Assessing Total Quality Management Practices of the Ethiopian National Defense Building Construction at Addis Ababa

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Declaration

I Jamal Ali declare that this thesis submission is my own work towards the award of the degree of Masters of Arts in Logistics and supply chain management that to be the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university for masters except where due acknowledgement has been made in the text.

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Date----------

Certification

This is to certify that Jemal Ali has carried out this research work on the topic entitled 'Assessment of Total Quality Management practice in Ethiopian National Defense Building Construction at Addis Ababa' under my supervision that is his own original work and has not been presented to any other university for similar degree award and it can be submitted for partial fulfillment of the requirements for the award of Masters of Art Degree in Logistics and Supply Chain Management.

Tariku Jabana (PhD)

Signature----------

Date----------

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The Researcher

Acronyms and Abbreviations

TQM: Total Quality Management

PDCA: Plan –Do – Check – Act

QA: Quality Assurance

QC: Quality Control

SPC: Statistical Process Control

SPSS: Statistical Package for the Social Sciences

COQ: Cost of Quality

DCE: Defense Construction Enterprise

CQI: Continuous Quality Improvement

OD: Organizational Development.

EFQM: European Foundation of Quality Management

JIT: Just in Time

SCM: Supply Chain Management

Abstract

Total Quality Management (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 society. The purpose of this study was to assess the practice of total quality management in Ethiopian national defense building construction at Addis Ababa. By this intention the study trailed mixed both quantitative and qualitative methodological approach that considered necessary for this kind of research which deals with underlying issues that are usually can be understood in a both manner. The data was collected using primary and secondary data. A population of 60 workers comprising both senior and junior staff was considered for the study. Due to the relatively small number of workers at building construction the whole population was used by census method as sampling techniques for the study. The sample techniques were census sample techniques used because data is gathered on every member of the population for questionnaires and purposive sampling techniques for interview would be used and also data analysis for interview and questionnaires by concurrently descriptive method. Findings of the study show that the Ethiopian national defense building construction has a gap in total quality management practice applied within the department, training or capacity building in the concept of Total Quality Management principles, strategy and policy designed for TQM implementation problems, the concept of understanding values, vision and mission according to total quality management concept and organizational performance hence the study suggests that the Ethiopian national defense building construction shall work cooperatively with employees to success of firm. Management and leadership should be committed for internal performance measurement base techniques, customer focus, total involvement and team work sprit, capacity building of employee's, integration with stakeholders, applying the principles of total quality management as it is needed and to establish common understanding of values, vision, and mission that shall to improve the total quality management practice for continuous improvement of building construction.

Key words: Total Quality Management, Organization, Leadership, Performance, customer

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CHAPTER ONE

1. Introduction

Any organization in any line of business requires a quality management program or some sort of quality program that is instituted from executive management down to the lowest level employee. While each particular function within an organization requires quality processes modeled after its own unique requirements this individual quality processes should be designed and established based on the principles of the overall quality management program. One of such quality programs is Total Quality Management (TQM).

Total Quality Management (TQM) is a management philosophy which focuses on the work process and people with the major concern for satisfying customers and improving the organizational performance. It involves the proper coordination of work processes which allows for continuous improvement in all business units with the aim of meeting or surpassing customer's expectations (Peters, 1999)

1.1. Background of the study

Martinez (1998) mentioned that Total quality management is widely used and developed around the world as such the concept of total quality was developed through the huge evolution of quality took place in the United States

Zairi (2007) Total quality management was coined in the first instance in the US military. Defenders of total quality management diffused the concept through business consultancies in Western countries and its influence spread from manufacturing to the construction and service industries and finally to education.

Total Quality Management popularly known as (TQM) was pioneered initially by the quality Guru Edward Deming (1986) and further strengthened by Juran and Philip Crosby (1989) these three luminaries can be considered to be the triple pillars of total quality management who spread the movement like a current of air. Total Quality Management is a sound methodology for continuous improvement which has established itself very well over the years. It is deep rooted in the philosophy that status quo is painful and indeed going backwards, In-built in the minds all of us should have a strong desire to improve. One of the main principles of the total quality

management concept is to achieve customer satisfaction and this is an important objective for any organization including Defense institutions..

The Defense institution differs from the manufacturing in such a way that makes introducing total quality management more challenging. Just like manufacturing industry the Defense institution also suffers from problems such as variety of missions, time, and location. Therefore total quality management implementation is one of the proper solutions both an operational philosophy and a methodology in which there is a strong commitment to customers, employees, and improvement. It goes well beyond the traditional limits of quality assurance and quality control (Chase 1993).

At this moment when the world is characterized by liberalization, globalization and knowledgeable environment quality has become the main issue for organizations to gain competitive advantage. Hence the birth of quality based on concepts and doctrines of Gurus quality developed and followed by different philosophers or writers such as Deming (1986) Juran and Crosby (1989) have been abundant contribution by people in all circumstances starting from academician and researchers to practitioners. Based on this several researchers by the help of empirical studies the total quality management have come out with different dimensions, such as, top management commitment and leadership quality policy, training, product/ service design, supplier quality management, process management, work force management, corporate quality management and strategic quality management are some of examples. The implication of this showed us service quality has emerged as an important field of study in the organizational behavior contexts.

