

**TOTAL QUALITY MANAGEMENT PRACTICES AND
PERFORMANCE OF TECHNICAL AND VOCATIONAL
EDUCATION AND TRAINING INSTITUTIONS IN NAIROBI**

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DECLARATION

This research project is my original work and has not been submitted for a degree in this or any other University for examination

Sign: _____ Date _____

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D61/83891/2016

This project has been submitted for examination with my approval as the appointed supervisor and co-supervisor.

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DEDICATION

This project paper is dedicated to my family for their inspiration, understanding and encouragement towards the successful completion of this research project and to God, for giving me the wisdom to undertake this course and the strength to complete this project.

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ABBREVIATIONS AND ACRONYMS

TQM - Total Quality Management

SPSS - Statistical Package for Social Science

ISO - International Organization for Standardization

RBV - Resource Based View

BSC - Balance Score Card

ESG - Environmental, Social and Governance

EFQM - European Foundation for Quality Management

HEIs - Higher Education Institutions

KEBS - Kenya Bureau of Standards

TVET - Technical and Vocational Education and Training

QMS - Quality Management System

ABSTRACT

The purpose of this study was to determine the influence of total quality management practices and performance of Technical and Vocational Education and Training (TVET) Institutions in Nairobi. Four research objectives of this study were; to assess the implementation of TQM in TVET institutions, to determine the TQM practices of TVET institutions, to indicate the barriers to TQM implementation in the institutions and to determine the relationship between TQM practices and performance of TVET institutions. The study used descriptive research design. The target population was 151 TVET institutions in Nairobi, out of 151 institutions only 125 returned dully filled questionnaires producing a response rate of 83 percent. A census survey was done on all the registered TVET institutions. Primary data was collected using questionnaires. Data collected was analyzed by use of descriptive statistics with the use of SPSS and presented through the percentages, frequencies, mean, standard deviations and regression analysis. It was also clear that there was a significant relationship between Total Quality Management Practices and Performance represented by R^2 , 75.6%, which translates to 75.6% variation in the performance explained by all the independent variables. The findings of the study revealed that employee involvement and communication positively influence implementation of TQM. The findings also revealed that continuous improvement and customer focus are critical factors in the implementation of TQM. The study recommended that Institutions train their employees on quality management concepts and they should be conducted at all levels of the institution. Secondly, the study recommends management to develop communication systems that allow easy flow of quality information at all levels. Thirdly, the study recommends institutions to develop appropriate continuous programs that allow quality at all levels of the institution. Lastly, the study recommends that the institutions customer focus and management should be developed with all members of staff to ensure quality is achieved. The study suggested that: - further studies are done on the same area but with a focus on public and private universities. Further studies may be done to establish critical success factors that influence the performance of the institutions, highlighting the stumbling blocks and hindrances to effective TQM practices implementation.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

TQM provides the business subscribers with a new paradigm of executing their business activities so as to maximize the organization's competitiveness which results in improved performance (Hackman & Wageman, 1995). Total Quality Management (TQM) is a management philosophy that enables business entities to attain competitive advantage through the implementation of quality measures (Talib, Qureshi and Rahman, 2012). TQM was initiated in the early 1980's and since then it has immensely contributed to management practice globally. The importance of TQM towards the attainment of competitive advantage cannot be underestimated by business entities. Firms need to be cautious when implementing as empirical studies indicates that the criteria used by organizations in implementing TQM have a great impact on the business and influence the outcome. TQM has been defined in several ways; basically it implies the need to attain excellence and the creation of the right controls and attitudes to prevent possible errors and increase customer satisfaction through improved efficiency and effectiveness.

TQM is an organizations management approach which is centered on quality and the joint participation of all its members and other stakeholders so as to attain long term success. Firms achieve this through ensuring that the needs of the customers are fulfilled and that expectations of the organization and society are met. This philosophy enables firms to conduct their activities efficiently and effectively to the expectation of the stakeholders without compromising ethical values. TQM practices as listed by the ISO international quality ISO 9001:2015 as discussed in this study include; Quality

Leadership, Customer focus, Employee Involvement, Continuous Improvement, Process approach, Communication, Evidence based decision making, Relationship Management, System approach to management. TQM requires effective change in organizational culture which is enhanced by top management, communication and continuous improvement towards the strategy of the organization.

Leaders in TQM should encourage employee participation in decision making, ensure information is efficient, establish communication measures among the management and customers and above all support their employees to develop. In addition, leaders should empower and encourage employee participation in decision-making. TQM emphasizes on continuous improvement in all the processes of design and operation, execution of work by the front line staff to levels of planning and decision making. The focus on continuous improvement encourages the formation of a team whose membership is determined by their work on the detailed knowledge of the process, and their ability to take improvement action. TQM implies streamlining the supplier base to work with suppliers that ensure customer expectations are met (ISO 9001: 2015).

Higher education plays a significant role in the distribution and production of national income as well as impact of knowledge. Improving performance of higher education is thus imperative to national growth and development. By implementing quality models such as TQM can improve the performance of Higher Education Institutions (Varghese, 2013). There are three generic approaches to TQM in higher education (Harris 1994), First approach has a customer focus and is concerned with fostering employee training

and development to give students independence. The second approach has a staff focus and is concerned with flatter management structures, well defined work groups to ensure the contribution of all members of staff in setting of policies and priorities to the effectiveness of the institution's operation. The third approach focuses on service agreements that seek to ensure conformity to specification of educational processes at key measurable points.

Both global and national forces are driving change within higher education institutions (HEIs) in different countries. These transformations have resorted to put the issue of Total Quality Management firmly on the agendas of national governments, individual programme of study, academic departments and institutions (Becket & Brooks, 2006). Despite the research that has been done, there is still no common way on how best to manage quality within learning institutions. Key reason for this is the recognition that quality is sophisticated and varied construct, particularly in learning institution environments (Harvey & Knight, 1996; Cheng & Tam, 1997). As a result, quality management has created a number of challenges. This has led to HEIs within different countries to adopt variety of TQM practices.

1.1.1. Organizational Performance

Organizational performance is the measure of efficiency and effective use of available resources by managers to meet the needs of the customers and achieve the goals of the organization (Keuning, 1998; Jones & George, 2009). The term efficiency can be defined as competency in performance; accomplishing a task using the least waste of time or

effort (Salaheldin, 2009). Organizational Performance can be evaluated in terms of either operational or financial performances. Examples of factors that promote operational performance include productivity, level of output, employees' performance, and customer satisfaction (Kuo, Chang, Hung, and Lin, 2009). On the other hand, the enterprise's financial performance is measured in terms of revenue growth, profit margin, and the growth of the organization (Jerome, 2013). In the present business environment, the performance of the organization is measured using financial gains, and employee and client satisfaction. Furthermore, Venkatraman & Ramanujam (1986) identified sales growth, return on investment, and performance of individual departments as primary factors that help in assessing financial performance.

The quality of products and services offered by the organization in terms of fulfilling customer demands and competing in the market assists in evaluating operational performance (Delaney, 2006). The five performance objectives or strategies of quality, speed, flexibility, dependability and cost can be broken down into more specific measures such as customer complaints or customer satisfaction, timeliness of delivery, delivery lead times, mean time between failures, order lead time and price (Nigel, 2010). These measures can further be aggregated into more defined strategic objectives like achieve zero customer complains, achieve a delivery lead time of one day, which are more measurable. The more detailed the performance measures are, the clearer the direction the organization is taking, and the more it is specific on action lines. Although these measures provide a preview of operational performance, other descriptive measures

should be used to provide a complete overview of the organization because each organization has its own other measures which tend to be organization specific.

1.2 Research Problem

In Kenya today, the application of TQM continues to flourish as an efficient and scientific tool for maintaining standards in education. In this quest, by the end of year 2012, approximately thirty one (31) educational institutions had been certified on ISO 9001:2008 standards by KEBS, twelve (12) of which are TVET institutions. A formal training of TVET institution teachers started in the late 1960s at the Kenya Polytechnic. This programme was later discontinued after an output of 282 graduates transferred to the Kenya Technical Teachers College in the mid seventies (Kamunge Report, 1988). TVET Education includes programmes of study and training in technical and other applied courses offering Diploma and Certificate levels of training. Technical education provides the students with pre-vocational technical skills related to trades and professions. The training offered in the TVET institutions aims at preparing the youth for various occupations and skills development. Currently we have a total of one hundred and fifty one (151) accredited TVET Institutions operating in Nairobi.

The TVET institutions are managed and maintained by the government and others are privately owned. The Ministry of Education supervises and inspects all these institutions (Kamunge Report, 1988). Each of these institutions is working on achieving maximum quality possible both on the services and products offered. As a result some have opted for the adoption of Total Quality Management. Despite the widespread use of Total

Quality Management still most institutions have not achieved the expected performance such as high enrolment, minimum labor turnover, elimination of conflicts within management and maximum employee motivation. However it is not clear why this undesirable situation persists. According to Nyerere (2009), TVET institutions continue to face quality related challenges such as low enrolment, high labor turnover and even low morale among employees despite most of them being certified under ISO standards.

