM and associated philosophies and principles (Okelo, 2012).

1.2 Statement of the Problem

Public Technical Training Institutions (PTTIs) play a significant role in the economic development of the country by training and equipping school leavers with the necessary skills, knowledge and competences required in the job market. These institutions are government funded and have several departments and a huge student, employee and lecturers’ population making them large in nature. These institutions are also spread across several ministries and their management is left to the individual ministries which lack supervisory capacity to ensure high standards of training and management. These institutions just like any other organizations that are large in nature and size are faced with managerial challenges associated with management of large organizations which include the management and utilization of human and capital resources both financial and non-financial, co-ordination of various departmental activities, meeting stakeholders demands and ensuring set quality standards are met. This has resulted in the institutions experimenting on a variety of modern management methods such as TQM so as to improve on overall performance and enhance their competitiveness in the market.

Various studies have been conducted to document factors influencing TQM use in management of organizations. For instance, Ngware, Wamukuru & Odebero (2006) studied TQM in secondary schools in Kenya and found out that Board of Governors and chairpersons in secondary schools were not providing the necessary leadership that would promote TQM practices necessary for schools’ continuous improvement. However, some head teachers were providing the required leadership with a considerable number of school managements empowering their employees and majority of schools were not committed to strategic quality planning, though they did promote human resource development initiatives. Iseu (2013) established that there existed a significantly strong
positive correlation between extent of participation, top management commitment, school

culture, capacity building and experience and heads of departments’ participation in
TQM among secondary schools in Makueni County, Kenya.

Despite having many studies in this area, the results cannot be applied to any other
organization such as technical training institutions due to contextual differences. The
study sought to establish the influence of various factors to TQM use in the management
of public technical training institutions; it was guided by the following study question.
What are the factors influencing the use of TQM in the management of Public technical
training institutions in Nairobi county?

1.3 Purpose of the study

The purpose of this study was to establish factors influencing the use of Total Quality
Management in the management of Public Technical Training Institutions in Nairobi
County.

1.4 Objectives of the Study

The objectives of the study were:

i. To examine how employee involvement influence the use of TQM in the
management of PTTIs in Nairobi County.

ii. To determine how employee training influence the use of TQM in the
management of PTTIs in Nairobi County.

iii. To establish how technology influence the use of TQM in the management of
PTTIs in Nairobi County.

iv. To establish ways in which resources availability influence use of TQM in the
management of PTTIs in Nairobi County.
v. To establish how communication systems influence the use of TQM in the management of PTTIs in Nairobi County.

1.5 Research questions

The research sought to answer the following questions:

i. In what ways does employee involvement influence the use of TQM in the management of PTTIs in Nairobi County?

ii. To what extent does employee training influence the use of TQM in the management of PTTIs in Nairobi County?

iii. How does technology influence the use of TQM in the management of PTTIs in Nairobi County?

iv. How does resources availability influence the use of TQM in the management of PTTIs in Nairobi County?

v. How does a communication system influence the use of TQM in the management of PTTIs in Nairobi County?

1.6 Significance of the study

The findings of this study are of importance to a number of groups and individuals. The study may give College Principals and Heads of departments (HODs) responsible for TQM implementation an insight into factors influencing use of TQM in management of Tertiary institutions and their overall influence on students and staff performance. The policy makers may obtain knowledge of factors influencing use of TQM in management of Technical Training Institutions. They may therefore obtain guidance from this study in designing appropriate policies that will enhance management of technical training institutions and the feedback obtained from the respondents may be used as measurement scale to assess the success of TQM in other Colleges. The study
will also provide reference to further empirical studies into other factors influencing use of TQM in organizations. This may assist other researchers in their work.

1.7 Delimitation of the study

The study targeted public technical training institutions in Nairobi County only. The respondents of the study included twenty four (24) HODs and one hundred and twenty eight (128) lecturers.

1.8 Limitations of the study

Some of the HODs were not available for the interviews because they were busy this forced the researcher to reschedule the interviews extending the data collection period also some of the lecturers were not available during the entire period questionnaires were to be completed and returned. The researcher had to distribute more questionnaires so as to obtain the required data.

1.9 Assumptions of the study.

In conducting this study various assumptions were made. The organizations, public technical training institutions in Nairobi County, selected for the study had adequate and comprehensive TQM program in use. The population selected for the study provided the relevant and correct data required for the study. That the sample selected for the study provided the most comprehensive, adequate and representative responses for the study. The data collection instruments employed resulted in adequate, correct, relevant and up to date data. That the time period of three months, earmarked for the study, to be adequate to complete the study tasks. The budgeted costs for the study to be enough in conducting the research as stipulated. Finally the study was premised on the assumption that the methods to be used in data analysis will results in correct and relevant findings and conclusions about the study.
1.10 Definition of significant Terms used in the study.

**Communication system:** The system through which institutions use in transferring and sharing of ideas, knowledge, information and understanding, among the various individuals, groups, units, or departments.

**Employee Involvement:** A system through which institutions allow direct or indirect employees participation and inclusion in key decision making processes and implementation.

**Employee Training:** The process, continuous or one time, through which institutions equip employees with the necessary skills, knowledge, abilities, capabilities and competencies to enable them undertake their duties and responsibilities effectively.

**Resources availability:** The abundance and readiness in utilization of the human, technical, financial and technological properties held by the institutions.

**Technology:** The techniques, equipments, procedures, systems, processes, comprising of technical (electronic) and non technical elements (manual) used by an institution in their management activities and operations.

**Tertiary institutions:** Institutions such as youth polytechnics, institutes of technology, technical training institutes, and National
Polytechnics that offer training of various courses at diploma and certificate levels.

**Total Quality Management:** It is a management philosophy that aims at continuous improvement and learning in an institution and focuses on employees’ participation and involvement at all levels and satisfaction of customers and stakeholder requirements.

1.11 Organization of the study

This study is organized into five Chapters; Chapter One consists of introduction of the study. It presents the background of the study, statement of the problem, purpose of the study, research objectives and questions, significance of the study and delimitations of the study. It concludes with the limitations and assumptions of the study and the significant terms used. Chapter Two presents literature review capturing employee involvement, employee training, technology, and resources availability and communication systems. Chapter Three dwells on research methodology. This includes introduction, research design, Target population, sample size and sampling procedure, research instruments, data collection methods, pilot testing, validity and reliability and operational definition of variables. Chapter Four presents data analysis interpretation and discussions while Chapter Five presents summary, conclusion and recommendations arising from the study.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The chapter consists of review of existing literature on the topic of study. It focuses on Total Quality Management (TQM) principles and approaches, use of TQM in institutions, factors influencing the use of TQM in management of institutions among them employee involvement and training, technology, resource availability and communication systems. The conceptual framework and finally a summary of the literature review.

2.2 TQM programs, principles and approaches

TQM is a management approach for an organization, centered on quality, based on the participation of all its members and aiming at long term success through customer satisfaction and benefits to all members of the organization and to the society (ISO 8402, 1994). TQM was developed by Edwards Deming, who had experiences in the US industry and began his experiment about TQM during and before the Second World War. This management method began in USA but was further refined by the Japanese industry. That time TQM was just important for the industrial sector (Saleki, Sabet, Roumi & Dezfoulian, 2012).

The development and adoption of TQM among organizations has sometimes been difficult due to the attitudes and perceptive tendencies of the stakeholders. Where it has been successfully adopted and applied TQM has resulted in positive improvement in the management of an organization through effective organizational design, performance, decision making, planning, organization, coordination and control. The adoption and application of TQM has also resulted in an organization gaining more positive image thus becoming highly competitive. TQM’s successful adoption and application results in high morale, motivation, positive viewing of the organization, more flexibility, innovation and
creativity as well as loyalty and commitment by both customers and the employees. However the successful use of TQM has varied challenges associated with organizational culture, levels of training, technology and business environment (Mcshane, 2008).

TQM and its associated principles of quality culture and employee empowerment, participation, group decision making, and open communication systems among other variables create positive work environment in an organization and foster a friendlier, collaborative and cooperative relationships and open communication among the stakeholders however TQM might be difficult to apply in small organization, due to bureaucratic tendencies, lack of appropriate technology, better communication systems and relationship patterns. Despite the numerous benefits of TQM application it has proved hard to effect its belief among the public sector organizations due to its demand for openess, high levels of training and development, electronic type of technology and strict involvement and empowerment programs (Koontz, 2010).

According to Mullins (2009) the emergence of TQM in the management field has tremendously changed policies, procedures and rules, technology used and administrative or managerial styles. TQM is based on the premise of the Japanese participative style, management objective philosophy, customer focus and continuous improvement policy among other core principles. The introduction of TQM principles in an organization requires constant design and redesign that ultimately improve organizations effectiveness. Its use in management of organizations requires the development of conducive climate, environment, and culture that permits risk taking, achievement oriented and permits participation and constant empowerment through sustainable improvement in quality and customer focus.
2.3 Uses of TQM in an Organization

TQM and its underlying principles of employee empowerment, involvement and participation, quality culture, and continuous and sustainable improvement have completely revitalized the ways organization used to be managed. The concept has injected an atmosphere associated with flexibility, autonomy, freedom and independence, high levels of innovation, loyalty, creativity and changed mentalities and strategic version of organizational viewing. This way TQM has excelled in improving productivity, profitability, customer satisfaction and the overall performance of an organization (Mcshane, 2008). TQM has also been very useful in the management of functional dimensions of an organization. It is used in the management of human resources, sales and marketing, operations and production, research and development, technology and administration. In all these functional areas TQM has proved to be of critical importance in eliciting flexible, stimulating and interesting and more economical programs (Mullins, 2009).

According to Kettler (2012) on a study of the benefits and capabilities of TQM as an organizational practice and management tool, TQM has a variety of uses in an organization among them training and development, employee relation and reward disciples in the human resources management, customer and stakeholder analysis in the marketing management, and organizational design and redesign in the administrative and managerial spheres. It has also been of use in the management of quality, productivity, growth and competitiveness, efficiency and effectiveness. According to the study TQM has resulted in the development of strategic planning, growth, decision making, effective work design through job enrichments and enlargements and continuous control and team working arrangements. It has also been of use in the communication, leadership and general management aspects. The application of an open all round communication, participative group leadership systems and flexible managerial systems has also been associated with the use of TQM. The management of change, conflicts and stress among other issues in an organization has also greatly benefited from the TQM related activities and practices.
2.4 Factors influencing the use of TQM in Management of institutions

The factors that influence use of TQM in management of institutions are drawn from TQM principles and from different authors and researchers who have studied the subject. According to Kasongo & Moono (2010) leadership, employee involvement and empowerment, technology, communication, managing suppliers and continuous improvement are among the important factors influencing successful application of TQM in Zambia tourism sector, while Ahmed & Ali (2012) on a study about implementing TQM practices in Pakistani Higher Education institutions listed stakeholders’ focus, recognition and reward, measurement and evaluation, process control and improvement, resources, leadership and empowerment as the main factors determining TQM implementation in business schools of Pakistan. This study sought to establish how some of this factors among them; employee involvement, employee training, technology, resource availability and communication systems, influence the use of TQM in the management of Public technical training institutions in Nairobi County.