Building construction was established under Defense Construction Enterprise (DCE) in 2010 by Ethiopian ministry of council regulation NO 185/2010 as public enterprise and national defense as supervising authority of the enterprise. Prior to its establishment as an Enterprise, it was structured as an Engineering Department under the Ministry of National Defense responsible for the construction of Army Hospitals, Depot, Camps, and other infrastructure activities owned by the Ministry of National Defense. After it's establishment the building construction has mainly been undertaking various infrastructural projects to satisfy of national defense infrastructural needs based on building construction for the Armed forces in parallel, it has also been engaged at

infrastructures and buildings projects that have been undertaking in different part of the country (w.w.w.dce-et.com).

1.2. Statement of the problem

Total quality management is applicable to any organization irrespective of size and motives even the public sector organization are fast adopting the ideology in order to make them effective in meeting public demands. However, the adoption of the ideology by most organization has been hampered due to their non compliance with the procedures and principles of Total quality management implementation. While some organization run Total quality management like a program which they expect to function and perform the magic all by itself others have used a half hearted approach to it by using some bits and pieces of the principles. This has accounted for the failure of most organization in meeting up to their expected target from implementing this ideology (Ghobadian, 1994).

According to Gulledge and Chavusholu (2008) managers need data for measurement and control similar to the construction companies are one of those organizations who have a complicated system because the parties were involved in this companies activities usually are huge therefore the needs for proper system to manage and monitor all processes and guide the people becomes the priorities of those companies also the tools used to measure quality is very important when they are used periodically to follow trends of the quality of service and to know what should be done to improve this service through analysis of customers complains and suggestions.

According to Thiagarajan (2001) total quality management is still considered new philosophy and its principles and tools are still unfamiliar for a large number of organizations managers and employees. The existed theoretical research that focused on total quality management is still insufficient to create an in-depth understanding for the term of total quality management. Different strategic reasons such as globalization directly enhance the interest of developing countries in quality so focus is on total quality management to gain economic benefits at these developing countries. Moreover customers in different countries were demanding services and products with high quality characteristics more than ever. All of these reasons generate the new wave of quality interest at different business organizations all over the world.

According to Zairi, (2003) although there are several studies about total quality management and its relation with practice , strategic quality planning and performance of the organizations there

was an ambiguity to apply total quality management practices concerning top management, leaders and employee's specifically in developing countries.

This research work took an experience and addressed by Ahmed Mohammed Al-Musleh (2010) the important issues related to the implantation of Total Quality Management in the building construction sector in the State of Qatar. The main aim of the study is to develop and present to the construction companies in Qatar Total quality management could not only improve the understanding of Total Quality Management concept within their sector but also help in developing the processes, procedures and operations by employing total quality management framework in all sections of a building construction

According to the annual report of 2017-2018 Since the inception of the Ethiopian National Defense Building Construction gained long experience and considerable success during the past one decade there has been no assessment of Total Quality Management Practices and its effectiveness unless described the extent of Quality control , Quality assurance and Quality inspection of product or end result.

Hence this paper tried to assess and define the overall total quality management practices and techniques and its impact on organizational performance of Ethiopian national defense building construction to answer the following questions:

1.3 Research questions

- How the total quality management is being practiced at Ethiopian national defiance building construction?
- What the building construction owned strategy and policy for effective total quality management practices?
- What principle or elements of total quality management applied within the building construction?
- How total quality management takes place as organizational performance for continuous improvement within the building construction?

1.4 Objectives of the study

1.4.1 General objectives

The general objectives of the study would be to assess the practice of total quality management in Ethiopian national defense Construction enterprise of building construction

1.4.2 Specific objectives

The specific objectives of the study are:

- To assess the total quality management practices within the building construction
- To analyze the extent to which total quality management practices in strategy and policy within building construction
- To analyze the implementation of total quality management principles.
- To identify organizational performance of the building construction for continuous improvement.

1.5 Significance of the study

Generally this study would have the following significances: This study would be enabled the management of Ethiopian national defense building construction management to identify key total quality management practices which could be employed to bring improvement in organizational performance. The study would be also helped management of the construction to identify ineffective total quality management practices that exist in the building construction and how to remedy these ineffective practices. The study would be offered management the opportunity to know whether ineffective total quality management practices affect or decrease quality performance at building construction, the study would be throw more light on total quality management practices as a determining tools for quality performance and organizational performance as a whole. This study would be encouraged the new researcher for their further more study in the field.

1.6 Scope of the study

The delimitation of this study is on geographical, timely and conceptually concerned. Ethiopian national defense building construction which is located in Addis Ababa together with military units however this research study would not include any other military units. . The defense construction enterprise composed of five major units include design, Building, road, irrigation and dam andbuilding construction projects hence this research would be focused on building construction of the enterprises during 2017-2018. On the other hand the study would be focused on current total quality management practice based on the above basic questions with in construction not concerned other related issues like Kaizen, BPR and Six Sigma.