Karani and Bichanga (2012) carried out a study on the effects of total quality Management implementation on business performance in service institutions, a case of Kenya wildlife services. The key finding from the study was that performance is improved through effective management and there is need to emphasize on TQM principle implementation to ensure better performance of the organization. Njenga (2017) conducted a detailed look at the Influence of implementation of quality management system on operational performance of technical training institutions in Meru County: A case of Nkabune Technical Training Institute, Kenya. The key finding of the study was that performance is improved through effective implementation of TQM principles.

None of these studies explores the influence of TQM practices and Performance of TVET Institutions; hence there is a knowledge gap which this study intends to fill by investigating TQM practices and performance of TVET Institutions. In relation to this, the study seeks to answer the following research questions; To what extent do TVET Institutions implement TQM? What are the TQM practices of TVET Institutions in Nairobi? What are some of the barriers to TQM implementation in TVET Institutions?

What is the relationship between TQM practices and Performance of TVET Institutions in Nairobi?

1.3 Research Objectives

1.3.1 General objective of the study

The general purpose of the study was to determine the influence of TQM Practices and Performance of TVET Institutions in Nairobi

1.3.2 Specific objectives of the study

The study was based on the following specific objectives;

- i. To assess the Implementation of TQM in TVET Institutions in Nairobi
- ii. To determine the TQM Practices of TVET Institutions in Nairobi
- iii. To indicate the Barriers to TQM implementation in TVET Institutions
- iv. To determine the relationship between TQM Practices and Performance of TVET Institutions in Nairobi

1.4 Value of the study

The research findings will seeks to extend knowledge by providing more literature to support existing theoretical propositions on TQM practices and its capability as a management strategic approach. The study will also enable the public to understand the concept of quality management by highlighting its importance towards achieving quality products and improving their services. For organizations to successfully achieve their objectives quality must be strictly adhered to and products must be well planned to meet

up with the needs of consumers. The findings also contribute to research on continuous improvement which provides a link between the learning in class and the implementation on the ground.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The literature review summarizes what has been written about the area of study. The literature begins with Theoretical Literature Review related to the study, TQM Practices, TQM Implementation in Institutions, barriers to TQM implementation, performance measurement. Thereafter the literature reviews empirical studies and conceptual framework.

2.2 Theoretical Literature Review

Issues surrounding TQM and performance are discussed in two theories. These are; Resource based view theory (RBV) and Systems Theory.

2.2.1 Systems Theory

The systems view of organization depicts the main subsystems of an organization as finance, production or operations and marketing management. It portrays an open system where the feedback from the customer regarding the product or service consumed is highly valued in the organization's marketing subsystem. More effective feedback loops within the sub system increases its flexibility in responding to customer demands. TQM plays a vital role in arriving at an effective boundary judgment at every organizational interface and between the user and organizational system. The systems perspective forms the very initial step of understanding TQM. The systems perspective asserts that, an organization is a complex system with different levels of flexibility in its processes and many feedback channels infringed within the system which are utilized by the organization for its continuous growth and survival (Harrington, Carr & Reid, 1999)

The systems approach has made a lasting impact in the context of TQM. McElyea (2003) opines that many management models such as the TQM originate from a systems view of organization. From the systems theory point of view, the proper context of TQM lies within the rational and open systems perspective. Therefore, the TQM process comprises various components which are interactive. Thus for the desired outcome to be attained, there must be integration of all system parts. Thus the systems theory viewpoint asserts that TQM is more than training, leadership, culture and teams. It is therefore necessary for each institution to expose its own education needs, leadership, training and development of culture and use of teams to fit its particular TQM brand (Reed, Mero & Lemak, 2000). The system theorists argue that the implementation of a complex system such as quality management and other components that come with it, is not easy and most TQM failures are caused by the failure to manage them as a system (Reed, Lemak & Mero, 2002)

2.2.2 Resource Based View

RBV is an approach of strategy formulation aimed at attaining competitive advantage based on an organization's resources. Under this view, Organizations look for competitive advantage within themselves as opposed to looking for competitive environment outside (Barney J, 1990). In order to understand how competitive advantage is determined within organizations, it is important to look at the structure of the organization and the resources it possesses (Werner felt, 1984). According to Barney (1991), the resources owned by an organization are not sufficient enough to make them have a sustained competitive advantage. An organization will have sustained competitive

advantage and exceptional performance when it has resources that cannot be substituted and create value (Barney and Clark, 2007). The notion and ideology of TQM has been adopted by several successful companies and is known as a tool that provides competitive advantage and improves quality in the organization (Munizu, 2013).

TQM is an imperative resource both experimental and hypothetical confirmations support that TQM oriented institutions make it difficult for competitors to duplicate or take after Total Quality Management practices while they gain competitive advantage. TQM can encourage a company to be effective and efficient in its operations by creating distinctive competencies within the organization. As a result there is the generation of improved performance and competitiveness in the organization. TQM can further the development of routines and transform the behavior in the organization, which results in a process of learning and experience within the company itself (Winter, 1994).

Given the two theories, systems theory guides the study more as compared to resource based view which focuses more on competitive advantage and resources. The systems theory clearly states the Organization is a system with various components and for TQM to succeed there needs to be an integration of all the processes in the system.

2.3 TQM Implementation in TVET Institutions

Daniel Seymour (1993) proposes three connections that make TQM a viable model for Institutions; one is definitional, organizational and operational. The definitional connection extends quality beyond the student – professor interaction. The organizational connection implies that the institution seeks to advance learning and TQM is the system

that creates a learning organization. Operational connection is where the institution operates as an isolated individual whereas TQM is the unifying force that integrates the institution as a whole. By training employees, giving them the required tools and techniques and the responsibility of causing quality, creates the impression that the institution is investing in its own employees. A TQM approach would suggest that the function of the administration would be to insist on improvement by encouraging employees to really understand the processes in which they participate.

Daniel Seymour (1993) mentioned that institutions spend a lot of time describing their courses, qualifications of the faculty but spend less time analyzing how work is done or making attempts to become better in what they do. Encouraging perception of quality that extends beyond conformance to standards will help break the barriers between departments and disciplines. The teamwork that is inherent in TQM philosophy will enable employees to work towards common purposes instead of cross purposes. In order for TVET Institutions to implement TQM, administrators, staff and faculty need to be trained properly, and the institutions must be willing to improve their core processes and expand their information systems. The first step to implementing TQM is for the institution to look into their vision statement so as to answer the question of what business it is in, what quality practices guide the institution and what does the institution want to become. The vision statement communicates key values which form the basis of TQM effort.

2.4 Practices of Quality Management

TQM involves the application of quality management practices in all aspects of the institution including customers, suppliers and integration of business processes. International Organization for Standardization (ISO, 2015), indicates nine practices that should be taken in TQM implementation these include; continuous improvement, quality leadership, customer focus, evidence based decision making, relationship management, employee involvement, process approach, system approach to management and communication. This section will review these TQM practices.

2.4.1 Continuous Improvement

Continuous improvement entails running an error-free production to improve features and quality of products and services. Continuous improvement acts as a TQM element that assists an institution or firm in the management of the organization. Organizations that achieve their goals always practice continuous improvement through engaging all company stakeholders to ensure total customer satisfaction and improve quality (Oooi, 2006). Firms that practice Total quality management always set work processes that help minimizing errors and wastes during production; hence, improving the effectiveness of the organization (Anderson, 1994). Proper implementation of TQM increases chances of high performance in the organization (Spencer, 1994). Subsequently, members of the organization are stimulated to use innovations and new production techniques through the implementation of continuous improvement tactics (Prajogo and Sohal, 2003). Continuous improvement acts as one of the essential Total Quality Management

initiatives aimed at achieving total improvement in the organization and promote performance

2.4.2 Customer Focus

TQM's primary aspect is customer focus (Bank, 2000). It relates to the achievement of long-term organizational objectives. According to Hackman and Wageman (1995) obtaining customer information forms the fabric of TQM garment. In order for an organization to succeed in the dynamic business environment, it should consider satisfying customers' needs (Sila, 2007). On the same note, customer focus emphasizes on creating value for the customers leading to organizational growth (Juran, 1988 and Mele and Colurcio, 2006). The organization should focus on implementing TQM in the most appropriate manner to attain a high performance. Customer focus also enhances the performance of the organization by increasing customer satisfaction. Liu et al (2002) and Lee et al (2010) conducted studies to investigate the role of TQM in ensuring customer satisfaction. They revealed that changing the needs of the customers and quality management settings acted as primary measures of customer satisfaction. A viable administration framework must guarantee a solid customer focus for the organization. The needs and desires of customers must be identified and changed into product requirement.