2.4.1 Employee Involvement and use of TQM in management

TQM as a practice requires sound employee involvement and participation. Employee involvement and participation programs in an organization work to increase the levels of morale, motivation and identification of the employee with the organizations strategies, goals and objectives. While lack or no involvement of employees in the business programs, operation and systems contributes towards increased apathy, low enthusiasm and negative viewing of the organizations programs in the process resulting in decreased effort, energy and interest. Adequate employee involvement through such programs as suggestion systems, quality circles, and T group sessions are direct in approach and influence the use of TQM programs in organizations. Employee involvement especially among training institutions have had mixed results. Where the involvement has been direct and in line with the training policies the outcomes have proved favorable and positive. On the other hand those institutions where employee involvement is remotely practiced there have been more negative outcomes associated with strikes, go slows and general conflicts and complaints (Kacmar, 2008). Lectures’ involvement in the
management of institutions through either suggestion schemes, quality circles, task forces or special assignment groups works to improve their morale, motivation and commitment towards these institutions.

According to Mcshane (2008) the success of TQM programs in an organization depends on the degree of employee involvement programs practiced by an organization. Employee involvement may be direct or indirect in nature and whatever the nature, employee involvement program contributes towards increased innovation, creativity, loyalty, commitment and effort among the employees. Involvement also contributes to increased satisfaction, positive attitude and increased identification with the organization. The ability of an organization to effect the changes, manage its programs and plan accordingly depends on the culture and nature of employee involvement practiced in an organization. Those organizations with direct involvement programs perform highly than those without.

According to Institute of Human Resource Management of Kenya (IHRMK 2012), employees’ involvement direct or indirect contributes towards increased interest, energy, effort, and motivation and may be used as non financial reward thereby positively resonating with TQM programs. Involvement further results in increased motivation, morale, positive attitude and perceptions towards the goals and objectives of the firms and works towards increased pace of change and innovation. The real and perceived values of TQM and its associated programs and principles can be effectively and sufficiently be undertaken in an environment of openness, close attention, interest in the welfare and possible consideration of the individual good. According to Odongo (2011) on the role of employee involvement in the management of organization today, employee involvement results in more benefits, capabilities and advantages to those organizations practicing it. Most organizations in Kenya, especially public service organizations, do not value the doctrine of employee involvement in the management of their resources and programs. The study established that involvement programs are not easy to enforce
requires a fundamental rethinking of culture, constant design and redesign of organization program and adoption of a more flexible structural approach.

**2.4.2 Employee Training and use of TQM in management**

The use of TQM in any organization depends much on the skills, knowledge, abilities, capabilities, capacities and competencies its Human resources. Training provides and equips the employees and other stakeholders with the right skills, abilities, capabilities competencies and knowledge to help them undertake their current duties and in the future. Effective training and development programs enhance the use of TQM in an organization and contributes to increased performance, growth, developments, survival prosperity and success for any organization. The capabilities accruing to an organization arising from training programs comprise of increased flexibility, productivity, quality, commitment, loyalty, satisfaction, positive viewing of the organization, effectiveness and efficiency. Training also works towards reduced conflicts, complaints, cost of operation, redundancy and wastages of time and resources. The mere dimension of training as an empowerment tool aid to communication, and its ability towards increased participation, quality and development of better attitudes and perceptions make it ideal as a source of TQM program (Torrington, 2008).

There is a unanimous concurrence that training and development systems form an essential ingredient in the use of TQM in the management of organizations. Training works to empower the employees and other stakeholders and creates a credible but interesting work atmosphere, climate and environment. The application of, rigid, narrow, onetime, non objective based trainer centered and individual based training programs would be least useful in the adoption of TQM in organization this kind of training and development programs works towards reduced quality, satisfaction, productivity, and general interest of the employees and the other stakeholders in the process negating against the TQM programs. In this respect the development of all comprehensive
programs that is trainee centered in approach and flexible in character demands huge resources, constant design and redesign programs and technology (Kinicky, 2012).

According to International Labor Organization (ILO 2011) the effective use of TQM programs is contingent on the level of skills, competencies, knowledge and capabilities among the employees. Organizations with adequate comprehensive and flexible, continuous and trainee centered training programs have excelled in their management and administrative duties and responsibilities. However many organization are not able to obtain the facilities, resources and technology required for the training and development efforts geared towards the requirements of TQM and associated principles. This can be attributed to lack of training resources and facilities that make them unable to use and adopt TQM principles in their management and administrative functions. This has contributed to failures of more TQM programs in the process making it vulnerable and unwanted (Armstrong, 2005).

**2.4.3 Technology and use of TQM in management**

Effective use of TQM programs in any organization depends entirely on the technological orientation. The adoption of modern technological orientation with electronics dimensions works to enhance the use of TQM. The use of computerized technology allows for high levels of innovation, flexibility, creativity, information and knowledge sharing among other important antinodes. Computer based technology systems with its myriads of technologies work to make the employees more motivated, committed and with specified but directed efforts. Computerized information systems compared to manual systems of technology are slow, cumbersome, less effective and costly to operate. Such technological orientation reduce the efforts of the employees, making them more frustrated, less flexible and unable to make quick and reasonable adjustments and are unfavorable in the use of TQM programs. The manual technology has no room for the innovative and change processes and is slow in the provision of information (Coulter 2010).
The nature and type of technology adopted by an organization has a great bearing on the use of TQM in the management of organizations. The management of current organizations demands a technological orientation that provides accurate, correct, realistic, flexible information and in simple and a timely manner, which provides for adequate innovations and change. Computerized technological orientation based on the electronic commerce systems provides an ideal ground and duly supports the TQM programs. The computer based technology with its many tools as information systems, data bases, artificial intelligence technologies provides the environment and climate for the planning and implementation as well as the evaluation of TQM programs in any organization. However many organizations in the worlds over still use the manual and traditional technologies in their planning, decision making, control, and coordination duties and responsibilities this scenario can be blamed on preoccupation with the manual technology and a number of factors including costs of the machinery and equipments, lack of training facilities and the culture of the organizations (Laudon & Laudon, 2008).

According to Lucy (2010) technology has been the most important factor influencing the use of TQM programs and demands flexible, innovative, creative and open approaches to work with clear but informal relationships and communication and the current technology based on the computerized approach provides all these tools in earnest thereby enhancing the use of TQM. The notion that organization demands quality speed and accuracy in the service of their clients also resonates well with the modern technology. According to the author not many organizations are computerized and networked making them vulnerable and susceptible to the full use of TQM and its associated philosophies thus TQM is more popular in private sector organization than in public sector due to the high levels of bureaucracy, rule based approaches and rigid programs among the public sector organization.

According to Communication Commission of Kenya (CCK 2011) the use of TQM in the management of organizations in Kenya and elsewhere in East Africa has not been
successful owing to lack of structural and cultural orientations supportive of its ideals. Majority of the organizations in the region are rule based, lack flexibility and innovative approaches to function and above all have no required technological breakthrough that suits the TQM ideals and principles of constant empowerment, high level of participation and involvement, quality culture orientation and open but all round communication systems.

Kiiru (2011) on a study about the role of technology in employee empowerment, involvement, communication and participation established that technology has significant influence on the use of TQM programs in an organization. According to the study technology enhances relationships, communication, meetings and face to face discussions enhancing positively the use of TQM programs and adoption of modern computer based technology among organizations using TQM approaches in their management programs and operation. The use of TQM programs in any organization depends very much on the ability of the organization to effect new and modern approaches to management associated with participation, information sharing, innovation faster and reliable customer services and satisfaction.

2.4.4 Resources availability and use of TQM in Management

TQM and its related philosophies and principles embodied on participation and involvement, openness in communication, management and decision making and constant empowerment through adequate programs, needs the presence of abundant resources. This includes technological, financial, economic and human resources. The use of TQM in management depends not only on the abundance but also on the quality and correctness of the resources. For effective application and use of TQM programs the employees (human resources) must have the right caliber of skills, abilities, competencies knowledge and abilities. The employees must also exhibit an extreme level of flexibility, innovation, commitment and loyalty as well as creativity, superior knowledge and understanding of the organization and its environment and climate. Additionally there must adequate and correct infrastructure that has the prerequisite potential to motivate the
stakeholders of the organization towards higher achievements and performance (Kinicky, 2011).

The presence of financial resources would be desirable in the provision of rewards, acquisition of materials, equipment, technology and undertaking transactions and dealings necessary for the organizations operations, processes and systems. In the presence of well trained and developed human resources, adequate funds and finances, good infrastructure, the organizations would initiate, plan, implement and evaluate the TQM programs (Cole, 2008). According to Kenya Technical Training Institute (KTTI 2012) the nature, abundance and availability of resources held by an organization have an influence on the use of TQM in organizations. The effective and correct use of TQM programs especially in planning, decision making, coordination and control systems require the presence of the correct type and nature of resources.

The Availability of resources determines the nature and quality of manpower, machinery, equipments, technology and structures and innovations, change and creativity programs. More resources with the correct characteristics and features increase the possibility of success in the organizations. Conversely less resources with wrong characteristics or features reduces the ability of the organizations to conduct its operation, programs and systems adequately and abundantly. Organizations with success stories in the use TQM have exhibited the characteristics associated with huge, flexible, high quality committed and specialized resources. These organizations have also been more innovative and creative approach with greater degree of interdependent (Armstrong, 2005).

2.4.5 Communication systems and use of TQM in management

There has been a debate among scholars and management experts as to the relevance of effective communication systems in the application and use of TQM programs in the management and other organizational processes. Majority of the scholars and experts
have been of the view that effective communication has a great and tremendous influence in the use of TQM programs with the minority being of the view that communications systems has no influence on the application of TQM programs within any organization. The proponents of this school of thought agree that communications systems pays an important and critical role in the initiation, planning implementation and evaluation of TQM programs in any organization. Effective communication helps in the use of TQM through planning, organization, coordination, decision making, and control mechanisms (Mullins, 2008). The benefits of a communication system in institutionalizing TQM program can only be realized in an environment with a more open, trustful and comprehensive communications systems (Schemmerborn, 2009).