1.7 Limitation of the study

Some limitations that were influenced the study. Firstly the researcher was facing obstacle on easily finding secondary data because of poor filling system and lack of well organized availability of secondary data in the department. Secondly even though a number of resource and studies made on the building construction practices around the world, generally this research is limited to total quality management practices study at Ethiopian national defense building construction. Somehow the nature of the study regarding it is a new concept in our country and lack of former study in Ethiopian National Defense Building Construction Department could be happened

1.8 Definition of terms and operational definition

Total Quality Management: it can be defined as a set of techniques and procedures used to Improve efficiency, reliability and quality

Quality: quality is meeting the customer requirements moreover and aiming at increasing Customer's satisfaction

Customer: it implies those who expect satisfaction for their demand

Organization: It implies an instruments created to achieve other ends and as diverse as their creators and the society they serve

Performance: what the company is achieving in relation to its planned business as well as quality product, process measures and meeting customer satisfactions.

1.9 Organization of the study

The research study would be had five chapters. Chapter one would be covered the background to the study, the problem statement, the objectives of the study, research questions, significance of the study, limitations of the study, definition of terms and organization of the study. Chapter two also would be covered the literature review, chapter three would be covered methodology which comprises the study area, the population of the study, data collection procedure, research instrument, research design and data analysis. Chapter four would be considered analysis of data and discussion of results. Chapter five would be examined the summary of the findings, conclusions of the study and recommendations.

CHAPTER TWO

2. Related Literature Review

2.1. Introduction

Total quality management has evolved as a system which can facilitate improvement-efforts' within organizations. Total Quality Management approach is not merely talking about increased profits but more importantly interested in relentless improvement programs where excellence in service and product quality is paramount. This literature review address issues related to the theories, empirical and conceptual review of total quality management the major elements of total quality management, the steps involved in introducing a total quality management system and the major standards of quality management practices in organizations. Total quality management evolved in the 1980s and began to have a major impact on management and engineering approaches to long-term success through customer satisfaction. It is based on the participation of all members of an organization in improving processes, products, service and the culture in which they work outlined the evolution of total quality management as the outcome of four major eras of development. He illustrates the evolutionary process where quality has moved from an initial stage of inspecting, sorting and correcting standards to an era of developing

The construction industry is typified by a uniqueness in every construction project they are single order, single production products. Unlike other industries which usually have a fixed site with similar conditions for production each construction production site always displays different conditions. The life-cycle of a construction project is much longer than the life-cycle of most manufactured products. There is no clear and uniform standard in evaluating the overall construction quality as there is in manufactured items and materials thus construction projects usually are evaluated subjectively. Since construction projects are a single-order design project, the owner usually directly influences the production. The participants in the construction project owner, designer, general contractor, subcontractor, material supplier, etc. differ for each project (Rounds and Chi, 1985).

2.2 Theoretical Literature Reviews

A definition by the US Department of Defense that succinctly captures the essence of the concept is: “total quality management (TQM) utilizes both quantitative (technical) methods and human resource (behavioral) practices to improve material and service inputs intra-and inter organizational processes, and to sharpen the focus on meeting customers’ needs Out of all definitions, a simple definition of total quality management is a meeting of internal and external customer requirements and the main difference between quality and total quality management is that the quality term usually focuses on a temporary process while total quality management is a long term process and adopts a strategic dimension to guide each production, financial, marketing and administrative plan in the direction which support the strategic dimension. In the light of the previous definitions the researcher concluded that the definition of total quality management is not a new concept but in recent years it appears as an official job (Singh and Smith 2004).

Morgan, (1986) stated that organizations were developed to serve society's collective needs efficiently and effectively. He reflects not only our desire to have a coordinated collective societal effort but also a reflection of our ability to coordinate diverse capabilities and talents to produce a useful product. The word, organization, is derived from the Greek word, organon meaning a "tool" or "instrument." Organizations then are instruments created to "achieve other ends” and as diverse as their creators and the society they serve. Because organizations reflect the values of particular leader and the society in which they operate, exploring their culture and dynamics can be a useful way of gaining better understanding of the operations that affect the efficiency and effectiveness of their management practices and productivity.

It is generally agreed that the essence of any organization is the human factor and the center of any organizational activity is the human behavior. The final goal of all organizational processes and functions is to meet the needs of those whom they serve. By the same token in viewing the performance and the dynamics of a certain organization one has to refer to the larger picture: the demographic and/or cultural environment affecting that organization (Krefting, 1985).

Quinn (1990) he stated that, "As societal values change and existing viewpoints alter new models of management emerge." It could be derived from the above that our views of organizations have changed as their operations and dynamics become more complex over time. Anew kind of organizational thinking has emerged to address the changing organizational dynamics and

processes. The focus of managers and leaders has also changed which led to the development of new management models and approaches.

Carr, (1993) analyze Total Quality Management (TQM) or Continuous Quality Improvement (CQI)l, as it is sometimes called is a holistic approach to organizational change that has been gaining an increasing attention in the field of Organization Development (OD).

Although quality improvement has been in existence for quite a whilemany believe that the 90s are indeed the age of quality improvement revolution. More and more organizations are taking quality improvements initiatives in hope of achieving organizational changes that will improve the processes of their organizational systems. Construction enterprises in particular are paying more attention to quality improvement issues than before due to their rapidly changing environment and the new forces dictating their survival. An increasing number of studies in which various aspects of total quality management are examined are starting to take place in OD literature. More and more professionals in the field are talking and writing about Total Quality Management or Continuous Quality Improvement.