2.4.3 Employee Involvement

Employees play critical roles in supporting performance and productivity of the organization. Organizations should respect employees because they are the most valuable

assets that a company can afford to lose. Firms that are very competitive train their employees on how to use their abilities, skills, and knowledge in ensuring continuous productivity. TQM implementation process proposed by Prajogo and Sohal (2001) incorporated employees leading to extreme improvement in organizational performance. Besides, if employees exhibit high cognizance of TQM, the information and announcing of value control arranged by the working staffs will be anything but difficult to reveal the truth and along these lines, can be utilized to rectify quality imperfections or errors instantly and viably. Along these lines, the authors suggest that better human administration will bring about more constructive outcome on delivering quality information and reporting. (Ahire & Dreyfus, 2000)

2.4.4 Quality Leadership

The commitment of the management is highly required in the implementation of the integrated approach to TQM, for this reason plans to adopt TQM will be made by the management of the organization. It is therefore necessary for top managers to focus their attention on activities happening in the organization. Top managers must be responsible for quality implementation standards, ensuring proper resource allocation needed for the quality system implementation, solving problems that are related to the attainment of objectives, giving recognition to employees who participate in continuous quality improvement, ensure there are minimal communication problems in the organization. Employees must have knowledge and understand what is required at the execution level of quality implementation, do it appropriately the first time and remove non-quality. Top managers must act as leaders they must ensure there is unity of purpose in the

organization, the objectives and actions to be achieved. In order to get accurate results, efficient operation of the quality management system and decisions related to the implementation should be considered so as to ensure conformity with the requirements set in the contract (ISO, 2015)

2.4.5 Process Approach

Process approach refers to the systematic application of processes in the management of an organization, which include the identification and interactions between the management and its owners. This approach is aimed at focusing on inconsistent and predictable opportunities for process improvements, making the implementation process shorter through the efficient utilization of resources and making continuous improvement thus increasing the gains of the organization through cost reductions. Process approach requires an organization to identify processes that need to be implemented and make them more efficient. This approach enables an organization to focus their attention on those processes and not just any activity taking place in the workplace, it will also enable management to identify key processes that will focus on customers' needs and increase their satisfaction through continuous improvement. Organizations should understand the required processes for the quality system to function effectively; they should also understand their customers and their respective needs. Processes chain basically includes execution of works processes, processes of management and support processes and monitoring and the processes of measurement. The processes identified within a system should consist of production processes, execution and provision of customer service

through customer satisfaction and administration of product or service quality (ISO, 2008)

2.4.6 Evidence Based Decision making

An organization will either fail or succeed based on the type of decisions they make, therefore there is need to apply evidence in line with the decision making approach. Evidence based decision making is based on giving factual figures and data about a particular problem. This is achieved by collecting information and data, taking measurements related to the purpose and ensuring the validity of the data, decision making built on the results of logical analysis, using appropriate statistical tools for analysis and easy access to information. Evidence based decision entails a rational and organized approach to analyzing available evidence to support the process of policy making. It enables people to settle on very much educated choices about programs, policies and projects by availing the best accessible proof from research from the basis of policy developments and implementation (Davies, 2004). The evidence based decision produce more useful policy decisions which leads to better results for the organization. Failure to use evidence as a decision making basis or reflection for the purpose of the entire population, the propositions for change are probably going to create incapable results and may lead negative ramifications for those who are seeking to derive benefits from it (Urban Institute, 2003).

2.4.7 Communication

From the TQM perspective, communication is the stability procedure of conveying meanings and symbols to a typical structure in all organizational units whereby TQM rationality is interconnected with the collaboration and sharing of encoded information, sentiments and considerations having quality goals from the individuals' perspective inside the organization, outside the organization and the expected group. Due to this procedure, it is clear that knowledge, feeling, thought, state of mind and conduct of people sorted out under TQM rationality are shared among these people through interaction and communication (Bisgaard, 2000). Communication plays a pivotal part in TQM as it propels employees and enhances their team spirit during everyday operations. It's important to involve employees in the day to day activities and decision making to give them a sense of belonging and empowerment. This creates conducive business environment which helps drive the outcomes TQM procedure can accomplish. When all goals of an organization are achieved effectively, a business can prosper.

For an organization to be efficient, everyone in the organization must be able to pass their message appropriately. Communication enables an organization to define who they are as a company, what is their vision and mission and why customers should choose them and why people prefer them. The TQM efforts of an organization will always be successful as customers are satisfied with quality communication. Therefore, the level of success in TQM is measured based on its ability to succeed the quality of communication when communicating to members of staff. The five basic elements of the TQM communication model are; Encoding; the message the sender is supposed to send, decoding; making

meaning of the message sent, response; the feedback from the receiver, feedback; determines whether or not the receiver understood the message sent and noise; these are factors that can hinder the whole communication process. To implement TQM successfully, there is need for customer quality idea that puts the customer first and continues with viable communication model. For TQM implementation to be successful it requires effective communication process (ISO, 2008)

2.4.8 Relationship Management

Relationship management implies the necessary documentation which the supplier is expected to undertake. It is important to regulate the supply of quality services and products, analyze and assess the performance of suppliers. At the same time the interests of suppliers must be taken into account by manufacturers so that both can benefit jointly. In order to create value both entities that is; management and suppliers must come to a win-win agreement. Relationship management with suppliers focuses on capability of providing improvements in its work, involvement and integration provider and providing quality and performance services. Successful companies make collaborations with suppliers so that the customers get the best services. These alliances must exist for the efficient application of quality management (ISO, 2008)

2.4.9 System Approach to Management

System approach practice views quality management from a global perspective, this include all the structures and employees of a company. When work is performed well by one department but neglected by the other department, all the value is lost. All the

departments of a firm are associated in that they could be customers, suppliers and external suppliers of each other. The company views the quality management approach as the mainstream of the company's overall management and that qualitative approach does not necessarily lead to positive outcomes. The main parties of the organization's overall management are quality management system, human resources management subsystems, health and safety and suppliers among others. The principle of systems approach focuses on the execution of quality management system and understanding each of its components to ensure that they benefit the organization. Systemic approach is often called consistent operation of network processes which applies to the entire quality management system. To obtain intermediate results for the clients, activities carried out must be related to the process (ISO, 2008)

2.5 Barriers to TQM Implementation in TVET Institutions

Kohn pointed out that before any Institution can jump into TQM implementation, one needs to differentiate between business and education. He emphasized that a major misunderstanding of the TQM practices is associating achieving high grades to successful implementation of TQM. (Kohn, 1993 & Beaver, 1994). The first barrier to TQM implementation in Institutions is lack of understanding the TQM processes and philosophy. This could be as a result of lack of proper knowledge about TQM. Top management may want results which TQM can be able to provide but they might not be willing to back the system wholeheartedly till the end because they want fast results. The Institution should embrace TQM as a strategy and commit to its philosophy in order to succeed. The second barrier is the fear of whether TQM is worth the effort to pursue and

if it really works. With regards to TQM implementation policies, there is need to redefine ways of empowering and engaging members of staff (Harvey, 1995). Even with the TQM plan in place senior management staff may be too impatient to wait and see the efforts of the plan unfold due to the complexity of the processes involved in academic which may take time for the results to be realized by management.

The third barrier was employees' resistance to change. In this scenario employees expect autonomy and academic freedom at work place. No member of the academic staff would like to be asked to change their teaching styles, given the fact that they are more devoted to teaching than TQM adoption. Furthermore it may be difficult to adopt the TQM practices in a short time because it is associated with bureaucracy which is not a preferred method among academic dons (Sebastian ell, 1998). Quality failure can also be associated with poor curriculum design. While making changes to the course delivery or curriculum there could be academic procedures that serve as bottlenecks. Kohn states that implementation of quality management in education still fails to address questions on whether learning and curriculum is engaging in relevant learning processes (Kohn, 1993).

2.6 Total Quality Management and Performance

Total quality management (TQM) is a philosophy that emphasizes on continuous improvement of quality products or services by ensuring they focus on the customer to meet their needs and expectations and improve performance of the organization. There are several elements of connection between total quality management and organizational performance. TQM is the culture of an organization. Culture affects the way human

beings behave; it affects their mindsets and capabilities with the end result of either affecting their productivity positively or negatively. Organizational culture therefore needs to be aligned to strategic quality objectives (Bonvillian and Nowlin, 1995; Ronen and Shenkar, 1985).

A firm that has adopted a continuous improvement culture and one that seeks to satisfy its customers certainly reports an improved organizational performance. Top Leaders encourage employee participation in decision making, ensure information is efficient, establish communication measures among the management and customers and above all support their employees to develop. Empowered and motivated employees have a greater potential of improving performance. The success of all other integral TQM factors such as customer focus, continuous improvement, employee involvement, process management, and others lie in top management support (Spencer, 1994). Top management will create a competitive operating system that has the right technologies, enhanced organizational layout, improved process design and the right human resources Management will tap into the best raw materials and equipment to support operations

2.7 Performance Measurement

In a successful total quality organization, performance will be measured when a customer sees improvement in products or services offered or increase in economic value for the stakeholders (Katherine & Cowell, 2010). There are several performance measurement tools that one can use to monitor performance in an organization; balanced scorecard (BSC), Performance prism, Environmental, Social and Governance (ESG) framework,

the Smart performance pyramid, Performance measurement matrix and European Foundation for quality management (EFQM). For this particular study the main focus was on balanced scorecard. Balanced scorecard (BSC) is based on organization strategy and looks beyond financial measures. The BSC tool is used for the description, implementation and management of the strategy at all the departments of the organization. This tool enables to develop a better system of performance measurement which is different from those only using financial measurements (Schwartz, 2005). The scorecard enables organizations to function in their best long term interest by giving them a more comprehensive view of business. The BSC is consists of four perspectives which interprets the vision and strategy of a business; financial perspective, customer perspectives, learning and growth perspective and internal processes perspective.