According to Dessler (2008) the influence of a communication system on TQM use is contingent on the type and nature of the systems. An open communication system that is all round in dimensions and approach enhances the application of TQM programs that allows for effective and all time information sharing, frank discussions, sharing of ideas, knowledge and experiences works to stimulate positive beliefs among the stakeholders thereby increasing the effective application of TQM use. Conversely the presence of a closed one way communication system increases frustrations, complaints and grievances among the stakeholders thereby working against the key principles and ideologies of TQM. The application of a formal vertical communication system makes the organization highly bureaucratic, rigid and unfavorable to most of the stakeholders.

Boela (2010) on a study of TQM in service provision industries established that effective use of TQM programs among the services provision organizations requires better and more credible communication systems that is open all round. Effective communication enables the clarification of issues allowing adequate planning, decision making and control. It also makes the organization more flexible in its primary and secondary roles. According to the study developing an all open communication in an organization may be difficult owing to the demands on the resources, time and organizational structural design.
and demands the use of experts, specialized machinery, equipment and creation of a conducive environments and climate within an organizational context. The creation of all these variables in pursuit of effective communication would require an organization to expend more resources, energy and efforts in the process making it more dysfunctional in status.

A study by the Kenya Institute of Management (KIM 2011) on the relevance of TQM in the development of organizations programs established that TQM changes the way organizations are managed, administrated and led and brought the need for more flexible systems of work and organizational design, informality in relationships and operation, team working approaches and information sharing prospects. According to the study effective use of TQM programs like empowerment, quality culture and participative style of management requires the presence of sound and effective communications systems. The success of TQM program depends on the nature of the communications systems adopted by an organization. High success factors associated with TQM programs are contingent on the application of open, respectful, trustful and truthful messages coming across the organization.
2.5 Conceptual Framework

Independent variables

**Employee Involvement**
- Involvement Policies
- Quality circles teams
- Special assignments groups
- Suggestion schemes programs

**Employee Training**
- Training policies
- Training & development programs
- Training facilities
- Budget allocations for training

**Technology**
- Policies governing the use of technology in the institutions
- Presence of an information management system
- Technological innovations available
- IT infrastructure available

**Communication Systems**
- Communication procedure manuals
- Communication channels
- Feedback systems

**Resources Availability**
- Policies on resources utilization
- Highly trained personnel
- Physical facilities and equipment available
- Funds available

Intervening variables

Dependent variable

Use of TQM in Management of Institutions
- Quality statement
- A functional quality department
- Policies allowing for employees' involvement & participation
- Reward system for quality achievements

Top Management Commitment

Figure 2.1: Conceptual framework
2.6 Summary of Chapter Two

The literature reviewed indicate that TQM as philosophy of management has proved to be important and useful in the management of organizations. Where it has been successfully used TQM has enhanced management performance through improved flexibility, commitment, loyalty, quality, productivity, and competiveness among other benefits. Conversely where it has been used haphazardly TQM has been responsible for decline in growth, prosperity, survival with increased conflicts, complaints and grievances among other things. In the management of organization TQM has been used in planning, organizing, decision making, control and coordination, it has also been very useful in the core functional areas of marketing, human resources, productions and operation, administration and leadership, technology and supplies and procurement functions where it has continued to introduce new dimensions of work design and integrations.

The use of TQM in the management of organization is influenced by a set of factors including level of skills, knowledge and competencies among the employees, the nature of organization structure and culture, the communications systems, the nature and type of resources available, technology organizational climate and business environments. A more comprehensive and open but all round communication system enhances the use of TQM. TQM use is also associated with employee involvement, modern technological orientation, continuous training and development and availability of resources.

The literature reviewed also indicated that organizations with closed communication systems, one time training schedules, traditional technology, lack employee involvement programs and lack adequate resources are prone to challenges in the use of TQM in management. This study therefore seeks to establish how these factors among them employee involvement, employee training, technology, resource availability and communication systems influence the use of TQM in the management of Public Technical Training Institutions in Nairobi County.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction
The areas covered in this chapter are research design, target population, sample size and sampling procedure, research instruments, methods of data collection, pilot testing, validity and reliability, methods of data analysis, ethical considerations and operational definition of variables.

3.2 Research Design
The study adopted a descriptive survey design. This enabled the researcher to collect data from the respondents in order to determine the current status of the population with respect to the study variables. There are two ways of collecting data from a population using the descriptive survey design: cross-sectional survey and longitudinal survey. Cross-sectional survey is used to gather information on a population at a single point in time while longitudinal survey gathers data over a period of time. Cross-sectional survey was used due to the limited time allocated for the research study.

3.3 Target Population
The study targeted seven hundred and sixty (760) teaching staff comprising of one hundred and twenty (120) Heads of Department (HODs) and six hundred and forty (640) lecturers in the Public technical training institutions in Nairobi County. According to the latest census conducted by the Ministry of Higher Education Science and technology (MOHEST) in the month of November 2012, there thirteen (13), public technical training institutes located in Nairobi county with a total population of seven hundred and sixty (760) teaching staff as presented in table 3.1.
Table 3.1: Table of Target Population

<table>
<thead>
<tr>
<th>Category of the Target Population</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of Departments (HODs)</td>
<td>120</td>
<td>16%</td>
</tr>
<tr>
<td>Lecturers</td>
<td>640</td>
<td>84%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>760</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

3.4 Sample size and sampling procedure

The study adopted a stratified random sampling design and then Simple random sampling was used to select the HODs and lecturers to participate in the study. The use of the stratified random sampling method was informed by the fact that the population of the study was capable of being categorized into distinctive groups or strata as HODs and Lecturers. According to Mugenda (2010) a sample ratio of fifteen percent (15%) and above has the capability to produce the most representative, relevant and correct data for the study. The choice of the sample size was also dictated by the characteristics of the population. When the population is so large the sample ratio must be small to produce an affordable sample for the study. Conversely when the population is small the sample ratio must be large enough to produce a reasonable sample for the study (Kothari, 2003). Guided by these factors a sample ratio of 20% was used to sample the target population resulting in a sample size of twenty four (24) HODs and two hundred and fifty six (256) lecturers.

Table 3.2: Table of Sample Size

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Frequency</th>
<th>Sample ratio</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heads of Department</td>
<td>120</td>
<td>0.2</td>
<td>24</td>
</tr>
<tr>
<td>Lecturers</td>
<td>640</td>
<td>0.2</td>
<td>128</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>760</strong></td>
<td><strong>0.2</strong></td>
<td><strong>152</strong></td>
</tr>
</tbody>
</table>
3.5 Research instruments

Both qualitative and quantitative data was collected. An interview guide and a questionnaire were used in the data collection process.

3.5.1 Interview guide

The interview guide was used in the collection of data from the HODs this is due to the fact that the interview guide provided an opportunity for further probing of the variables under study thus providing additional information that was useful for the study.

3.5.2 Questionnaire

The questionnaire was administered to the lecturers. The questionnaire was preferred in this study because the respondents included in the study were able to adequately respond to questions asked due to their level of education. According to Mugenda & Mugenda (2003), questionnaires are commonly used to obtain detailed information about a population under study.

3.6 Data Collection methods.

Data was collected using questionnaires that were accompanied with a cover letter from the researcher requesting for participation in the study and were delivered to the lecturers’ place of work so that they can be filled in and then collected later. This method of drop and pick later was used so as to allow lecturers who were busy that day to participate in the study by filling the questionnaire later. The interview guide was administered to the HODs through face to face interviews, this is because they are responsible for TQM use in management of their institutions and further probing through use of interview guide provided additional information.
3.7 Pilot testing

Before being administered to the respondents the data collection instruments comprising of interview guide and questionnaire were tested for validity and reliability. A pilot study was conducted by the researcher to determine the reliability and validity of data collection instruments. One percent (1%) of the Target population was used as the sample size for the pilot study as suggested by Mugenda & Mugenda (2003) therefore Two (2) HODs and seven (7) lecturers constituted the sample size for the pilot study. The instruments were administered to the respondents and the information obtained analyzed and used to revise the research instruments to ensure that they clearly captured the variables under study allowing for generalization to the entire population. The pilot data was not included in the actual study.

3.7.1 Validity of the instruments

To validate the research instruments the researcher sought the opinion of experts in the field of study especially the lecturers and the supervisor on content clarity, ambiguity and level of language used so as to ensure the interview guide and questionnaire measure the variables intended for the study. The suggestions provided were used to make the necessary revision and modification of the research instrument thereby enhancing validity.

3.7.2 Reliability of the instruments

Reliability enhances dependability, accuracy, clarity and adequacy of the instruments. To check the reliability of the instruments Test-retest method was used, this method involved administering the same test twice to the same group after a week. The scores of the pilot test were then summarized and correlated using Karl Pearson’s product moment correlation which establishes the degree of scatter in a relationship and its strength. The less scattered the variables the stronger the relationship, if r represents the product moment coefficient. The value r lies between -1 and +1.
\[ r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{N\Sigma X^2 - (\Sigma X)^2} \sqrt{N\Sigma Y^2 - (\Sigma Y)^2}} \]

Where:

N= number of respondents

X= results of the 1st test

Y= results of the 2nd test

The correlation for the pilot study was 0.93 for the questionnaires and 0.88 for interview guide which was considered to have a strong positive correlation among the different responses this indicated that the instruments were reliable. According to Mugenda & Mugenda (2003) a coefficient of 0.80 or more implies that there is a high degree of reliability of the data.

3.8 Data analysis methods

Before analysis, the data obtained was prepared through editing, coding, classification and tabulation. This was done to eliminate any wrong or incoherent data which might have resulted in drawing wrong conclusions or making inappropriate inferences. Quantitative data analysis involved listing and coding open-ended data, which together with pre-coded quantitative data was digitalized using SPSS package and Ms excel while qualitative data analysis involved organization of data under key thematic areas; which was followed by data description, interpretation and triangulation. Both quantitative and qualitative data was then presented using tables, frequencies and percentages.
3.9 Ethical considerations

In conducting the study various ethical issues were put into consideration, particularly in regard to, data collection, treatment of the respondents before, during and after the study, as well as the application of the data used and the outcome of the study. The researcher treated the respondents with high levels of respect. The respondents were requested to participate in study by providing necessary data and no force or coercion was used to generate data from the respondents. The data obtained was only used for the purpose specified, that is research purposes only.