2.2.1 Nature of quality

According to Foster (2001) the simple definition of quality is meeting the customer requirements, moreover, and aiming at increasing customer's satisfaction, many organizations have focused on quality and reduced their costs to gain maximum customer satisfaction which means achieving customer satisfaction depends on not only how well and how thoroughly quality actions in the several areas of the organization work individually but also on how well and how thoroughly they work together.

According to (Kusaba 1995, in Fukui. 2003) quality refers to the different workmanship of various activities. Consequently each business or activity has a different definition of quality, for example in sales the term quality is more focused on the services which are provided to customer, while in manufacture, the term quality is more focused on the production process, and in construction, quality refers to both of services provided.

According to Talha (2004) The American Society for quality Control defines quality as "the total features and characteristics of a product or service made or performed according to specification to satisfy customers at the time of purchase and during use" The emphasis in this definition is that the quality is achieving the specification.

According to (Hradesky 1995, in Fukui. 2003), quality is determined by the customer and the marketplace and includes all the product's attributes. Quality includes everything that the client expects and requires and is continuously changing. The definition considered the customers who guide the quality, and changeable according to customer requirements.

Mukherjee (2006) indicates that quality satisfies three Fs- Fit, Form and Function. This is a conventional definition of „quality which is basically confined to a product satisfying the need for the required dimensions, fitment, required form and aesthetics. The product should also be able to fulfill the functions desired to be performed by the product.

From the above definitions, one can conclude that quality is more than a tool or issue used to gain competitive advantage for businesses because it is a matter of survival so most of the quality concepts which mentioned above are focuses on providing a product that satisfy and meet the customer's needs. Quality is therefore extremely necessary for the organizations to ensure that they have delivered their products or services according to the customer expectations and requirements. Moreover, each person has his or her own concept of quality and it is very difficult to give specific definition for quality but there is no doubt and everyone can agree that quality is perfection through control, accuracy and completeness in work. Therefore varieties in quality definitions emphasis that there is no single definition of quality (Hradesky, 1995)

Quinn's (1990) stated total quality management did not come from vacuum but they are insteada product of an evolutionary process in organizational theory and behavior. A description of the various organizational and managerial approaches and models that have taken place throughout time will help provide an informative background about Total Quality Management itself: Moreover, this chronological rundown will help establish a cohesive connection between the time's three junctions: past, present, future as they relate to Organizational theory in general and Total Quality Management in particular.

Total Quality Management is process, measurement, teamwork; people make quality, continuous improvement cycle and prevention. Total quality management can also be defined as the application of quality principles for the integration of all functions and processes within the firm (Ross, 1993)

The theoretical essence of the Deming approach to total quality management concerns the creation of an organizational system that fosters cooperation and learning for facilitating the implementation of process management practices, which, in turn, leads to continuous

improvement of processes, products, and services as well as to employee fulfillment, both of which are critical to customer satisfaction, and ultimately, to firm survival (Anderson 1994)

Deming (1986) stressed the responsibilities of top management to take the lead in changing processes and systems. Leadership plays in ensuring the success of quality management, because it is the top management's responsibility to create and communicate vision to move the firm toward continuous improvement. Top management is responsible for most quality problems; it should give employees clear standards for what is considered acceptable work, and provide the methods to achieve it. These methods include an appropriate working environment and climate for work-free of faultfinding, blame or fear.

Deming (1986) also emphasized the importance of identification and measurement of customer requirements, creation of supplier partnership, use of functional teams to identify and solve quality problems, enhancement of employee skills, participation of employees, and pursuit of continuous improvement.

Anderson (1994) developed a theory of quality management underlying the Deming management method. They proposed that: The effectiveness of the Deming management method arises from leadership efforts toward the simultaneous creation of a cooperative and learning organization to facilitate the implementation of process-management practices, which, when implemented, support customer satisfaction and organizational survival through sustained employee fulfillment and continuous improvement of processes, products, and services.

Deming (1986) improve quality lie in the ability to control and manage systems and processes properly, and in the role of management responsibilities in achieving this advocated methodological practices, including the use of specific tools and statistical methods in the design, management, improvement of process, which aim to reduce the inevitable variation that occurs from "common causes" and "special causes" in production.

Common causes" of variations are systemic and are shared by many operators, machines, or products. They include poor product design, non-conforming incoming materials, and poor working conditions. These are the responsibilities of management. "Special causes" relate to the lack of knowledge or skill, or poor performance.

According to Juran (1993) the system of activities directed at achieving delighted customers, empowered employees, higher revenues, and lower costs he believed that main quality problems are due to management rather than workers. The attainment of quality requires activities in all

functions of a firm. Firm-wide assessment of quality, supplier quality management, using statistical methods, quality information system, and competitive benchmarking are essential to quality improvement. Juran's approach is emphasis on team circles and self-managing teams and project work, which can promote quality improvement, improve communication between management and employees coordination, and improve coordination between employees. He also emphasized the importance of top management commitment and empowerment, participation, recognition and rewards.