Customer perspective focuses on the manner in which the company wants to be viewed by its customers. The financial perspective focuses on the manner in which the company wishes to be perceived by its shareholders. The learning and growth perspective focuses on changes which need to be implemented by the company if it is to make its vision come true. The perception of the internal business process defines business processes which the company needs to adopt so as to satisfy its customers and shareholders (Nelson and Gary 2012). A good balanced scorecard should have an appropriate mix of performance drivers and outcomes (Kaplan and Norton, 2008). Learning and growth involves hiring experienced consultants, training employees so that they can guide existing employees (Kaplan and Norton 2008). This approach motivates the employees to meet and exceed their targets. It promotes powerful professional and personal development. The

motivational theories define the basic human needs as achievement orientation, growth and development (Armstrong 2005). Globally, the importance and challenges of balance scorecard implementation has been acknowledged in various studies

2.8 Empirical studies

Table 2.1 Empirical Studies

Author & title	Focus of paper	Findings	Research gap
<p>Hendricks & Singhal, (1997)</p> <p>Does the implementation of an effective TQM program have a positive impact on the operating performance</p>	<p>The study seeks to estimate long term operating implications of the implementation of TQM programs that are effective.</p>	<p>The implementation of effective TQM programs leads to better firm performance</p>	<p>It fills the existing TQM literature gap. The results also outline the expected outcome of an ideal TQM program.</p>
<p>Douglas & Judge, (2001)</p> <p>TQM implementation and competitive advantage; The role of structural Control and exploration.</p>	<p>How the organizational structure influenced its effectiveness of implementation and the resulting competitive advantages gained</p>	<p>The extent to which TQM practices are implemented is positively and significantly related to both the perceived financial performance and industry expert-</p>	<p>It was necessary to determine the level to which TQM practices have been implemented during evaluation</p>

	through TQM.	rated performance	
Kathaara Caroline (2014). TQM Practices and Operational Performance of Commercial Banks in Kenya	To explore the Implementation of TQM practices and operational performance of Commercial bank in Kenya	TQM implementation improves operational performance	There was little empirical research that attempted to explore the effect of TQM on operational performance by examining the relationship between TQM practices and operational performance
Wangai Njimia (2015). TQM and performance of Pharmaceutical Manufacturing and Distributing firms in Kenya	To determine the relationship of TQM and performance in Pharmaceutical manufacturing and distributing firms in Kenya.	The principles of TQM greatly affected performance of pharmaceutical manufacturing and distribution firms	There was need to determine TQM adoption and impact it has in fast growing pharmaceutical manufacturing and distribution industry.

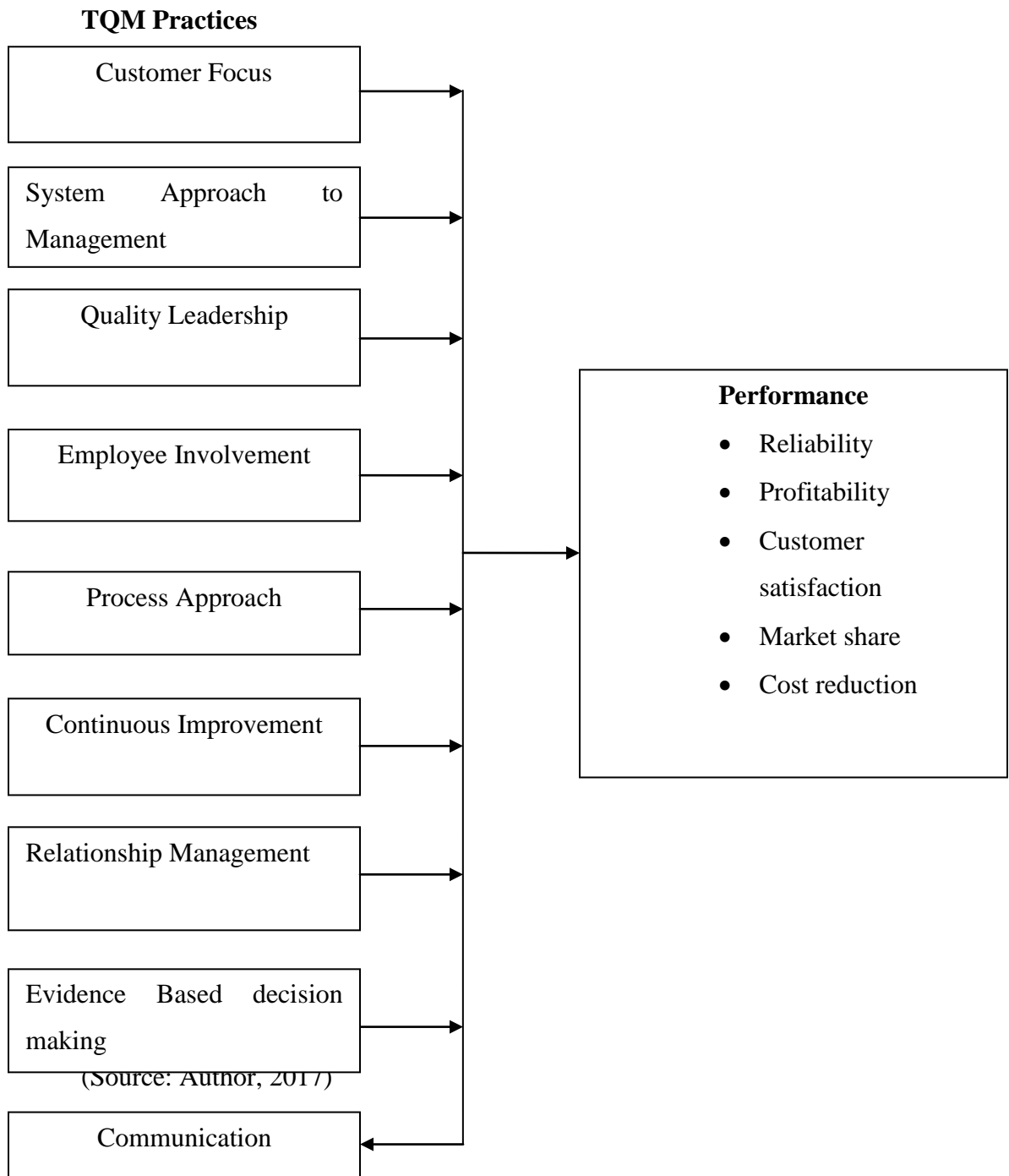
2.9 Conceptual Model

This study was guided by the following Conceptual Model

Figure 2.1 Conceptual Model

Independent Variable

Dependent Variable



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the research design adopted, methods of data collection and analysis employed to answer the research questions have been presented.

3.2 Research Design

A descriptive research design was used in the study. According to Cooper and Schindler (2000), descriptive research design is concerned with In-depth information about a particular phenomenon; details about where, what and who. The design was an appropriate approach because the main interest of the study was to determine the influence of Total Quality Management Practices and Performance of TVET institutions in Nairobi.

3.3 Population

The target population of the study consisted of TVET Institutions in Nairobi. Currently there are 151 accredited TVET Institutions (Technical and Vocational Education and Training Authority (TVETA, 2017) from which a human resource manager or administrator was drawn, at least one respondent from each institution. A census survey was done on all the registered TVET Institutions.

3.4 Data collection

The study used primary data using a structured questionnaire. The questionnaire consisted of both closed and open-ended questions. Some of the items in the

questionnaire were measured using five-point Likert scale to ensure ease of data computation and consistency (Brah and Lim, 2006). The data collection instrument was administered by the researcher to the selected respondents. Adequate instructions and explanations were done. Appendix one, Section A of the questionnaire obtained general information about the institution. Section B obtained data on TQM Implementation, Section C sought to obtain data on TQM practices. Section D obtained data on barriers to TQM Implementation and Section E obtained data on the Performance measurement.