3.10 Operational definition of variables

The table below shows the variables in the study, their indicators how they were measured and data analysis techniques used.
Table 3.3: Operationalization of variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of variables</th>
<th>Indicators</th>
<th>Measurement</th>
<th>Measurement scale</th>
<th>Data analysis method</th>
</tr>
</thead>
</table>
| Use of TQM in the management of PTTIs | Dependent | - Quality statement  
- Policies allowing for employees' involvement and participation  
-Reward and recognition system for quality achievements | -Effectiveness of TQM use in management as shown by records, observations and responses | Nominal | Descriptive statistics, percentages |
| Employee involvement and use of TQM in the management of PTTIs | Independent | -Special assignment groups  
-Individual performance targets  
- Quality circle teams  
-suggestion scheme programs | -Level of involvement and participation | Ordinal | Descriptive statistics, percentages |
| Employee Training and use of TQM in the management of PTTIs | Independent | -Training & development policies  
-Training and development | -The level of skills and competencies attained  
- The number of | Ordinal | Descriptive statistics. Percentage s |
<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of variables</th>
<th>Indicators</th>
<th>Measurement</th>
<th>Measureme nt scale</th>
<th>Data analysis method</th>
</tr>
</thead>
</table>
| Availability of resources and use of TQM in the management of PTTIs | Independent | -Quality teaching and learning materials  
- Adequate physical facilities and equipments  
-A Quality | -Level of academic qualifications  
- Effectiveness of resources deployed | -Ordinal | - Descriptive statistics, percentages |
| Communication and use of TQM in the management of PTTIs | Independent | - Communication procedure manuals  
Availability of effective channels of communication  
Feedback systems | -Effectiveness of communication system | -Ordinal  
Descripive analysis, frequency distribution, percentages |
CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This Chapter presents the results and findings based on the research objective of the study whose objective theme was to establish factors influencing the use of TQM in the management of Public Technical Training Institutions in Nairobi.

4.2 Questionnaire Return rate

Out of the 128 questionnaires sent out, 79 were returned completed giving a 62% response rate and 21 out of 24 Heads of department were interviewed giving an 88% response rate and a combined response rate of 66%. The combined response rate of 66% was due to the fact that some questionnaires were not returned completed and on time and some of the HODs were busy during the period and thus could not be interviewed.

4.3 Background of the respondents

This section sought to find out distribution of respondents by nature of courses handled, students handled, years of experience and level of education.

4.3.1 Distribution of respondents by nature of courses handled

The respondents were asked to indicate the nature of courses they handled. The following responses were provided as presented in Table 4.1
Table 4.1: Distribution of respondents by nature of courses handled

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>13</td>
<td>16.5</td>
</tr>
<tr>
<td>Diploma</td>
<td>25</td>
<td>31.6</td>
</tr>
<tr>
<td>Both Diploma &amp; Certificate</td>
<td>41</td>
<td>51.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The results indicates that majority of the respondents 51.9% handled both diploma and Certificate courses with 31.6% of the respondents handling diploma courses while 16.5% of the respondents were only handling certificate courses.

These findings showed that majority of the respondents were multi-skilled and could handle courses offered in the colleges adequately. This also showed that the respondents clearly understood the variables under study which were management related.

4.3.2 Distribution of respondents by number of students handled

When asked to state the average number of students they commonly handled respondents provided the following responses as presented in Table 4.2
Table 4.2: Distribution of respondents by number of students handled

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 150</td>
<td>9</td>
<td>11.4</td>
</tr>
<tr>
<td>150-250</td>
<td>21</td>
<td>26.6</td>
</tr>
<tr>
<td>251-350</td>
<td>35</td>
<td>44.3</td>
</tr>
<tr>
<td>Over 350</td>
<td>14</td>
<td>17.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From the results provided in the Table 4.2 above 60% of the respondents handled 251 students and over, among this category of respondents’ 44.3% handled between 251 to 350 students with 17.7% handling over 350 students and 40% of the respondents handling up to 250 students. This finding indicates that majority of the respondents handled more than 250 students while the minority handled less than 250 students.

4.3.3 Distribution of respondents by years of experience

When asked to indicate the years of experience in the lecturing profession, respondents provided varied responses as presented in Table 4.3
Table 4.3: Distribution of respondents by years of experience

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5 Years</td>
<td>8</td>
<td>10.1</td>
</tr>
<tr>
<td>5-10 Years</td>
<td>12</td>
<td>15.2</td>
</tr>
<tr>
<td>11-15 Years</td>
<td>26</td>
<td>32.9</td>
</tr>
<tr>
<td>16-25 Years</td>
<td>29</td>
<td>36.7</td>
</tr>
<tr>
<td>Over 25 Years</td>
<td>4</td>
<td>5.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From the results in Table 4.3, majority 74.7% of the respondents had experience of more than ten years, 32.9% of the respondents had served in the lecturing profession for a period ranging between 11-15 years while 36.7% had served for a period ranging between 16 to 25 years, with another 5.1% serving in the lecturing profession for more than 25 years. While 25.3% of the respondents indicated to have served in the lecturing profession for a period of less than ten years.

This finding indicates that majority of the respondents had enough experience to enable them understand the managerial challenges in their institutions. This was very useful to the study since the respondents responded well to the questions raised in the questionnaire and interview guide and articulated the views and perspectives required of the TQM.

4.3.4 Number of years as Head of Department (HOD)

The respondents were requested to state the total number of years they had been the HODs and the results were presented in Table 4.4
Table 4.4: Number of years as HOD

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5 Years</td>
<td>2</td>
<td>9.5</td>
</tr>
<tr>
<td>5-10 Years</td>
<td>15</td>
<td>71.4</td>
</tr>
<tr>
<td>11-15 Years</td>
<td>4</td>
<td>19.0</td>
</tr>
<tr>
<td>16-25 Years</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>over 25 Years</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.4 indicates that 9.5% of the respondents had been HODs for less than 5 years while majority 71.4% of the respondents had been HODs for a period ranging between 5 to 10 years and 19% between 11-15 years. This showed that the HODs had served for long in their current positions and clearly understood the management methods used in their institutions.

4.3.5 Distribution of respondents by Level of Education

As shown in Table 4.5, over 81% of the respondents had attained Post college level of education with only 19% of the respondents indicating to have attained college level of education.
Table 4.5: Distribution of respondents by Level of Education

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>15</td>
<td>19.0</td>
</tr>
<tr>
<td>University</td>
<td>37</td>
<td>46.8</td>
</tr>
<tr>
<td>Post graduate</td>
<td>27</td>
<td>34.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding indicates that the respondents had more knowledge and capacity to handle the questions raised in the research instruments due to their level of education.

4.4 Institutional Profile

This section sought to know the number of years the colleges has been in existence, the student population and changes in the number of lecturers over the last ten years.

4.4.1 Number of years the college has been in existence

The respondents were asked to indicate the number of years their institutions had been in existence with the majority 90% of the respondents indicating that their institution had been in existence for more than ten years while the rest had a combined percentage of 10.1%. The results are presented in Table 4.6.
Table 4.6: Number of years the college has been in existence

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 1 year</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>1-5 Years</td>
<td>3</td>
<td>3.8</td>
</tr>
<tr>
<td>5-10 Years</td>
<td>5</td>
<td>6.3</td>
</tr>
<tr>
<td>Over 10 Years</td>
<td>71</td>
<td>89.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding show that majority of the PTTIs had been in existence for over ten years and thus the institutions administration were aware of various management methods used over the years in response to solving arising managerial challenges.

4.4.2 Students Population

The respondents were requested to indicate the approximate number of students in their institutions and their responses presented in table 4.7
Table 4.7: Population of students in the college

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 250</td>
<td>16</td>
<td>20.3</td>
</tr>
<tr>
<td>250-500</td>
<td>21</td>
<td>26.6</td>
</tr>
<tr>
<td>500-1000</td>
<td>25</td>
<td>31.6</td>
</tr>
<tr>
<td>Over 1000</td>
<td>17</td>
<td>21.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.7 indicates that the majority 79.7% of the PTTIs had more 250 students with 20.3% having less than 250 students. The finding shows that these institutions have a large student population and may be faced with managerial challenges associated with managing large organizations.

4.4.3 Changes in the number of lecturers over the last ten years

The respondents were required to state the observed changes in number of lecturers over the last ten years with majority 20.3% of the respondents indicating an increase in number of lecturers and 32.9% indicating a decrease in number of lecturers while 46.8% saw no change in number of lecturers over the period as shown in Table 4.8.
Table 4.8: Changes in the number of lecturers over the last ten years

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased</td>
<td>16</td>
<td>20.3</td>
</tr>
<tr>
<td>Decreased</td>
<td>26</td>
<td>32.9</td>
</tr>
<tr>
<td>Remained constant</td>
<td>37</td>
<td>46.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding indicate that 46.8% of the lecturers had been teaching in their respective institutions for long this was attributed to the fact that lecturers were allowed to teach in more than one institution this was beneficial to the research study because the respondents were able to understand the management methods applied in the various PTTIs they taught this also enabled them to clearly respond to the questions raised.

4.5 Use of TQM in the Management of Technical Training Institutions

This section required the respondents to state whether TQM was in use in their institutions, area of work in which TQM was used and to indicate TQM principles commonly used in their institutions.

4.5.1 Current use of TQM in area of work

When asked to indicate whether TQM was being used in their area of work the respondents gave the following responses as indicated in Table 4.9, with 62% of the respondents indicating that TQM was in use, 26.6 % indicating that TQM was not in use while a further 11.4% of the respondents indicated that they didn’t know whether TQM was in use in their institutions.
Table 4.9: Use of TQM

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>49</td>
<td>62.0</td>
</tr>
<tr>
<td>No</td>
<td>21</td>
<td>26.6</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>9</td>
<td>11.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding indicates that majority of the respondents were using TQM and its associated principles in their area of work implying most of institutions had adopted TQM use in management with 11.4% of the respondents not being able to differentiate between TQM use and other management methods employed in their institutions.