Total Quality Management is very important to understand customer needs. This requirement applies to all involved in marketing, design, manufacture, and services. Identifying customer needs requires more vigorous analysis and understanding to ensure the product meets customers' needs and is fit for its intended use, not just meeting product specifications.

Juran (1993) considered quality management as three basic processes of Juran Trilogy Quality control, quality improvement, and quality planning. In his view, the approach to managing for quality consists of: The sporadic problem is detected and acted upon by the process of quality control; the chronic problem requires a different process, namely, quality improvement.

Juran (1993) defined a universal sequence of activities for the three quality processes such as Quality planning, Quality control and Quality improvement.

Crosby (1979) identified a number of important principles and practices for a successful quality improvement program, which include, for example, management participation, management responsibility for quality, employee recognition, education, reduction of the cost of quality (prevention costs, appraisal costs, and failure costs), emphasis on prevention rather than after the event inspection, doing things right the first time, and zero defects.

Crosby (1979) claimed that mistakes are caused by two reasons: Lack of knowledge and lack of attention. Education and training can eliminate the first cause and a personal commitment to excellence (zero defects) and attention to detail will cure the second. Crosby also stressed the importance of management style to successful quality improvement. The key to quality improvement is to change the thinking of top managers-to get them not to accept mistakes and defects as this would in turn reduce work expectations and standards in their jobs. Understanding, commitment, and communication are all essential. Crosby presented the quality management maturity grid which can be used by firms to evaluate their quality management maturity. The five stages are: Uncertainty, awakening, enlightenment, wisdom and certainty.

These stages can be used to assess progress in a number of measurement categories such as management understanding and attitude, quality organization status, problem handling, cost of quality as percentage of sales and summation of firm quality posture. The quality management maturity grid and cost of quality measures are the main tools for managers to evaluate their quality status.

Feigenbaum (1991) an effective system for integrating the quality development, quality maintenance and quality-improvement efforts of the various groups in a firm so as to enable marketing, engineering, production and service at the most economical levels which allow for full customer satisfaction. He claimed that effective quality management consists of four main stages, which means: Setting quality standards;, appraising conformance to these standards; acting when standards are not met and planning for improvement in these standards. The quality chain, he argued, starts with the identification of all customers' requirements and ends only when the product or service is delivered to the customer, who remains satisfied. Thus all functional activities such as marketing, design, purchasing, manufacturing, inspection, shipping, installation and service, etc., are involved in and influence the attainment of quality. Identifying customers' requirements is a fundamental initial point for achieving quality.

Feigenbaum (1991) emphasized that efforts should be made toward the prevention of poor quality rather than detecting it after the event. He argued that quality is an integral part of the day-today work of the line, staff and operatives of a firm. There are two factors affecting product quality: The technological-that is, machines, materials, and processes and the human-that is, operators, foremen and other firm personnel of these two factors the human is greater importance by far. He considered top management commitment, employee participation, supplier quality management, information system, evaluation, communication, use of quality costs, and use of statistical technology to be an essential component of total quality management He argued that employees should be rewarded for their quality improvement suggestions quality is everybody's job. He stated that effective employee training and education should focus on the following three main aspects: Quality attitudes, quality knowledge and quality skills.

Ishikawa (1985) argued that quality management extends beyond the product and encompasses after-sales service, the quality of management, the quality of individuals and the firm itself. He claimed that the success of a firm is highly dependent on treating quality improvement as a never-ending quest. A commitment to continuous improvement can ensure that people will never

stop learning. He advocated employee participation as the key to the successful implementation of total quality management as Conceptual review of Total Quality Management

2.2.2 Total quality management

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

2.3 Empirical Literature Review

An extensive review of literature was carried out to identify the empirical review of total quality management from quality gurus such as Deming (1986) Juran (1993), Crosby (1979), ,Feigenbaum (1991) and Ishikawa (1985) Their propositions are the foundation for understanding the concept of total quality management. The following subsections present the main principles and practices of total quality management proposed by these quality gurus.

According to the previous study by Hellston and Klefsjo, (2000) stated that three important components should be considered in order to implement total quality management these are a documented quality system, teamwork and the use of improvement tools and techniques. They discussed total quality management as a management system consisting of the three interdependent components: values, techniques, and tools. Techniques and tools support the values and together they form a whole. Moreover they said, the implementation of total quality management should begin with the identification of core values that should characterize the organization. The next step is to distinguish techniques that are suitable and support the core values. Then in order to support the techniques found to be suitable tools must be identified and used in an efficient way.

Al-Sehali, (2001) demonstrated that Total Quality Management has become one of the best solutions to overcome construction industry's problems and specification could be used as a gateway to introducing total quality management to many organizations.. Various construction

companies are dismissive about implementing total quality management in order to reduce quality problems in their projects because it is not uncommon for them to consider total quality management to be synonymous with quality assurance (QA). Total quality management becoming more than a way of saving organizations by increasing profitability in a short term. In addition to that total quality management companies enjoy cost- efficiency, flexibility and responsiveness.

A comprehensive survey was carried out by Delgado and A. spinwall (2005) aimed at determining whether the use of improvement tools in the construction industry are an important aspect of continues improvement result showed that, in terms of use, quality, performance measure, and technology tools are common practice in the industry.