3.5 Data Analysis

Data was checked for completeness and consistency after collection. Both qualitative and quantitative approaches were used for data analysis. Quantitative data was analyzed using descriptive statistics; standard deviation, frequency, mean and percentages to identify major patterns and profile characteristics from the data and multiple regression analysis using statistical package for social scientists (SPSS). Multiple regression analysis was used to determine the relationship between total quality management practices and performance of TVET Institutions in Nairobi. The model used for this study was in form of; $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9 + e$

Where Y is the dependent variable Performance, X is the independent variable TQM practices. β_0 is the Y intercept. $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$ and β_9 are the coefficients of the variables; x_1 = customer focus, x_2 = leadership, x_3 = process approach, x_4 = employee involvement, x_5 = continuous improvement, x_6 = evidence based decision making, x_7 = relationship management, x_8 = system approach to management, x_9 = communication and e = standard error. Qualitative data was analyzed using content analysis which entailed

getting views about the barriers to TQM implementation in the institutions so as to bring out common views from the various responses that were collected.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis, findings and the discussions with regards to the research objectives. The findings were analyzed using the mean and standard deviations, regression analysis and presented in form of frequency distributions, charts and tables

4.1.1 Response Rate

The study utilized primary data gathered from the questionnaires dropped and picked by the researcher. The questionnaires targeted human resource managers and administrators of TVET Institutions in Nairobi. A total of 125 out of 151 questionnaires were completed and returned. This represents 83% response rate which was used to draw conclusions. From the table below the response rate was 125 (83%).The researcher deemed this as adequate and sufficient for the purpose of data analysis.

4.1.2 Respondents Position

A representation of respondents' position from the population of the 125 respondents from TVET Institutions, 64% of the respondents was Human Resource managers whereas 61% were Administrators.

4.1.3 Classification of Institutions

Representation of respondents' classification of Institutions, indicate that 90% of the institutions were private, 8% were government based (public) and 2% were faith based institutions, showing diversity and representation of all Institutions.

4.2 TQM Implementation

The researcher sought to determine whether the TVET Institutions sampled were familiar with Total Quality Management concept and practices or not. The findings were that 108 institutions responded that they were familiar with Total Quality Management concepts and practices. The 108 institutions represent 86.4% as shown in Table 4.1

Table 4.1 TQM Familiarity in concepts and practices

Valid	Frequency	Percent	Mean	Standard deviation
YES	108	86.4	1.1360	0.34417
NO	17	13.6		
TOTAL	125	100		

(Source: Research Data 2017)

4.2.1 Has the Institution implemented TQM?

The questionnaire sought to determine whether the TVET Institutions sampled had implemented Total Quality Management or not. The findings were that 86 out of 125 institutions had implemented TQM in their operations while 39 institutions had not implemented TQM. The 86 institutions represent 68.8% and the 39 institutions represent 31.2% as shown in Table 4.2.

Table 4.2 TQM Implementation in Institutions

Valid	Frequency	Percent	Mean	Standard Deviation
YES	86	68.8	1.3120	0.446517
NO	39	31.2		
TOTAL	125	100		

(Source: Research Data 2017)

4.2.2 Factors that led to TQM Implementation in the Institutions

There are many factors that can make an institution to implement TQM. In this case the researcher sought to determine whether the factors had influenced institutions to implement TQM. The institutions' decision to implement had a mean of 4.7120. Being the highest indicated that institutions' implemented TQM on their own, without any pressure from the environment. Demand for quality by customers also led to TQM implementation in the institutions indicated by a mean of 4.4720. Some of the institutions agreed to a great extent that top management commitment led to TQM implementation indicated by a mean of 4.3760. Competitive pressure to improve product or service quality led to TQM implementation to a great extent, this was indicated by a mean of 4.3440. Government pressure on the other hand was considered a factor to TQM implementation to a small extent indicated by a mean of 2.1920. The results are shown in table 4.3

Table 4.3 Factors that led to TQM Implementation

Factors	Mean	Standard deviation
The institutions decision to implement	4.7120	0.45465
Demand for quality by customers	4.4720	0.51706
Top management commitment	4.3760	0.50264
Competitive pressure to improve product/service quality	4.3440	0.49357
Government Pressure	2.1920	0.79002

(Source: Research Data 2017)

4.2.3 How long TQM has been implemented in the Institutions

From the table below 42 institutions have implemented TQM for a period of 1-3 years (33.6%), 18 institutions for a period of 4-6 years (14.4%) and 26 institutions for a period of more than 6 years (20.8%). The mean and standard deviation of the results was 1.9360 and 1.4959 respectively. 31.2% represented 39 institutions who responded not applicable.

Table 4.4 How long has TQM been implemented

Years	Frequency	Percent
1-3 years	42	33.6%
4-6 years	18	14.4%
More than 6 years	26	20.8%
Not applicable	39	31.2%
Total	125	100.0

(Source: Research Data 2017)

4.2.4 Quality Standard Certification

The questionnaire sought to determine whether the TVET Institutions sampled had achieved a recognized quality standard certification. The findings were that 48.8% of the institutions had acquired quality standard certification ISO 9001:2008, and 51.2% of the institutions had not acquired the quality certificate but noted down that they were registered by Ministry of Education and acquired registration numbers to that effect, and the quality certification was a work in progress. The mean and standard deviation of results were 1.5120 and 0.50187 respectively. The findings were shown in table 4.5

Table 4.5 Quality Standard Certification

		Frequency	Percent	Mean	Standard Deviation
Valid	YES	61	48.8	1.5120	0.50187
	NO	64	51.2		
	Total	125	100.0		

(Source: Research Data, 2017)

4.2.5 TQM Manual

The researcher sought to determine whether the TVET Institutions sampled had a TQM manual with procedures to be followed for every work process. The findings were that 90 out of 125 institutions had TQM manuals in their institutions while 35 institutions did not have TQM manuals. The 90 institutions represent 72% and the 35 institutions represent 28% as shown in Table 4.6

Table 4.6 TQM Manual

		Frequency	Percent	Mean	Standard Deviation
id	YES	90	72.0	1.2800	0.45081
	NO	35	28.0		
	Total	125	100.0		

Source: Research Data (2017)

4.2.6 Educational Training Program

The researcher sought to determine whether the TVET Institutions sampled carry out educational training programs on TQM. The findings were similar with 69% of the institutions agreeing to train their members of staff, as well as management staff and 31% of the respondents do not train their members of staff and management. The mean and standard deviation of the results were 1.3120 and 0.46517 respectively.

4.2.7 Benefits derived from TQM Implementation

There are many benefits that can be derived from the implementation of TQM initiatives. The respondents were asked to respond appropriately on a yes or no option. The results are shown in table 4.7. The firms that had implemented TQM initiatives had realized increase in employee morale represented by 58.4% while 28% felt that employee morale had not been increased by implementation of TQM, because employee morale cannot be grounded only on quality but many factors as well. Respondents agreed with the fact that Defects levels reduced as a result of TQM implementation, the factor became beneficial

because work processes became smooth and errors were minimized indicating acceptance of all institutions by 100%, profitability increased noted by 86.4% acceptance, stated by private institutions, quality made processes smooth, defects reduced and everyone knows what is expected of them so there is no waste of resources as a result cash is saved. Cost efficiency improved represented by acceptance of 100%, this can be noted by reduction in waste that makes it costly to keep repeating work processes, with the right instruction and processes cost is saved greatly. Some of the respondents felt implementation of TQM cannot lead to reduced labor turnover because an employee will leave an organization whether or not changes are made; it always has to do with their own personal reasons. This was represented by 58.4% of respondents who said No to the above.

Table 4.7 Benefits derived from TQM Implementation

	N	YES	NO
Increased employee morale	125	58.4%	28%
defects level reduced	125	100%	0%
profitability increased	125	86.4%	0%
cost efficiency improved	125	100%	0%
reduced labor turnover	125	0%	58.4%
Valid N (listwise)	125		

(Source: Research Data 2017)

4.3 Total Quality Management Practices

The study needed to demonstrate the extent to which the Institutions practiced different aspects of total quality management practices. The TQM practices were studied in terms of; Customer Focus, Employee involvement; Quality leadership; Process Approach; Evidence based decision making; Relationship management; System approach to management; Communication; and Continuous improvement. The results are shown in the table below

Table 4.8: Total Quality Management Practices Results

	TQM PRACTICES	N	MEAN	STD DEV
	Customer Focus			
i	The Institution has a proper customer feedback mechanism used for improvement	125	4.80	1.40
ii	The Institution takes in keen interest to the customers' complaints and addresses them.	125	4.53	1.53
iii	We understand the needs of our customers and ensure maximum satisfaction	125	4.70	1.49
iv	The institution undertakes customer orientation	125	4.58	1.59
	Employee Involvement			
i.	High level of ethics and integrity among employees	125	4.94	1.44
ii.	Employees are highly committed to quality improvement	125	4.80	1.40
iii.	Employees are engaged in every business processes	125	4.78	1.41

	and motivated			
iv.	Employees are educated and trained towards quality	125	4.92	1.27
	Quality Leadership			
i.	Leaders in the organization have power to strengthen the process in which work is completed by staff	125	5.00	1.00
ii.	The institution ensures products are innovative and satisfy existing and latent requirement	125	4.69	1.46
iii.	Management takes upper hand in implementation of quality processes and training in the institution	125	4.69	1.46
iv.	The institutions leadership ensures continuous quality improvement in meeting customer requirements	125	4.71	1.45
	Process Approach			
i.	Every employee in the institution is given clear work instructions	125	4.55	1.49
ii.	During process planning a lot of effort is made to prevent errors	125	4.73	1.44
iii.	The institution underlines on nonstop changes of quality value in all work processes	125	4.41	1.49
	Evidence Based Decision Making			
i.	Problems are solved from a process view point rather than pointing view	125	4.61	1.70
ii.	Top management principles take into account the opinions of lower management while making	125	4.52	1.76

	decisions concerning the institution			
iii.	The institution ensures that the data collected is correct, reliable to all parties concerned in decision making	125	4.48	1.70
iv.	Decision are made based on factual analysis backed up with intuition	125	4.75	1.43
Relationship Management				
i.	Our institution ensures that suppliers meet quality specifications and maintain high standards	125	4.80	1.39
ii.	We rate suppliers based on services and product quality	125	4.45	1.54
iii.	Our institution works closely with suppliers to improve and maintain long term partnerships	125	4.99	1.89
iv.	We conduct supplier audits regularly	125	4.76	1.42
System Approach to Management				
i.	The institution continuously improves the system through evaluation and measurement	125	4.73	1.44
ii.	Top management understands organizational capabilities and establishes resource constraints prior to action	125	4.76	1.42
iii.	The institution emphasizes on better understanding of the responsibilities and roles necessary for achieving common goals	125	4.60	1.62