4.5.2 Area of work in which TQM was used

When asked to state the area of work in which TQM was being used a majority 54.4% of the respondents indicated managerial with 34.2% of the respondents indicating Non-managerial while 11.4% of the respondents did not respond to the question. The results are presented in Table 4.10.
Table 4.10: Area of work in which TQM was used

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial</td>
<td>43</td>
<td>54.4</td>
</tr>
<tr>
<td>Non Managerial</td>
<td>27</td>
<td>34.2</td>
</tr>
<tr>
<td>No response</td>
<td>9</td>
<td>11.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding indicates that a combined percentage of 88.6% of the lecturers had used TQM in different areas of management and understood the factors that influence its use in management.

4.5.3 TQM Principles mostly used in management

The researcher sought to find out from the respondents the TQM principles mostly used in management of their institutions. The following multiple responses were provided as shown in Table 4.11, where 17.5% indicated employee involvement, 24.6% indicated quality culture, 11.2% open communication, 21.4% Participative management, 19.0% indicated continuous improvement and 6.3% did not respond to the question.
Table 4.11 TQM principles used

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee involvement</td>
<td>22</td>
<td>17.5</td>
</tr>
<tr>
<td>Quality Culture</td>
<td>31</td>
<td>24.6</td>
</tr>
<tr>
<td>Open Communication</td>
<td>14</td>
<td>11.1</td>
</tr>
<tr>
<td>Participative Management</td>
<td>27</td>
<td>21.4</td>
</tr>
<tr>
<td>Continuous improvement</td>
<td>24</td>
<td>19.0</td>
</tr>
<tr>
<td>No response</td>
<td>8</td>
<td>6.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>126</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding indicates that most of the institutions were using a combination of more than one principle depending on area of application and the lecturers were knowledgeable about TQM principles used in the management of their institutions.

4.6 Employee involvement

Respondents were required to indicate whether there was lecturers’ involvement systems in place, nature of employee involvement, ways in which employees are involved in management, measures put in place to ensure lecturers’ involvement and extent to which employee involvement influence the use of TQM the management of the PTTIs.
4.6.1 Employee involvement system

The respondents were asked to indicate whether there was a specific employee involvement system. Their responses were presented in Table 4.12, where 72.2% of the respondents indicated presence of an employee involvement system in their institution with 17.7% indicating that there was no existence of a specific employee involvement system and a further 10.1% indicating that they were not aware of existence of such a system in their institution.

Table 4.12: Whether there is a specific employee involvement system

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>57</td>
<td>72.2</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>17.7</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>8</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

This was confirmed by HODs, who when asked to state whether lecturers’ were allowed involvement in management affairs of their departments, they gave the following responses as presented in Table 4.13.
The results indicate 90.5% of the departments allowed lecturers’ participation and involvement while 9.5% did not allow lecturers’ involvement in management affairs of their department. The finding shows that majority of the PTTIs valued and encouraged lecturers’ participation and involvement in the management affairs of their institutions.

### 4.6.2 Nature of employee involvement

The respondents were required to indicate the nature of employee involvement system used in management of their institutions; their responses were presented in Table 4.14.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct involvement</td>
<td>45</td>
<td>57</td>
</tr>
<tr>
<td>Indirect involvement</td>
<td>28</td>
<td>35.4</td>
</tr>
<tr>
<td>No involvement</td>
<td>6</td>
<td>7.6</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.13: lecturers' involvement in management affairs

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement</td>
<td>19</td>
<td>90.5</td>
</tr>
<tr>
<td>No involvement</td>
<td>2</td>
<td>9.5</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100</td>
</tr>
</tbody>
</table>
The results indicate that 57% of the PTTIs had direct employee involvement systems for use in management while 35.4% of the PTTIs had indirect employee involvement systems for use, a further 7.6% of the PTTIs did not have any employee involvement systems in place for use in management. The findings show that majority of the PTTIs allowed employee involvement whether direct or indirect in management affairs of their institutions.

4.6.3 Ways in which employees are involved in management

When the respondents were asked to indicate ways in which they were involved in management 40.5% of the respondents indicated that they were involved through committees, 34.2% through task force and 25.3% through suggestion schemes. The responses given are presented in Table 4.15.

Table 4.15 Ways in which employees are involved

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committees</td>
<td>32</td>
<td>40.5</td>
</tr>
<tr>
<td>Task Forces</td>
<td>27</td>
<td>34.2</td>
</tr>
<tr>
<td>Suggestion schemes</td>
<td>20</td>
<td>25.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

This finding indicates that lecturers were directly involved in management of their institutions this is in agreement with HODs responses in Table 4.16, when asked to state measures put in place in their departments to ensure lecturers involvement in management matters, 33% indicated regular departmental meetings, 7% indicated delegation of roles and responsibilities, 28% indicated suggestion schemes, 19% indicated committees with 14% indicating task force.
This findings show that lecturers were directly involved in management affairs of their institutions by being assigned management roles and responsibilities to perform and being included in decision making process.

4.6.4 Extent to which employee involvement influence the use of TQM

The respondents were asked to indicate the extent to which they think employee involvement influenced the use of TQM in the management of their institutions and their responses presented in Table 4.17.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular departmental meetings</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>Delegation of roles and responsibilities</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Suggestion schemes</td>
<td>12</td>
<td>28</td>
</tr>
<tr>
<td>Committees</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>Task force</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Table 4.17: Extent to which employee involvement influence the use of TQM

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high extent</td>
<td>23</td>
<td>29</td>
</tr>
<tr>
<td>High extent</td>
<td>35</td>
<td>44</td>
</tr>
<tr>
<td>Low extent</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Very low extent</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>No extent at all</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.17 shows that 29% of the respondents are of the view that to a very high extent employee involvement influences the use of TQM with 44% of the respondents indicating to a high extent, 10% of the respondents indicating to a low extent, 8% of the respondents indicating to a very low extent and 9% of the respondents thought that employee involvement had no influence at all to TQM use in the management of PTTIs. The results indicate that majority of the respondents are of the opinion that to a high extent employee involvement influence TQM use in management of the PTTIs.

4.7 Training and development

This section sought to establish from the respondents the training and development programs offered by their institutions, whether their institutions engaged in continuous training and development of its lecturers, effectiveness of the training and development programs offered and the extent to which the level of training and development influences the use of TQM in management.
The respondents were asked to state the training and development programs which they had benefitted from, 30.4% of the respondents indicated seminars, 22.8% indicated workshops with the rest having a combined percentage of 46.8% benefitting with, Bachelors degree, Post graduate diploma and Masters degree as shown in the Table 4.18.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminars</td>
<td>24</td>
<td>30.4</td>
</tr>
<tr>
<td>Workshops</td>
<td>18</td>
<td>22.8</td>
</tr>
<tr>
<td>Diploma</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Degree</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Post graduate diploma</td>
<td>19</td>
<td>24.1</td>
</tr>
<tr>
<td>Masters degree</td>
<td>16</td>
<td>20.3</td>
</tr>
<tr>
<td>PhD</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>None</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings indicate that majority of the lecturers had benefitted from the various training and development programs offered by their institutions with a higher number (53.2%) of the lecturers benefitting through seminars and workshops. The findings also indicate that the training and development offered concentrated with individual lecturer area of specialization.
4.7.2 Continuous Training and development lecturers

When the HODs when asked to state whether their institutions engaged in continuous training and development of their lecturers 71.4% said yes while 28.6 % said no as indicated in Table 4.19.

Table 4.19: Continuous Training and development of lecturers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>15</td>
<td>71.4</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>28.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding shows that majority 71.4% of the PTTIs engaged in continuous training and development of their staff, this was done in an effort to equip them with the necessary skills, knowledge and competences required of them so as to perform their jobs effectively and efficiently.

4.7.3 Effectiveness of Training and development programs offered

The respondents were asked to state whether the training and development programs offered by their institutions were effective in developing and equipping them with necessary skills and competences required in their area of work; their responses were presented in Table 4.20, where 26.6% of the respondents indicated that they were effective, 43% indicating they were less effective and 30.4% indicating not effective.
Table 4.20: Effectiveness of the programs offered

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>21</td>
<td>26.6</td>
</tr>
<tr>
<td>Less effective</td>
<td>34</td>
<td>43.0</td>
</tr>
<tr>
<td>Not effective</td>
<td>24</td>
<td>30.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding indicates that majority 73.4% of the PTTIs were offering Training and development programs that were not effective in developing and equipping the lecturers with the relevant skills and competences required in their area of work.

4.7.4 Extent to Which the Level of Training Influences the use of TQM in Management.

When asked to state the extent to which training and development of lecturers influence TQM use in the management of their institutions the respondents provided varied responses as presented in Table 4.21.
Table 4.21: Extent to Which the Level of Training Influences the use of TQM in Management

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high extent</td>
<td>26</td>
<td>33</td>
</tr>
<tr>
<td>High extent</td>
<td>29</td>
<td>37</td>
</tr>
<tr>
<td>Low extent</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Very low extent</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>No extent at all</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.21 shows that 33% of the respondents indicated to a very high extent the level of training influences the use of TQM in the management of PTTIs, while 37% of the respondents indicated to a high extent with 14% of the respondents indicating to a low extent and 10% and 6% of the respondents indicating to a very low extent and no extent at all respectively. The finding shows that the level of training influenced TQM use in the management of the PTTIs.

### 4.7.5 Areas to be trained in so as to improve on TQM use

The respondents were asked to state the areas in which they would wish to be trained in so as to improve TQM use in their department. The following responses were given as presented in Table 4.22.
The findings indicate that 14.4% of the respondents would wish to be trained on how to use modern information and technology tools with 26% indicating continuous improvement techniques, 18.3% indicating monitoring and evaluation techniques, 21.2 indicating management methods, 11.5% indicating financial management while 8.7% did not respond to the question. This shows that the lecturers also wanted to be trained in other areas other than their areas of specialization so as improve on TQM use in management of their institutions.

### Table 4.22 Areas of training

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of various IT tools</td>
<td>15</td>
<td>14.4</td>
</tr>
<tr>
<td>Continuous improvement techniques</td>
<td>27</td>
<td>26.0</td>
</tr>
<tr>
<td>Monitoring and evaluation techniques</td>
<td>19</td>
<td>18.3</td>
</tr>
<tr>
<td>Management methods</td>
<td>22</td>
<td>21.2</td>
</tr>
<tr>
<td>Financial Management</td>
<td>12</td>
<td>11.5</td>
</tr>
<tr>
<td>No response</td>
<td>9</td>
<td>8.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>104</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.8 Technology and use of TQM in Management

This section required the respondents to state whether their institution had a specific technology in use, the type of technology used, the extent to which the level of technology influences the use of TQM in management and areas in which technology is used.
4.8.1 Available Technology for use

The respondents were asked to state whether they had a specific technological orientation for use in their institutions and they gave the following responses as presented in Table 4.23.