Results of a study carried out by Arawati, (2004) aimed to identifying the relationship between TQM and overall performance of the organizations show there is a strong and positive association between total quality management, overall organization performance and customer satisfaction and they suggest that an emphasis on quality would result in organization gains. The previous studies regarding total quality management considered the concept of the total quality management as one of the best solutions to overcome the construction industry problems. Moreover, many studies focus on importance of the tools and techniques in implementation total quality management philosophy

According to Zaire and Simintiras (1991) total quality management is a combination of total system process towards doing the right things (externally), everything right (internally) at the first time and all the time with economic viability considered at each stage of each process.

Hand (1992) in his study argued that total quality management as a strategic approach to producing the best products and services through a process of continuous improvement of every aspect of a company's operation.Moreover, he notes that total quality management is a radically new way of managing business a way that challenges management’s traditional role. Total quality management is a system of behavior which embraces every individual within an organization: it seeks to include each person within a framework of shared beliefs and values and to instill a common aim and purpose. Its driving principle is continuous improvement.

Bricknell (1996) states that, "One of the precepts of the total quality management is that by concentrating on getting things right the first time other benefits such as lower costs, greater efficiencies, improved market share, increased employee motivation and satisfaction,

For Brah, (2002) total quality management is a set of guiding principles and practices as well as a philosophy which address not only the management of quality but also the quality of management. He suggest that the previous studies regarding Total quality management considered the concept of the Total quality management as one of the best solutions to overcome the construction industry problems. Moreover, many studies focus on importance of the principles, tools and techniques in implementation Total quality management philosophy.

2.4 Principle and elements of total quality management

Before an organization can rip the benefit from total quality management implementation, some principle would have to be enshrined into the organization's culture. This section of the literature reviews these principles in relation to total quality management implementation (Sachdeva, 2007). The principles are listed below:

1. Top management commitment and leadership

According to Kaynak (2003) total quality management requires effective change in organizational culture and this can only be made possible with the deep involvement/commitment of management to the organization's strategy of continuous improvement, open communication and cooperation throughout the organization. Total quality management implementation improves the organizational performance by influencing other total quality management dimensions 'to be successful in promoting business efficiency and effectiveness must start at the top with the chief executive.

Cooper and Ellram (1993) identified leadership as being critical in effecting organizational change most especially in the areas of building effecting relationship with suppliers and others involved in the process of value delivery. The commitment of leadership to the total quality management strategy as shown in their daily disposition to work will go a long way in motivating employees to deliver quality services that exceeds the expectation of customers.

Andrle (1994) noted that 'the implementation of total quality management requires a clear long term leadership commitment. To him, long term relationship with satisfied customers is an asset to the organization thus management must be committed to it. He also stressed the importance of management in providing a customer focused support system' such as measurements, rewards and recognition for satisfying customers with the aim of building a positive relationship with customers.

2 Cultural change

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

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

3. Customer focus

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

Filippini and Forza (1998) explained that it is necessary for organization to maintain a close link with their customers in order to know their requirements and to measure how it has been successful in meeting up to customers' requirements.

According to Muffatto and Panizzolo (1995) a high level of customer satisfaction is obtained solely by providing services or products whose features will satisfy customer's requirements or needs. The customer's needs and expectation serve to drive development of new service offering. This is due to the fact that customers determine the quality level of service delivered.

Jablonski, (1992) noted that organizations are made up of a series of internal suppliers and customers. To him, this forms the quality chain of the company and it implies that every employee is a potential customer and supplier in the course of production. The process of production is structured in a way where each process have needs and expectation which must be fulfilled by others in the network of production. The effective fulfillment of these needs leads to the production of quality goods and services.

4. Total involvement of people

In the traditional sense, employee involvement was conceived to mean a 'feeling of psychological ownership among organizational members'. Unlike what obtains in the TQM ideology, the traditional employee involvement is narrow-minded; it is job-centered rather than process-centered. The TQM approach involves 'achieving broad employee interest, participation and contribution in the process of quality management'. The concept assumes a companywide quality culture, which gives autonomy or a level of freedom to employees in taking decisions that affect their job. Thus, employees are encouraged to perform function such as information processing, problem solving and decision making (Dimitriades, 2000).

This is supported by Ross (1994), who noted that intrinsic motivation is at the heart of total quality management where empowerment and involvement in decision making is viewed as essential for sustained result. The main aim for the total involvement of employee is to boost internal and external customer's satisfaction by developing a flexible environment which allows for innovation.

5. Continuous improvement

Turney and Anderson (1989) defined continuous improvement means a commitment to constant examination of the technical and administrative process in search of better methods, continuous

improvement as the relentless pursuit of improvement in the delivery of value to customers. This was who argued that customer satisfaction can be attained only through the relentless improvement of processes that create product or service. Total quality management involves the design into the process of production, a system of continuous improvement. This contains regular cycles of planning, execution and evaluation.

According to Uffatto and Panizzolo (1995) the focus on continuous improvement will lead to the formation of formidable team whose membership is determined by their work on the detailed knowledge of the process, and their ability to take improvement action. Total quality management is concerned with the continuous improvement in all the process of production, from the levels of planning and decision making to the execution of work by the front line staff. The principle behind the idea of continuous improvement is basically the idea that mistakes can be avoided and defects can be prevented.