	Communication			
i.	TQM implementation is effectively communicated to all members of staff	125	4.39	1.82
ii.	The achievements of students are constantly reported	125	4.71	1.55
iii.	Our institution emphasizes on effective communication among employees	125	4.70	1.45
iv.	All employees in the institution have access to information and data	125	4.60	1.62
v.	Objectives that top management wants to achieve is communicated clearly	125	4.63	1.57
	Continuous Improvement			
i.	Use of customer complaints as a method to initiate improvements in current processes	125	4.60	1.62
ii.	The institution evaluates the performance of suppliers	125	4.43	1.49
iii.	Regular departmental and employee appraisals carried out	125	4.59	1.61
iv.	The institution undertakes quality audit and evaluation regularly		4.63	1.51

(Source: Research Data, 2017)

Customer focus practice findings above shows that the Institutions have a proper customer feedback mechanism for improvement; mean of 4.80, take in keen interests of customers to a moderate extent; mean of 4.52, employees understand the needs of their

customers to ensure maximum satisfaction to a moderate extent: mean of 4.70 and undertake customer orientation to a moderate extent: mean of 4.58. The standard deviation of all the components is greater than one ($S.D > 1$) showing variations on the opinions of the respondents.

Findings on employee involvement practice suggest that to a moderate extent, employees are committed to quality improvement in the institutions: mean of 4.80, employees are encouraged to uphold ethics and integrity among employees to a great extent: mean of 4.94, employees are engaged in every business process and are motivated; mean of 4.78 and employees are trained and educated towards quality; mean of 4.92. Standard deviation for the practice is greater than one showing high variations among respondents. This finding support Birdi et al. (1997) who noted that there are variety of environmental and organizational factors that influence training in the organizations and support from management has a lot to contribute to the training and development. He also emphasized on the complication of relationships between organizational and environmental factors as critical elements to the continuous learning culture in organizations.

Quality Leadership practice suggest that to a great extent leaders in the institution have power to strengthen the processes in work completed by staff: mean of 5.00, this is because management takes upper hand in implementation of quality processes as well as training: mean of 4.69, they encourage employees to uphold continuous quality improvement in meeting customer requirements: mean of 4.71 and they ensure products are innovative and satisfy the existing customers: mean of 4.69. Standard deviation for

the practice is greater than one showing high variations among respondents. TQM necessitates full commitment from top management who realize that quality is not just a cost reduction project but a long term venture. Ishikawa (1985) pointed out, for quality to be implemented; top management support should be shown by adopting the lead role.

Process Approach findings from the above table indicate that all institutions give clear work instructions to employees: mean of 4.55, this is to ensure a lot of effort is made to reduce errors during processing: mean of 4.73 and they focus on nonstop changes of quality value in all work processes: mean of 4.41. Standard deviation for the practice is greater than one showing high variations among respondents.

Evidence based decision making practice findings show that to a great extent problems are solved from a process view rather than a pointing view in the institutions: mean of 4.61, management takes into account the opinions of lower management while making decision: mean of 4.52, they ensure that the data collected is correct, reliable to all parties in decision making: mean of 4.48 and decisions made in the institution are based on factual analysis backed by intuition: mean of 4.75. Standard deviation for the practice is greater than one showing high variations among respondents.

Relationship management practice suggests that to a great extent the institutions ensure that suppliers meet quality specification and maintain high standards: mean of 4.80, they rate suppliers based on services and product quality: mean of 4.45, conduct supplier audits regularly: mean of 4.76 and the institutions work closely with suppliers to improve

and maintain long term relationships: mean of 4.99. Standard deviation for the practice is greater than one showing high variations among respondents

Systems Approach to Management practice findings show that the institutions improve their systems through evaluation and measurement: mean of 4.73, top management understand organizational capabilities and establish resource constraints prior to action: mean of 4.76, the institutions emphasize on better understanding of the roles needed to achieve common goals: mean of 4.60. Standard deviation for the practice is greater than one showing high variations among respondents

Communication practice suggests that the objectives that the institutions want to achieve is highly communicated: mean of 4.39, they emphasize on effective communication among employees: mean of 4.71, the achievements of students are constantly reported: mean of 4.70, employees have access to information and data: mean of 4.60 and TQM implementation is effectively communicated to all members of staff: mean of 4.63. Standard deviation for the practice is greater than one showing high variations among respondent.

On continuous improvement practice, findings show that the institutions use customer complaints as a method to initiate improvements in current processes: mean of 4.60, the institutions undertake quality audits and evaluation: mean of 4.43, to improve the quality of products, consequently, the management conducts regular departmental and employee appraisals to brief and evaluate how the continuous improvements plans is going on in

the institution: mean of 4.59. The institutions evaluate performance of suppliers regularly: mean of 4.63. Variation of opinions of respondents is evident as the standard deviation is greater than one.

There seems to be an agreement with Deming, Feigenbaum, Ishikawa, and Juran that the aim of quality management is to decrease price and enhance customer satisfaction. This means that the findings will support the resource based view theory that the competitive advantage arising in distinction to a superior price structure or being able to create value for customers by differentiating products and by producing products that better satisfy the requirements of customers, there is the potential for differentiation.

4.4 Barriers to TQM Implementation

The study sought to establish the barriers to TQM implementation at TVET Institutions. A number of challenges were mentioned including: Employees resistance to change, lack of understanding of the TQM concepts and practices, lack of proper communication from top management on what is expected, funds was a major challenge stating implementing TQM is costly and needs an institution which is stable in funds, starting the implementation process from the bottom to the top, stating it takes too much time and slow results in the process, lack of trained employees on the TQM concepts making it difficult to implement what is not understood, lack of serious commitment from both parties and attitude towards new change. The respondents also pointed out that lack of employee involvement affected implementation of TQM. This implies that TQM implementation is affected by people. Institutions should strive for commitment, have

open communication about the changes they want to make and align them with their goals, vision and mission statements.

4.5 Relationship between TQM Practices and Performance

The researcher conducted a regression analysis to determine the relationship between TQM practices and performance of TVET Institutions in Nairobi. The researcher applied Statistical Package for Social Sciences (SPSS) to enter, code, and calculate the measurements of the multiple regressions for the study which was in form of: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + E$ Where β_0 is the model's constant, β_1 to β_9 are the model's coefficients and Y is performance. X_1 =Customer Focus, X_2 =Employee involvement, X_3 =Process approach, X_4 = Evidence based decision making, X_5 = relationship management, X_6 = system approach to management, X_7 = continuous improvement, X_8 = communication and X_9 = quality leadership. E is the error term. The results of the regression were presented in the table below.

Table 4.9 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.869 ^a	.756	.740	.19298

a. Predictors: (Constant), TQM Practices

Source: Research Data (2017)

The value of R^2 is 0.756; revealing 75.6% of variability in TVET Institutions performance is accounted for by the prudent management of TQM practices. This is an indication that the quality practices play a significant role in determining the performance of TVET Institutions. The value of adjusted R^2 is 0.740. This adjusted measure indicates 74% of the variability in the performance of Institutions due to the fitted model. The analysis of variance is used for testing whether the model is fit for prediction.

In Table 4.10 below the results indicate that since the p-value is less than level of significance $\alpha = 0.05$, it means that there is no significant difference between the TQM practices among the TVET Institutions and therefore the model is fit for prediction of performance of the institutions.

Table 4.10 ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.272	9	1.808	48.547	.000 ^b
	Residual	5.251	115	.037		
	Total	21.523	124			

dependent Variable: PERFORMANCE MEASUREMENT

Predictors: (Constant), TQM Practices

(Source: Research Data 2017)

The Significance value is .000 which is less than 0.05 thus the model is statistically significant in predicting how TQM practices influence the performance of TVET Institutions in Nairobi.