Table 4.23: Availability of specific Technological orientation for use

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>62</td>
<td>78.5</td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>16.5</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>4</td>
<td>5.1</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.23 indicates that 78.5 % of the PTTIs had specific technological orientation for use, 16.5% did not have any specific technological orientation for use. The finding indicate that majority of the PTTIs had a specific technological orientation in use.

4.8.2 Type of Technology used

The respondents were further asked to indicate the type of technology used in management of their institutions and their responses presented in Table 4.24, where 51.9% indicated modern/computer based, 10.1% indicated traditional/manual, 16.5% indicated both manual and computerized while 21.5% did not respond to the question.
Table 4.24: Type of Technology used

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern/Computer Based</td>
<td>41</td>
<td>51.9</td>
</tr>
<tr>
<td>Traditional /Manual</td>
<td>8</td>
<td>10.1</td>
</tr>
<tr>
<td>Both Manual and Computerized</td>
<td>13</td>
<td>16.5</td>
</tr>
<tr>
<td>No response</td>
<td>17</td>
<td>21.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding shows that majority of the institutions had adopted modern computer based technology that was used at all levels of management.

4.8.3 Extent to which the Level of Technology Influences the use of TQM in the Management of PTTIs.

The researcher further sought to establish the extent to which the level of technology influenced use of TQM in the management of PTTIs. The results are presented in Table 4.25.
Table 4.25: Extent to which the Level of Technology Influences the use of TQM in the management of PTTIs

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high extent</td>
<td>27</td>
<td>34</td>
</tr>
<tr>
<td>High extent</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>Low extent</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Very low extent</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>No extent at all</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From Table 4.25, the findings indicate that technology had an influence on TQM use in management with 34% of the respondents indicating that to a very high extent and 30% indicating to a high extent this gave a combined percentage of 64%, while 16% indicated low extent, 11% very low extent and 8% no extent at all.

4.8.4 Areas in which Technology is used

The researcher further sought to find out from the HODs areas in which technology was used in their departments, the HODs gave the following multiple responses as indicated in Table 4.26.
The finding indicates that technology was widely used in all areas of management from preparation (26%) and presentation (22%) of academic information to archiving (23%) and dissemination (17%) of the information among other uses (12%). This was confirmed by the lecturers when asked to state areas in which they used technology 26% of the respondents indicated co-ordination and information access, 17% indicated dissemination of information, 28% indicated preparation of exams with 25% indicating recording of marks among other uses. The results are presented in Table 4.27.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of certificates</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>Presentation of academic info</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Archiving academic info</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Dissemination of info</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Other uses</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>82</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Table 4.27: Areas in which Technology is used by the lecturers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-ordination and information access</td>
<td>58</td>
<td>26.4</td>
</tr>
<tr>
<td>Dissemination of information</td>
<td>39</td>
<td>17.7</td>
</tr>
<tr>
<td>Preparation of Exams</td>
<td>62</td>
<td>28.2</td>
</tr>
<tr>
<td>Recording of Marks</td>
<td>56</td>
<td>25.5</td>
</tr>
<tr>
<td>Other uses</td>
<td>5</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>220</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings show that PTTIs are highly dependent on computer based technology which is used in all areas of management.

4.9 Resources availability and use of TQM in Management

This section sought to establish the type of physical facilities available, adequacy of the resources provided and nature of influence of resources availability to TQM use in management.

4.9.1 Type of physical facilities (resources) available in the institutions

The researcher sought to find out from the respondents the type of physical facilities (resources) available in their institutions. The results are presented in Table 4.28.
Table 4.28: Types of facilities available

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Libraries</td>
<td>28</td>
<td>23.7</td>
</tr>
<tr>
<td>Workshops</td>
<td>16</td>
<td>13.6</td>
</tr>
<tr>
<td>Lecture rooms</td>
<td>49</td>
<td>41.5</td>
</tr>
<tr>
<td>Computer labs</td>
<td>25</td>
<td>21.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>118</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From Table 4.28 the results show that 23.7% of the respondents indicated that their institutions had libraries, 13.6% of the respondents indicating availability of workshops, 41.5% indicating availability of lecture rooms and 21.2% indicating availability of computer labs. The results indicate that most of the PTTIs did not have adequate physical facilities in place undermining TQM use.

4.9.2 Adequacy of the resources provided

This section sought to establish from the respondents whether their institutions provided adequate resources for the implementation of TQM programs and other management programs. The responses given are presented in Table 4.29, where 24.1% of the respondents indicated that the resources provided were adequate, 32.9% indicating fairly adequate and 43% indicated not adequate.
Table 4.29: Adequacy of resources

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>19</td>
<td>24.1</td>
</tr>
<tr>
<td>Fairly adequate</td>
<td>26</td>
<td>32.9</td>
</tr>
<tr>
<td>Not adequate</td>
<td>34</td>
<td>43.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding indicate that majority of the institutions did not provide adequate resources for TQM use this was as attributed to financial constraints experienced by these institutions as a result of lack of enough funding from the government and other stakeholders.

4.9.3 Influence of resources and TQM use in Management

The respondents were asked to state the nature of influence availability of resources had on use of TQM in management. Their responses are presented in Table 4.30.

Table 4.30: Influence of resources on TQM use in management

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhances effective use of TQM</td>
<td>33</td>
<td>41.8</td>
</tr>
<tr>
<td>Reduces effective use of TQM</td>
<td>15</td>
<td>19.0</td>
</tr>
<tr>
<td>No influence on the use of TQM</td>
<td>31</td>
<td>39.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
From the table above 41.8% of the respondents indicated that availability of resources enhanced effective use of TQM with 19% indicating that availability reduces effective use of TQM in management and 39.2% indicating that there was no influence between availability of resources and use of TQM. The findings indicate that resource availability influenced the use of TQM in the management of the PTTIs.

4.10. Communication and use of TQM in Management

This section sought to establish whether the PTTIs had communication systems in use, type of communication system in use, the effectiveness of the communication system and the extent to which the communication system influence the use of TQM in management.

4.10.1 Communication system in use

The respondents were asked to state whether there was a specific communication system in use in the management of their institutions. The results are presented in Table 4.31.

Table 4.31: Specific Communication system in use

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>63</td>
<td>79.7</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>13.9</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>5</td>
<td>6.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
From Table 4.31 majority 79.7% of the respondents stated that their institutions had a specific communication system in use while 13.9% said they did not have any system in use while 6.4% of the respondents did not respond to the question. The finding indicates that majority 79.7% of the PTTIs had communication systems in place for use.

4.10.2 Type of communication system in use

The researcher further sought to establish the type of communication systems used in the institutions. Table 4.32 presents the responses given.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open all round</td>
<td>19</td>
<td>24.1</td>
</tr>
<tr>
<td>One way closed</td>
<td>44</td>
<td>55.7</td>
</tr>
<tr>
<td>No response</td>
<td>16</td>
<td>20.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The results show that 55.7% of the PTTIs had a one way closed system of communication while 24.1% had an open all round system of communication. The finding shows that majority of the PTTIs had a vertical line system of communication that was one way and closed.
4.10.3 Effectiveness of the communication system used

The respondents were required to indicate the effectiveness of the communication system used in their institution, where 31.6% of the respondents indicated more effective with 48.1% indicating least effective and 20.3% indicating not effective. The responses are presented in Table 4.33.

Table 4.33: Effectiveness of the communication system used

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>25</td>
<td>31.6</td>
</tr>
<tr>
<td>Least effective</td>
<td>38</td>
<td>48.1</td>
</tr>
<tr>
<td>Not effective</td>
<td>16</td>
<td>20.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The finding indicates that the closed communication systems in use by the PTTIs were least effective for use in managing the PTTIs.

4.10.4 Extent to which communication systems influence TQM use

Respondents were required to state the extent to which they thought the communication systems in use influenced the use TQM in the management of their institutions. Their responses were presented in Table 4.34.
Table 4.34: Extent to which communication systems influence TQM use

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high extent</td>
<td>6</td>
<td>7.6</td>
</tr>
<tr>
<td>High extent</td>
<td>14</td>
<td>17.7</td>
</tr>
<tr>
<td>Low extent</td>
<td>33</td>
<td>41.8</td>
</tr>
<tr>
<td>Very low extent</td>
<td>16</td>
<td>20.3</td>
</tr>
<tr>
<td>No extent at all</td>
<td>10</td>
<td>12.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>79</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The results in Table 4.34 shows that 41.8% of the respondents indicated to a low extent communication system influenced TQM use with 20.3% indicating to a very low extent, 12.6% indicating no extent at all, 7.6% indicating very high extent and 17.7% indicating high extent. The findings show that the communication systems in use had no influence on TQM use in the management of the PTTIs.

4.11 Summary

The findings indicate that majority of the PTTIs were using TQM in managerial and non-managerial activities and lecturers were directly involved in management through various programs and activities with employee level of involvement having a very high influence on TQM use in management. The findings also indicate that PTTIs engaged in continuous training and development of their lecturers though the caliber of training was not effective in equipping the lecturers with the necessary skills and competences required for use of TQM in management. The level of employee training was established to have a positive influence on TQM use in the management of these institutions. Majority of the PTTIs had a specific technological orientation for use which was modern and computer based, the technology was used in all levels of management. The level of technology in use was found to extensively influence the use of TQM in the management
of the PTTIs. Resource availability was established to positively influence use of TQM in
the management of the PTTIs though majority of the PTTIs did not provide adequate
resources needed to enhance effective use of TQM in management. The findings indicate
that majority of the PTTIs have a specific communication system in use, the findings also
indicate that the communication systems in use are one way and closed and are not
effective for use in communication. The communication systems in use were found to
negatively influence TQM use in the management of the PTTIs.
 CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a consolidated summary of all findings, relevant conclusions, study recommendations and suggestions for further investigation.

5.2 Summary of Findings

This section has been organized in line with the objectives of the study, which entails factors influencing the use of TQM in management of PTTIs, these factors are; employee involvement, employee training, technology in use, resources availability and communication systems available in the institutions.