According to Stahl (1995) continuous improvement refers to the constant refinement and improvement of products, services and organizational system to yield improved value to customers. He further explained that the continuous look for ways in improving quality of product or service in the absence of customers complain may prevent a future problem. The continuous improvement process aims to identify and eliminate the cause of a mistake in order to prevent its reoccurrence.

Fuentes (2004) explained that organizations operating in a dynamic environment are liable to carry up continuous improvement in its operation; they explained that the face of competition changes faster in this environment as a result of the changes in customers' needs, competitors' activities and service/product innovation.

In other hand, KhurramHashmi (2010) in his study "Introduction and Implementation of Total quality Management" guarantees that Total Quality Management is mainly concerned with continuous improvement in all work starting from strategic planning and decision making till the executive work elements. Also, he argues that seven critical aspects of managing and performing as an organizations leadership, Strategic planning, customer focuses measurement, analysis, and knowledge management, workforce focus, operations focus and results.

Figure: 1 TQM and Continuous improvement

Source:Baldrige Model by (Denis Leonard and Bill Denney, 2007)

6. Training

Training helps in preparing employees towards managing the total quality management ideology in the process of production. Training equips people with the necessary skills and techniques of quality improvement. It is argued to be a powerful building block of business in the achievement of its aims and objectives. Through training, employees are able to identify improvement opportunities as it is directed at providing necessary skills and knowledge for all employees to be able to contribute to ongoing quality improvement process of production that training and development programmer should not be seen as a onetime event but a lifelong process. (Stahl 1995).

7. Team work

Dale (1994) noted that a well structured team will aid the effective production of goods and services through the integration of activities involved in the process of production team work is a key feature of involvement. To him, team work aids the commitment of the workforce to the organizational goals and objectives.

The researcher believes it is essential to have a team made of people with right attitudinal disposition to working in groups so as to realize the gains of quality management. Team work is a way of stimulating positive work attitude, which includes loyalty to the organization and a focus on organizational goals.

Martinez (1999) noted that teamwork contributes to the generation of improvements that are proposed by employees. To them, the proposed improvements have a way of changing the attitudes of employees that are resistance to change.

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

2.5 Strategic Quality Planning

Strategic quality planning is defined by Juran&Gryna (1993) and indicates the main concepts: Strategic Quality Planning is a structured process for establishing long-range quality goals at the highest levels of the organization and defining the means to be used to reach those goals". Krumwiede&Charles (2006) emphasized that the strategic aspects of quality are recognized and embraced by top management in the strategic planning process.

Strategic Planning allows firms to set clear priorities and allocate resources for the most important things. The focus of a total quality management practitioner includes a leader's vision of an organization's desired future state, translating vision into strategy, goals and policy, strategy development, and strategy into reality Strategic Planning stresses that long-term organizational sustainability and a competitive environment are key strategic issues that need to be integral parts of an organization's overall planning, it has been stated that there is a positive link between strategic planning for quality and quality information and analysis.

2.5.1The Total Quality Management (TQM) Strategy

Four components frequently cited as critical to a successful total quality management strategy are customer satisfaction, employee involvement, managerial leadership, and process improvement and control. Marketing theory has long recognized the importance of customer satisfaction to the business organization. Quality focused organizations must identify their customers (both internal and external), determine the specific needs of these customers, integrate all activities of the organization (including marketing, production, finance and HRM, to satisfy the needs of these customers, and finally, follow up to ensure the customers have been satisfied. JIT, total quality management, and SCM represent alternate approaches to improving the effectiveness and efficiency of an organization's operations function (Sadikoglw, 2009).

The cost of quality is considered by Brun (2010) to be the primary tool for measuring quality. In his approach it is used to track the effectiveness of the total quality management process, select quality improvement projects and provide cost justification to doubters. By bringing together these easily assembled costs of review, inspection, testing, scrap, and rework, one can convince management and others of the need for quality improvement. Cost of quality has received increasing attention in recent years. It is effective in its intended purpose of raising awareness about quality and communicating to management the benefits of total quality management in terms of dollars. Under total quality management systems, product/service design efforts have two objectives: designing manufacturing products and designing quality into the products designing to simplify manufacturing utilizes cross-functional teams to reduce the number of parts per product and standardize the parts which results in more efficient process management by reducing process complexity and process variance

Effective supplier quality management is facilitated by long-term cooperative relationships with a few suppliers as possible to obtain quality materials and/or services. Maintaining a small number of suppliers improves product quality and productivity of buyers by encouraging enhanced supplier commitment to product design and quality. Quality creates not only a price/value advantage over competitors but also enables the firm to charge a higher per/unit sale price through differentiation A strategy of high quality leads to a sustainable competitive advantage Firms competing on quality pursue an operational strategy that controls quality of the product/service and seeks continuous improvement

According to Brun (2010) the term of total quality is essential to the organization's values, vision, and mission, in line with any TQM organization. Therefore, it was essential to find out:

the concept of total quality reflected in the company's values, vision, and mission the quality program is based on policy and strategy and these are regularly updated and improved. Therefore, it was essential to establish the company policy and strategy managed and reviewed on a regular basis. Deploying the organization's policy and strategy needs the adequate and committed availability of resources to ensure the accomplishment of the goals and objectives.