Table 4.11 Estimation of Regression Coefficient					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.053	.351		.151	.880
X1	-.237	.053	-.308	-4.510	.000
X2	.170	.058	.167	2.932	.004
X3	-.075	.071	-.099	-1.060	.291
X4	.029	.048	.033	.616	.539
X5	.326	.073	.378	4.481	.000
X6	.500	.060	.589	8.281	.000
X7	.232	.070	.304	3.332	.001
X8	-.157	.074	-.188	-2.121	.036
X9	.167	.120	.062	1.391	.166

Note: Dependent Variable – Performance; X1 = customer focus, X2 = employee involvement, X3 = process approach, X4 = evidence based decision making, X5 = relationship management, X6 = system approach to management, X7 = continuous improvement, X8 = communication, X9 = quality leadership

(Source: Research Data, 2017)

The coefficient of each of the independent variable ($X_1 - X_9$) is significant at 5% significance level because the p-value is less than the critical value of 1.979. The coefficient of quality leadership in the TQM is the highest of the independent variables. and this means that a unit increase in the quality leadership will increase performance by 0.500 units. It is evident that there is a constant value of 0.053 which denotes the

Coefficient of quality leadership in the TQM is the highest of the independent variables and this means that a unit increase in the quality leadership will increase performance by 0.500 units. It is evident that we have a constant value of 0.053 which denotes the performance value when the TQM practices are held constant. Results the study derived a model that can be used to measure the performance of TVET Institutions in Nairobi. The following is the model; $Y = \beta_0 + \beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8+ \beta_9X_9 + e$

4.6 Performance Measurement

Table 4.12 shows that the organization profits had improved by a mean of 3.392, standard deviation 1.37311. Research findings indicate employee morale was high by a mean of 3.68, standard deviation 0.46835. A mean and standard deviation of 4.416 and 0.49488 respectively, indicate there is a culture of excellence in the Institution. The institution's market share also increased noted by a mean and standard deviation of 3.04 and 1.71521 respectively. Research findings indicated that customer base increased and was noted by mean and standard deviation of 3.768 and 0.42381 respectively. The asset base was noted to have increased; a mean of 2.968 and standard deviation 1.51304. Communication within the company has increased; a mean of 4.232 and standard deviation 0.42381. Research findings indicated that institutions resources are well managed; mean of 4.248, standard deviation 0.43359. Institutions have well laid out strategies; mean of 4.2, standard deviation 0.40161. The institutions have an operational process that aid in continuous improvement; a mean of 4.216, standard deviation 0.41317.

Table 4.12 Institution's Performance Measurement Results

Statement	MEAN	STD DEV
Profits have improved	3.3920	1.37311
Employee morale is high	3.6800	0.46835
There is a culture of excellence in the institution	4.4160	0.49488
Our market share has increased	3.0400	1.71521
Our customer base increased	3.7680	0.42381
Asset base has increased	2.9680	1.51304
Communication within the company has increased	4.2320	0.42381
Our resources are well managed organization has a well laid out strategy	4.2480	0.43359
The institution has a well laid out strategy	4.2000	0.40161
The institution has an operational process that aid in continuous improvement	4.2160	0.41317

(Source; Research Data 2017)

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The study presents the summary of findings on TQM practices and performance in TVET Institutions in Nairobi, Includes the conclusions and recommendations made based on the findings of the study.

5.2 Summary of Findings

The main intent of this research was to determine the relationship between total quality management practices and performance of TVET Institutions in Nairobi. The study satisfied its four objectives as per the findings. On the question of whether the firms had adopted TQM in their operations, 68.8% of the respondents answered to the affirmative as shown in Table 4.2, meaning that most institutions sampled had recognized the importance of TQM practices as a catalyst to improving the performance of the firms. It was found that if TQM is properly implemented; it derives variety of benefits such; as reduced defects levels, increase in profitability for private institutions, improved cost efficiency and increased employee morale. Other included benefits mentioned that were not part of the category include; better communication within the departments, customer satisfaction by meeting their needs, and improved decision making process.

Quality Leadership was found to be the highest driving factor that influenced the need to adopt TQM in the institutions and this cannot be achieved without the support and commitment of top management. The findings on quality leadership imply that the

institutions practice quality principle and are oriented towards TQM implementation. Employee involvement was a major factor to be considered when implementing TQM because employees are valuable assets that an institution cannot afford to lose. The study finding revealed that continuous improvement was highly practiced in the institutions through performance appraisals, continuous improvement policy and improvement programs. Majority of the institutions practice process approach to a moderate extent. Process approach impacts activities on customers and stakeholders, evaluates risks and consequences.

From the research findings, the institutions used process approach to a moderate extent and for effective process approach to TQM there was need to put effort to ensure they linked selected approaches and strategies to quality management. The sampled TVET Institutions rate their suppliers based on services and product quality, thus it can be concluded that they practice supplier relationship management. The study findings also revealed that customer focus was practiced to a moderate extent. The Institutions understand the needs of their customers to a moderate extent, takes in keen interest to their complaints to a moderate extent, undertake customer orientation to a moderate extent and proper customer feedback mechanism for improvement is used to a moderate extent. This implies that the Institutions needs to focus more on customer needs and how they will satisfy them because they are the determinants of failure or success.

Research findings of this study reveal that the major barrier to TQM implementation was setting up the whole program from the bottom to the top. Management should ensure that

all members of staff are aware of TQM concepts and practices. Most organization do not implement all the practices at once, they adopt one by one in bits and only those that support their culture which leads to ineffective implementation. A lot of effort should be put in place to lessen the challenges for a successful TQM implementation.

5.3 Conclusions

The implementation of quality management system increased profitability, effective reduction in waste, improved cost efficiency and customer retention as a result of customer satisfaction. Implementation of TQM facilitated Quality leadership to provide the necessary resources to meet the new requirements resulting from quality management systems, provided conducive working environment to employee involvement in quality management process, influenced the whole process of qualified suppliers selection and certification for quality material, creates strategic plans to be used for achieving superior quality in the institution and that has inspired staff and management in using the resources effectively and efficiently towards quality excellence. Top management Commitment and Leadership Practices like the demonstration of seriousness & commitment by all managers to quality and TQM initiatives starting at the top with the leaders of the organization also influenced firm's performance improvement very highly.

Top Management Support and Direction Practices which includes use of quality improvement concepts by senior managers, top management been the driving force behind TQM and top management active participation in decision implementation have a major influence on performance. Quality management has affected employees quality of life, institutions spends a large amount of its annual budget on employees training and

development on total quality management systems; employees have the responsibility to make decisions that affect them and their work teams. Quality management systems (QMS) have promoted the freedom of employees to use their initiative in matters of customer delivery. There was widespread involvement and communication to employees on all matters that concern their job and organization performance, reward systems that support employee performance, participation, initiative and fostering of team-work have been instituted in the institutions.

With implementation of total quality management institutions have entered into relationship management with suppliers so as to ensure uninterrupted processes and continuous performance of the institutions, The institutions are aware of the benefits derived from establishing supplier relationship or partnerships, The institutions have enhanced communication with key suppliers with the aim of improving their provision of the required supplies, The institutions promote supplier quality cooperation, frequently share with suppliers' information such as their expectations and needs which results in operational performance.

5.4 Recommendations

The study confirmed a significant relationship between TQM Practices and performance of TVET Institutions in Nairobi. The institutions should be encouraged to embrace TQM Practices more in order to benefit from the concept. TQM system implementation has been associated with benefits like; reduced levels of cost, increased profitability and employee satisfaction. It will be important for the TVET Institutions to look for areas in

TQM Practices where they can optimize on the mentioned benefits so that they can improve on their performance. The study revealed that Customer Focus is a critical factor in implementing TQM hence it is recommended that the institutions' focus on customers and ensure their needs are met, members of staff should be involved in the process and ensure complaints from customers are solved, because they are the success or failure factors in the institutions, above all management should ensure that quality is achieved. The Institutions should ensure continuous improvement is achieved as this makes the institutions to be innovative and quality managers to develop appropriate continuous programs that allow quality at all levels in the institution.

It is therefore recommended that management upholds continuous improvement practice to ensure continuous flow of processes. Since Employee involvement is critical in achieving Total quality, it is recommended for management to ensure employees are trained and training is conducted at all levels in the institution. Communication is also a critical factor in achieving Total quality, everything starts with communication and it's important for management to ensure each member of staff has clear work instructions, they are aware of what is expected of them, clear communication on TQM implementation. The study therefore recommends that management and quality managers develop effective, flexible and appropriate communication systems that will allow easy flow of quality information to all levels in the organization.

5.5 Limitations of the study

The study experienced challenges in terms of time and finance. Furthermore, the study did not cover all institutions as some respondents did not return their filled questionnaires. The study was restricted to one area of operation of the institutions; management. The study could be extended to other areas or stakeholders such as members of staff so that a detailed insight could be attained.

5.6 Suggestions for further research

A study should be conducted on the same topic to determine if there is a relationship between TQM practices and performance in public and private universities in Kenya.

Additionally, a study should be carried out to determine critical success factors that influence the performance of the institutions. The study should exploit in-depth information to highlight the stumbling blocks and hindrances to effective Total Quality Management practices implementation.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

Introduction

This questionnaire has been designed for the sole purpose of collecting data on TQM Practices and Performance of TVET Institutions. The data collected will be treated with high degree of confidentiality and it is meant for academic purpose only.