5.2.1 Employee involvement and use of TQM in Management

The first objective of this study was to examine how employee involvement influences the use of TQM in the management of PTTIs in Nairobi County. The areas tested included; existence of an employee involvement system, nature of employee involvement, ways in which employees are involved in management, measures put in place to ensure lecturers involvement and extent to which employee involvement influence the use of TQM. The study found out that the majority 72.2% of the PTTIs have a specific employee involvement system with 57% of the PTTIs allowing lecturers’ direct involvement in management affairs of their institutions, the study also established that lecturers were directly involved through committees (40.5%), Task forces (34.2%) and suggestion schemes (25.3%) with various departments putting in measures to ensure effective participation and involvement of lecturers key among them; holding regular
departmental meetings (33%), delegation of roles and responsibilities (7%), suggestion schemes (28%), committees (19%) and Task forces (14%). The study discovered that lecturers’ participation and involvement through various programs had to a high extent influenced use of TQM in the management of PTTIs with 44% of the respondents indicating to a high extent it influenced use of TQM in the management of PTTIs and 29% indicating to a very high extent, this represented a combined percentage of 73%.

5.2.2 Employee Training and use of TQM in Management

The second objective of this study was to determine how employee training influenced the use of TQM in the management of PTTIs in Nairobi County. The areas tested included; Whether there was training and development programs offered by the PTTIs to the lecturers, effectiveness of the training and development programs offered, extent to which the level of training influences the use of TQM in management and areas in which the lecturers would wish to be trained in so as to improve the use of TQM in management. The study found out that majority 53.2% of the PTTIs organized seminars and workshops as a way of equipping the lecturers with new skills, knowledge and competences in their area of specialization with 44.4% of the respondents being sponsored for Post graduate studies. The study discovered that the training and development programs offered were not effective 73.4% in developing and equipping the lecturers with the necessary managerial skills and competences needed for TQM use. The study further established that the level of Training influenced the use of TQM in the management of PTTIs with the majority 70% of the respondents indicating from high extent to very high extent that it had an influence on TQM use in the management of the institutions. The study also found out that 14.4% of the respondents would wish to be trained on how to use various Information and Technology (IT) tools that are available in their institutions, 26% would wish to be trained on continuous quality improvement techniques, 18.3% monitoring and evaluation, 21.2% various management methods and 11.5% on financial management.
5.2.3 Technology and use of TQM in management

The third objective was to establish how technology influences the use of TQM in the management of PTTIs in Nairobi County. The areas tested include; the existence of specific Technological orientation for use, type of technology in use, areas in which technology was used and the extent to which the level of Technology influenced the use of TQM in management. The study found out majority 78.5% of the PPTIs had adopted specific technology for use which is Modern/Computer based (51.9%). The study also found out that the level of technology applied to a high extent influenced the use of TQM in management with 30% of the respondents indicating to a high extent and 34% indicating to a very high extent giving a combined percentage of 64%. The study established that 21% of the respondents were using the Technology in preparation of certificates, 18% in presentation of academic information, 19% in archiving academic information and 14% in dissemination of information among other uses.

5.2.4 Resource availability and use of TQM in management

The fourth objective was to establish ways in which resources availability influence use of TQM in management of PTTIs in Nairobi County. The areas tested included; type of physical facilities available, adequacy of the resources provided and nature of influence resources availability has on TQM use in management. The study found out that 43% of the PTTIs failed to provide adequate resources for implementation TQM programs. The study also established resources availability (41.8%) enhanced effective use of TQM in the management of PTTIs.

5.2.5 Communication systems and use of TQM in management

The fifth objective was to establish how communication systems influence the use of TQM in the management of PTTIs. The areas tested included; presence of specific communication system in use, type of communication system, effectiveness of the communication system in use and extent to which the communication system influence
TQM use. The study found out that majority 79.7% of the PTTIs had a specific communication system for use, with 55.7% of the respondents indicating that the system in use in their institution to be one way and closed. The study established that 48.1% of the communication systems in use in the PTTIs were least effective for use while 16% of the communication systems were not effective giving a combined percentage of 68.4%. The study also established that the communication systems in use in the PTTIs had a low influence (41.8%) on TQM use in the management of the PTTIs.

5.3 Discussions

The following discussions are based on research objectives, main findings of the study and literature reviewed.

5.3.1 Employee involvement and use of TQM in the management of PTTIs

The study found out that the majority 72.2% of the PTTIs have a specific employee involvement system with 57% of the PTTIs allowing lecturers’ direct involvement in management affairs of their institutions, this is in agreement with Mcshane (2008) finding that successful use of TQM programs in various level of management in an organization largely depends on the degree of employee involvement programs practiced by an organization. According to the study the ability of an organization to effect changes and manage its programs and plan depends on the culture and nature of employee involvement practiced in an organization with direct involvement resulting in high managerial performance.

The study also established that lecturers were directly involved through committees (40.5%), Task forces (34.2%) and suggestion schemes (25.3%) with various departments putting in measures to ensure effective participation and involvement of lecturers key among them; holding regular departmental meetings (33%), delegation of roles and responsibilities (7%), suggestion schemes (28%), committees (19%) and Task forces (14%), this finding concurs with Kacmar (2008) finding that adequate employee
involvement through such programs as suggestion schemes and quality circles influence the use of TQM programs in organizations. The study discovered that lecturers’ participation and involvement through various programs had to a high extent influenced use of TQM in the management of PTTIs with 44% of the respondents indicating to a high extent it influenced use of TQM in the management of PTTIs and 29% indicating to a very high extent, this represented a combined percentage of 73%. This is in line with Institute of Human Resource Management of Kenya (2012) report that established employees’ involvement direct or indirect contributes towards increased interest, energy, effort, and motivation and may be used as a non financial reward thereby positively resonating with TQM programs.

5.3.2 Employee Training and use of TQM in the management of PTTIs

The study found out that majority 71.4% of the PTTIs engaged in continuous training and development of their lecturers with 53.2% of the PTTIs organizing seminars and workshops as a way of equipping the lecturers with new skills, knowledge and competences in their area of specialization and 44.4% of the respondents being sponsored for Post graduate studies. According to Kinicky (2012) training and development systems form an essential ingredient in the use of TQM in the management of organizations. Training also works towards empowering the employees and other stakeholders and creates a credible but interesting work atmosphere, climate and environment. However the training and development programs offered by the PTTIs to their lecturers were not effective 73.4% in developing and equipping them with the necessary managerial skills and competences needed for TQM use. This is in agreement with Kinicky (2012) finding that the application of rigid, narrow, onetime, non objective based trainer centered and individual based training programs are least useful in the adoption of TQM in an organization with the training and development programs working towards reduced quality, satisfaction, productivity, and general interest of the employees and other stakeholders in the process negating against the TQM programs.
The study further established that the level of Training influenced the use of TQM in the management of PTTIs with the majority 70% of the respondents indicating from high extent to very high extent that it had an influence on TQM use in the management of the PTTIs, this is in line with International Labor Organization (ILO 2011) report that found out that effective use of TQM programs to be contingent on the level of skills, competencies, knowledge and capabilities among the employees, where organizations with adequate comprehensive and flexible, continuous and trainee centered training programs excelled in their management and administrative duties and responsibilities

5.3.3 Technology and use of TQM in the management of PTTIs

The study found out majority 78.5% of the PPTIs had adopted a specific technological orientation for use which is Modern/Computer based (51.9%) this concurs with Coulter (2010) finding that the effective use of TQM programs in any organization depends entirely on the technological orientation with the adoption of modern technological orientation with electronics dimensions working to enhance the use of TQM. The modern/computer based technology was being used in preparation of certificates (21%), presentation of academic information (18%), archiving academic information (19%) and dissemination of information (14%) among other uses, this findings verify Laudon & Laudon (2008) finding that the nature and type of technology adopted by an organization has a great bearing on TQM use in management of organizations with current organizations demanding a modern computer based technological orientation that provides accurate, correct, realistic, flexible information and in simple and timely manner.

The study also found out that the level of technology used to a high extent influenced the use of TQM in management with 30% of the respondents indicating to a high extent and 34% indicating to a very high extent giving a combined percentage of 64%, this is in agreement with Kiiru (2011) findings that technology enhances relationships, communication, meetings and face to face discussions enhancing positively the use of
TQM programs and adoption of modern computer based technology among organizations using TQM approaches in their management programs and operation. According to the study the use of TQM programs depends very much on the ability of the organization to effect new and modern approaches to management associated with participation, information sharing, innovation faster and reliable customer services and satisfaction.

5.3.4 Resources availability and use of TQM in the management of PTTIs

The study found out that PTTIs did not have adequate physical facilities (resources) like libraries (23.7%), workshops (13.6%), lecture rooms (41.5%) and computer labs (21.2%), the study also found out that 43% of the PTTIs failed to provide adequate resources for implementation of TQM programs this findings concurs with Armstrong (2005) finding that the availability of resources determines the nature and quality of manpower, machinery, equipments, technology, structures and innovations, change and creativity programs. The study also established resources availability (41.8%) influenced the effective use of TQM in the management of PTTIs this is in line with Cole (2008) findings that the presence of well trained and developed human resources, adequate funds and finances, good infrastructure organizations are able to initiate, plan, implement and evaluate TQM programs.

5.3.5 Communication systems and use of TQM in the management of PTTIs

The study found out that majority 79.7% of the PTTIs had specific communication systems for use, with 55.7% of the respondents indicating that the system in use in their institution to be one way and closed. According to Kenya Institute of Management (KIM 2011) the success of TQM programs depends on the nature of the communication systems used by an organization, high success factors are associated with TQM programs being contingent on the application of open, respectful, trustful and truthful messages coming across the organization.
The study established that 48.1% of the communication systems in use in the PTTIs were least effective for use while 16% of the communication systems were not effective giving a combined percentage of 68.4% this is in line with Kenya Institute of Management (KIM 2011) findings that established that effective use of TQM programs like empowerment, quality culture and participative style of management in organizations requires a sound and effective system of communication. The study also found out that the communication systems in use in the PTTIs had a low influence (41.8%) on TQM use in the management of the PTTIs, these findings concurs with Dessler (2008) finding that the influence of communication systems on TQM use is contingent on the type and nature of the systems where an open communication system that is all round in dimensions and approach enhances the application of TQM programs that allows for information sharing, frank discussions, sharing of ideas, knowledge and experiences. The presence of a closed one way communication system on the other hand increases frustrations, complaints and grievances among stakeholders thereby working against TQM use in management.

5.4 Conclusions

The PTTIs encouraged and allowed direct lecturers’ involvement and participation in management affairs through task forces, committees, regular meetings and suggestion schemes. This direct involvement influenced to a great extent the use of TQM in the management of the PTTIs.

PTTIs engaged in continuous training and development of their lecturers in individual area of specialization the training offered was found not to be effective in equipping the lecturers with the necessary skills and competences required for effective use of TQM in the management of the PTTIs. The level of lecturers training influenced the extent of TQM use in the management of these institutions.
The PTTIs had adopted a specific technological orientation for use with majority of those institutions using modern computer based technology. The level of technology in use positively influenced the use of TQM in the management of these institutions.

TQM use in management of the PTTIs was largely dependent on the nature and adequacy of resources provided by the PTTIs. Majority of the PTTIs were not able to provide adequate resources thereby undermining effective use of TQM in the management of the PTTIs. Resource availability extensively influenced the use of TQM in the management of the PTTIs.

Majority of the PTTIs have communication systems that are closed and one way thus ineffective for use. These types of communication system negatively influenced the use of TQM in the management of the PTTIs.

5.5 Recommendations

Based on the study findings, the following recommendations are made:

1. PTTIs in Nairobi County should set up reward and recognition systems that encourage lecturers’ direct involvement and participation in management affairs of their institutions so as to improve extent of TQM use in the management of the PTTIs.
2. PTTIs in Nairobi County should revise Training and development programs offered to their lecturers so as to include training in other areas like continuous quality improvement techniques and use of IT tools which resonate well with TQM use in the management of the PTTIs.
3. PTTIs in Nairobi County should consider setting up additional information and technology infrastructure so as to improve extent of TQM use in the management of the PTTIs.
4. The government in conjunction with the Ministry of Education, Science and Technology should provide enough funds and other resources to facilitate the effective use of TQM in the management of the PTTIs.

5. PTTIs in Nairobi County should adopt communication systems that are open and all round and allow for access and dissemination of information and co-ordination of the various departments.

5.6 Suggestion for further research

Due to the limited scope, limitation of time and other resources, this study did not explore certain important areas; further study could be taken on


3. Top leadership influence on the use of TQM in the management of Public Technical Training Institutions.

5.7 Summary

The study established that employee involvement, employee training. Level of technology in use, resources availability and communications system in use to a high extent influenced TQM use by PTTIs in Nairobi County. The study found that the lecturers were involved in management of their institutions and the PTTIs were highly dependent on modern computer based technology for use. The study also found out that PTTIs in Nairobi County did not provide adequate resources for use in management, train lecturers in other fields other than their area of specialization and the communication systems in use were ineffective. To improve on TQM use in the management of PTTIs the study recommended provision of adequate funds and other resources by the government, training of lecturers in management related areas that resonate well with TQM use and adoption of communication systems that are open and all round.


To my Respondent.

Dear Sir/Madam,

**RE: REQUEST FOR YOUR PARTICIPATION**

I am a Postgraduate student at the University of Nairobi, carrying out a research study on factors influencing use of Total Quality Management (TQM) in Management of Tertiary Institutions: A case of public technical training institutions in Nairobi County, Kenya. The results of this study will assist policy makers in designing policies that will enhance management of technical training institutions and the feedback obtained from the respondents may be used as measurement scale to assess the success of TQM use in management of other organizations.

I humbly request that you kindly participate in this study by filling in the attached questionnaire appropriately.

The information to be obtained will be purely for the research study and the identity of respondents will remain strictly confidential.

Thank you for your participation.

Yours faithfully,

Zablon Macharia Gichara
APPENDIX II: LECTURERS’ QUESTIONNAIRE

Please answer all questions in all the sections as indicated by either ticking or filling in the blank space provided.

SECTION A: BACKGROUND OF THE RESPONDENT

1. In which program(s) do you teach?
   
   Certificate [ ] Diploma [ ]

2. Number of students studying your course.
   
   Less than 150 [ ] 150-250 [ ] 251-350 [ ] Above 350 [ ]

3. Your teaching experience at the current institution in years?
   
   Less than 5 years [ ] 5-10 years [ ] 11-15 years [ ]
   16-25 years [ ] Above 25 years [ ]

4. Highest level of education and training you have attained?
   
   Diploma [ ] Higher diploma [ ] Bachelors degree [ ]
   Masters degree [ ] PhD [ ]
   Any other please specify………………………………………………………………………

SECTION B: INSTITUTION PROFILE

5. How many years has the College been in existence?
   
   (a) Less than 1 year [ ]
   (b) Between 1 and 5 years [ ]
   (c) Between 5 and 10 years [ ]
   (d) More than 10 years [ ]
6. Approximately, what is the population of the students in the college?
   (a) Less than 250 [ ]
   (b) Between 250 and 500 [ ]
   (c) Between 500 and 1000 [ ]
   (d) More than 1,000 [ ]

7. How would you describe changes in student population over the last 10 years or since the inception of the college?
   Population has remained constant [ ]
   There has been an increase by approximately 25% [ ]
   There has been an increase by more than 25% [ ]
   There has been a decrease by approximately 25% [ ]

8. Has there been any change in the number of Lecturers in the college over the last 10 years. Please indicate the specific change below.
   Increased [ ] Remained constant [ ] Decreased [ ]

SECTION C: USE OF TQM PROGRAM IN MANAGEMENT

9. Do you currently use TQM principles in your area of work?
   Yes [ ] No [ ] Don’t know. [ ]

10. If yes, in which area do you commonly use TQM in your work?
    Managerial [ ] Non managerial [ ]

11. Which of the following TQM principles is mostly used in the management in your institution?
    Employee involvement [ ] Participative management [ ]
Quality culture [ ] Continuous improvements [ ]

Open communications [ ]

Any other(s) please specify.................................................................

SECTION D: EMPLOYEE INVOLVEMENT AND USE OF TQM IN MANAGEMENT

12. Does your institution have a specific employee involvement system for use in its management activities?

   Yes [ ] No [ ] Don’t know [ ]

13. If yes, what is the nature of employee involvement system used in management of your institution?

   Direct involvement [ ] Indirect involvement [ ] No involvement [ ]

14. List ways in which employees are involved in management of your institution?

   .........................................................................................................................................

15. To what extent do you think employee involvement system influence the use of TQM in the management of your institution?

   To least extent [ ] To less extent [ ] To Moderate extent [ ] To a great extent [ ] To a very great extent [ ]
SECTION E: EMPLOYEE TRAINING AND USE OF TQM IN MANAGEMENT

16. Which training and development program, (if any), offered by the college for its Lecturers/teaching staff, have you benefitted? Please indicate all that apply.

- Seminars [ ]
- Workshops [ ]
- Diploma [ ]
- Bachelors degree [ ]
- Masters Degree [ ]
- PhD [ ]
- None [ ]

Any other please specify……………………………………………………………

17. Do you think the training and development programs offered in your institution are effective in developing and equipping all lecturers’ with necessary skills and competences required in their field?

- Effective [ ]
- Less effective [ ]
- Not effective [ ]

18. What extent do you think training and development of the lecturers influence TQM use in the management of your institution?

- To least extent [ ]
- To less extent [ ]
- To Moderate extent [ ]
- To a great extent [ ]
- To a very great extent [ ]

19. What areas would you wish to be trained in so as to improve on TQM use in your department?

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SECTION F: TECHNOLOGY AND USE OF TQM IN MANAGEMENT

20. Does your institution have a specific technological orientation for use in its management activities?

- Yes [ ]
- No [ ]
- Don’t know [ ]
21. If yes, what is the nature of technology used in the management of your institution?

Modern computerized [ ]
Traditional manual [ ]
Both manual and computerized [ ]

22. To what extent do you think the technological orientation influence the use of TQM in the management of your institution?

To least extent [ ]
To less extent [ ]
To Moderate extent [ ]
To a great extent [ ]
To a very great extent [ ]

23. List the various areas in which you use technology in your area of work?

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SECTION G: RESOURCES AVAILABILITY AND USE OF TQM IN MANAGEMENT

24. Please list the type of physical facilities present in your institution.

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25. How would you rate in terms of adequacy the resources provided for use by your institution?

Adequate resources [ ]
fairly adequate [ ]
Not adequate [ ]
26. In what ways do you think access to adequate and quality resources enhance the use of Total Quality Management in the management of your institution?

Enhances effective use of TQM [ ]

Reduces effective of use of TQM [ ]

No influence on the use of TQM [ ]

SECTION H: COMMUNICATION AND USE OF TQM IN MANAGEMENT

27. Does your institution have a specific communication system for use in its management activities?

Yes [ ]
No [ ]
Don’t know [ ]

28. If yes, what is the feature of communication systems used in the management of your institution?

Open and all round [ ]
Closed [ ]

29. In your opinion do you think the communication systems used in your institution are effective in disseminating the required information?

Effective [ ]
Least effective [ ]
Not effective [ ]

30. In your own opinion what influence do you think effective communication has on use of TQM in your College?

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31. To what extent do you think communication system influence the use of TQM in the management of your institution?

To least extent [ ]
To less extent [ ]
To Moderate extent [ ]
To a great extent [ ]
To a very great extent [ ]

THANK YOU FOR YOUR CO-OPERATION
APPENDIX III: INTERVIEW GUIDE FOR HEADS OF DEPARTMENT (HODS)

1. How long have you been the HOD?
2. How do you ensure that there is continuous quality improvement and TQM implementation in your department?
3. What is the institutional policy regarding lecturers involvement in quality matters?
4. What factors do you have in place in your department to ensure lecturers involvement and contribution in management matters?
5. Is training and development of lecturers’ part of your institutions’ policy?
6. Is continuous training and development part of the Lecturers staff development plan?
7. State management areas in which technology is used in your department.
8. In your own opinion how effective is the technology used?
9. Does your institution provide resources for the implementation of TQM programs?
10. How in your opinion does access to these resources influence use of TQM in the management of your institution?
11. How would you rate the channel(s) of communication in terms of effectiveness in disseminating the required information?

THANK YOU FOR YOUR CO-OPERATION
APPENDIX IV: LIST OF PUBLIC TECHNICAL TRAINING INSTITUTIONS IN NAIROBI COUNTY.

Chiromo Industrial Electronics College
East African School of Aviation
Kabete Technical Training institute
Karen Technical Training institute For the Deaf
Kenya Armed Forces Technical College
Kenya Institute of Highways and Building Technology
Kenya Institute of Surveying and Mapping
Kenya Water Institute
K.P.L.C Technical Training Institute
Nairobi Technical Training Institute
NYS Engineering Institute
PC Kinyanjui Technical Training Institute
Railway Training Institute

Source: Ministry of Higher Education Science and Technology (MOHEST) website.