SECTION A: GENERAL INFORMATION

Please tick where appropriate.

1) Kindly classify your Institution among these choices;

Government based Institution ()

Faith based Institution ()

Private Institution ()

Others Specify

2) Kindly indicate your Designation and Department

3) Are you familiar with TQM concepts and practices? Yes () No ()

SECTION B: TQM IMPLEMENTATION

1) Has the Institution Implemented TQM?

Yes () No ()

2) To what extent have these factors led your institution to implement TQM?

Please tick appropriately. Use the scale of 5 = very great extent, 4 = great extent,

3 = moderate extent, 2 = small extent, 1 = very small extent

		1	2	3	4	5
1	Demand for quality by customers					

2	Top management commitment					
3	Government pressure					
4	Competitive pressure to improve product/service quality					
5	The institutions decision to implement					

3) How long has TQM been implemented in the Institution?

1-3 years () 4-6 years () more than 6 years () not applicable ()

4) Has your Institution achieved a recognized quality standard certification? If yes state the certification achieved

Yes () No () I don't Know ()

5) Does the institution have a TQM manual with procedures to be followed?

Yes () No () I don't know ()

6) Is there a TQM educational Training program in the institution for?

Management Team () Yes () No

Members of staff () Yes () No

7) Kindly indicate the benefits you derived from the implementation of TQM in your Institution. Please tick appropriately.

		YES	NO
1	Increased employee morale		
2	Defects level reduced		
3	Profitability increased		
4	Cost efficiency improved		

5	Reduced labor turnover		
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Others indicate.....
.....
.....
.....

SECTION C: TQM PRACTICES

To what extent do you concur with the following statements? Use the scale of 5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree, 1 = strongly disagree.

	Customer focus	1	2	3	4	5
1	The Institution has a proper customer feedback mechanism used for improvement					
2	The Institution takes in keen interest to the customers' complaints and addresses them.					
3	We understand the needs of our customers and ensure maximum satisfaction					
4	The institution undertakes customer orientation					
	Employee Involvement					
1	High level of ethics and integrity among employees					
2	Employees are highly committed to quality improvement					

3	Employees are engaged in every business processes and motivated					
4	Employees are educated and trained towards quality					
	Quality Leadership					
1	Leaders in the organization have power to strengthen the process in which work is completed by staff					
2	The institution ensures products are innovative and satisfy existing and latent requirement					
3	Management takes upper hand in implementation of quality processes and training in the institution					
4	The institutions leadership ensures continuous quality improvement in meeting customer requirements					
	Process Approach					
1	Every employee in the institution is given clear work instructions					
2	During process planning a lot of effort is made to prevent errors					
3	The institution underlines on nonstop					

	changes of quality value in all work processes					
	Evidence Based Decision Making					
1	Problems are solved from a process view point rather than pointing view					
2	Top management principles take into account the opinions of lower management while making decisions concerning the institution					
3	The institution ensures that the data collected is correct, reliable to all parties concerned in decision making					
4	Decision are made based on factual analysis backed up with intuition					
	Relationship Management					
1	Our institution ensures that suppliers meet quality specifications and maintain high standards					
2	We rate suppliers based on services and product quality					
3	Our institution works closely with suppliers to improve and maintain long term partnerships					

4	We conduct supplier audits regularly					
	System Approach to Management					
1	The institution continuously improves the system through evaluation and measurement					
2	Top management understands organizational capabilities and establishes resource constraints prior to action					
3	The institution emphasizes on better understanding of the responsibilities and roles necessary for achieving common goals					
	Communication					
1	TQM implementation is effectively communicated to all members of staff					
2	The achievements of students are constantly reported					
3	Our institution emphasizes on effective communication among employees					
4	All employees in the institution have access to information and data					
5	Objectives that top management wants to achieve is communicated clearly					
	Continuous Improvement					
1	Customer complaints are used in improving					

	current processes					
2	The institution evaluates the performance of suppliers					
3	Regular departmental and employee appraisals carried out					
4	The institution undertakes quality audit and evaluation regularly					

SECTION D: BARRIERS TO TQM IMPLEMENTATION

What are some of the barriers that your institution experienced in the process of TQM implementation?

.....

.....

.....

.....

SECTION E: PERFORMANCE MEASUREMENT

To what extent do you agree with the following? Please tick appropriately; 5 = strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree

Statement	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
Our organization profits have					

Improved					
Employee morale is high					
There is a culture of excellence in the organization					
The institutions' market share has increased					
The Institutions' customer base has increased					
The institutions' asset base has increased					
Communication within the company has increased					
Our organization's resources are managed well					
The Institution has a well laid out strategy					
The Institution has an operational process that aid in continuous improvement					

APPENDIX II: TVET INSTITUTIONS IN NAIROBI

1	Academy of Graphic technology
2	Administration Police Training College
3	Africa Digital Media Institute
4	African Film and Television Talent Training Institute
5	Bishop Kariuki Institute of Management
6	New Dawn College
7	Vision Institute of Professionals
8	Webbs Institute
9	Zenith Institute
10	Kenya Institute of Professional Management
11	Vera Beauty College and Fashion Institute
12	Uzuri Institute
13	Unity College of Professional Studies
14	Valentine School of Cake
15	Vision Empowerment Training Institute
16	St. Kizito Vocational Training Institute
17	Regional Institute of Business Management
18	Railways Training Institute
19	Premese Africa College
20	Temple College
21	St. Joseph Mukasa College
22	Intra Global Training Institute

23	P.C Kinyanjui Technical Training Institute
24	Oshwal College
25	Eastlands College of Technology
26	Kenya Institute of Social Work and Community Development
27	GSU Training School
28	Institute of Advanced Technology
29	Highland State College
30	IDS College
31	Kenya Institute of Development Studies
32	Kentrac College
33	Kenya Institute of Business and Counseling Studies
34	Kreston College
35	Kenya Institute of Professional Counseling
36	College of Human Resource Management
37	College of Insurance
38	Crownways Institute
39	Bridge College
40	Equator Institute of Technology and Professional Studies
41	Bridge world College
42	Bonjour Institute
43	Amani Counseling and Training Institute
44	Kenya School of Monetary Studies
45	Air Travel and Related Studies

46	Nairobi College of Bread and Confectionery Technology
47	Kings College
48	Genesis Institute of Professional Studies
49	Kenya Red Cross Training Institute
50	Pinnacle Business School
51	Beauty Point College
52	Nairobi Aviation College
53	Music Technology Academy
54	Meat Training Institute
55	Makini College
56	Nairobi Institute of Technology
57	Nairobi Technical Training Institute
58	Nairobi Women's Hospital College
59	Nairobi County Institute of Management and Logistics
60	Rasban College
61	Riruta Business College
62	Sapta College
63	Panorama College of Business Studies
64	P.C.E.A Kibera Emmanuel Technical Training Centre
65	Regional Centre of Mapping of Development Resources
66	Royal Business School
67	SCLP Samaj Australian College
68	Shangtao Media College

69	Rene Descartes Training Institute
70	NYS Vocational Training Institute
71	Ganatra Plant and Equipment Institute
72	Kenya Aeronautical College
73	Neet Training College
74	United Africa College
75	Strathmore Institute of Management and Technology
76	The New Dimension College
77	St. Teresa College
78	SOS Technical Training Institute
79	Technical Institute
80	Stedmak Hospitality Training College
81	Star College of Management Studies
82	YMCA – National Training Institute
83	Wondrous College of Professional Studies
84	Grandlys School of Hairdressing and Beauty Therapy
85	Imani Marianists Maria Training Centre
86	Waithaka Vocational Training Centre
87	Vlan College of Business and Technology
88	Simon Page College of Marketing
89	St. Therese Vocational Training Centre
90	Summit Institute of Professionals
91	Strive and Excel College

92	Stockwell School of Finance
93	The Fonelab College
94	Trident School of Technical And Professional Studies
95	Tricent School of Medical and Health Sciences
96	eMobilis Mobile Technology Institute
97	Atlas College
98	Azizi Hair and Beauty College
99	Carlile College
100	East African College
101	East African School of Aviation
102	Excel Global College
103	Dima College
104	East African Institute of Professional Counseling
105	Don Bosco Boys Technical Training Center
106	East Africa Institute of Certified Studies
107	East Africa College of Tourism and Hospitality Management
108	Equip Africa Institute
109	Maarifa College
110	Komarock College of Business Studies
111	Kenya Technical Trainers College
112	Kenya Institute of Security and Criminal Justice
113	Kenya Institute of Finance and Applied Management
114	Kenya Christian Industrial Training Institute

115	Monarch Institute of Technology
116	Mother Bertilla Vocational Training School
117	Leadership and Management College
118	Mishkan School of Fine Art
119	Beam International Training Centre
120	Miramar International College
121	Cofa Institute of Technology
122	Magnatech Computer Institute
123	Belmont International College
124	Mcensal School of Fashion Design
125	Mahanaim Educational Institute