Hence it was essential to establish the necessary resources available for achieving the company's policy and strategy. The successful business results reflect that the policy and strategy are implemented in the right way. This needs the daily control of business results as well as modifying the policy and strategy according to the business results. Therefore, it was essential to find out the company policy and strategy be modified according to business results and continuous improvement.

2.6 Total Quality management and organizational performance:

According to Sadikoglw (2009) Measurement of performance is considered as an essential element at all managerial approaches. Cost and quality are the two main measurements of organizational performance which directly affected by the total quality management practices. He agreed that applying various total quality management practices such as training, process management, customer management, etc. influence employees performance which then directly affect the whole organization performance.

Gharakhani (2013) also indicated that total quality management greatly influences the organizational performance especially in their financial performance. According to the increasing demands to achieve a high quality products and services, organizations have realized the importance of applying total quality management practices to the production processes in order to minimize costs and to create products with high quality characteristics.TQM is recognized as a strategy that considered customers as the main concern, in which it directly aims to provide them with a high quality services and products through adding continuous improvements in the production processes..

Soltani and Wilkinson (2010) found that there exist three main total quality management propositions which are affirmation of quality, individual, firm and the senior managers' functions. The main conclusions that were driven that total quality management is still considered as a new strategy and the main utilized approach to implement total quality management is the quality control approach

Letica (2007) also clarified the impact of total quality management practices on the level of customer satisfaction especially in the sector of public services and from the managers' perspective. The focus were planning in strategic way, management of processes and employees, leadership, customer concern, and measuring on both internal and external customers' satisfaction level for the quality of perceived products and services. This study has indicated that there is a positive relationship between total quality management practices, employees focus with satisfaction levels of customers. The research findings also clarified that there is a strong relation between manager commitment and satisfaction of customers. On the other hand, some total quality management practices such as planning in a strategic way and management of processes has less effect on satisfaction levels of customers.

Key Performance Results in the EFQM Excellence Model (2010) are defined as what the organization is achieving in relation to its planned performance. Essentially the results document the relationship between what organizations do in terms of quality management practices and the results they achieve in several types of outcomes. The business results' category in all quality award models looks at key measures of organizational performance as multiple dimensions including product and service outcomes, financial and market outcomes, customer-focused outcomes, process effectiveness outcomes, workforce-focused outcomes and leadership outcomes.

Most of the previous studiesreport that overall TQM practices have positively been relatedto productivity and manufacturing performance, qualityperformance, employee satisfaction/performance,innovation performance and customer satisfaction/results competitive advantage market share financial performance andaggregate firm performance (Soltani and Wilkinson, 2010)

Leaders in a total quality management system view the firm as a system support employee development establish a multipoint communication among the employees, managers, customers and use information efficiently and effectively. In addition, leaders encourage employee participation in decision-making and empower the employees. Top management commitment and participation in total quality management practices are the most important factors for the success of total quality management practices. Managers should demonstrate more leadership than traditional management behaviors to increase employees' awareness of quality activities in total quality management adoption and practices previous studies have found that leadership

improves operational performance inventory management performance employee performance innovation performance social responsibility and customer results financial performance and overall firm performance (Brun, 2010).

According to Kokali (2013) knowledge and process management effective knowledge management ensures that employees obtain timely reliable, consistent, accurate and necessary data and information as they need to do their job effectively and efficiently in the firm. Only in this way the expected benefits from total quality management practices can be achieved. Process management emphasizes activities, as opposed to results, through a set of methodological and behavioral activities. It includes preventive and proactive approaches to quality management to reduce variations in the process and improve the quality of the product Knowledge and successful process management practices monitor data on quality to manage processes effectively. In this way, turnover rate of purchased materials and inventory can be improved. Errors or mistakes in the processes can also be figured out and corrected on time. The processes are improved by means of controlling the processes periodically and monitoring data on quality continuously. Effective knowledge and process management design minimize the negative effects on the environment. Furthermore, as the processes become prevention oriented, costs are reduced and profit of the firm increases.

Total Quality Management firms should give necessary training to all their employees to improve their proficiencies in their tasks. Effective training in management and improvement in quality bring success for the firms. Employees' effective knowledge and learning capability will provide sustainability of quality management in the firm. Furthermore, learning organizations adapt rapidly to the changes and develop unique behavior, which distinguishes them from other firms and enables them to obtain better results. Quality does not begin in one department or function; it is the responsibility of the whole firm. Training should be given to all employees based on the results of the training needs assessment with effective training; employees know the industry and the structure of the firm. In addition, effective training will improve employees' loyalty to the firm, motivation, and work Performance. If employees are trained on producing reliable and high quality products and/or services, their full participation in the production stage would be more fruitful. Thus, customer satisfaction will increase and customer complaints will reduce (Kokali. 2013).

Total Quality Management firms focus on serving the external customers. They first should know the customers' expectations and requirements and then should offer the products/services, accordingly. By the aid of successful customer focus efforts, production can be arranged with respect to the customers' needs, expectations and complaints. This encourages firms to produce high quality and reliable products/ services on time with increased efficiency and productivity.

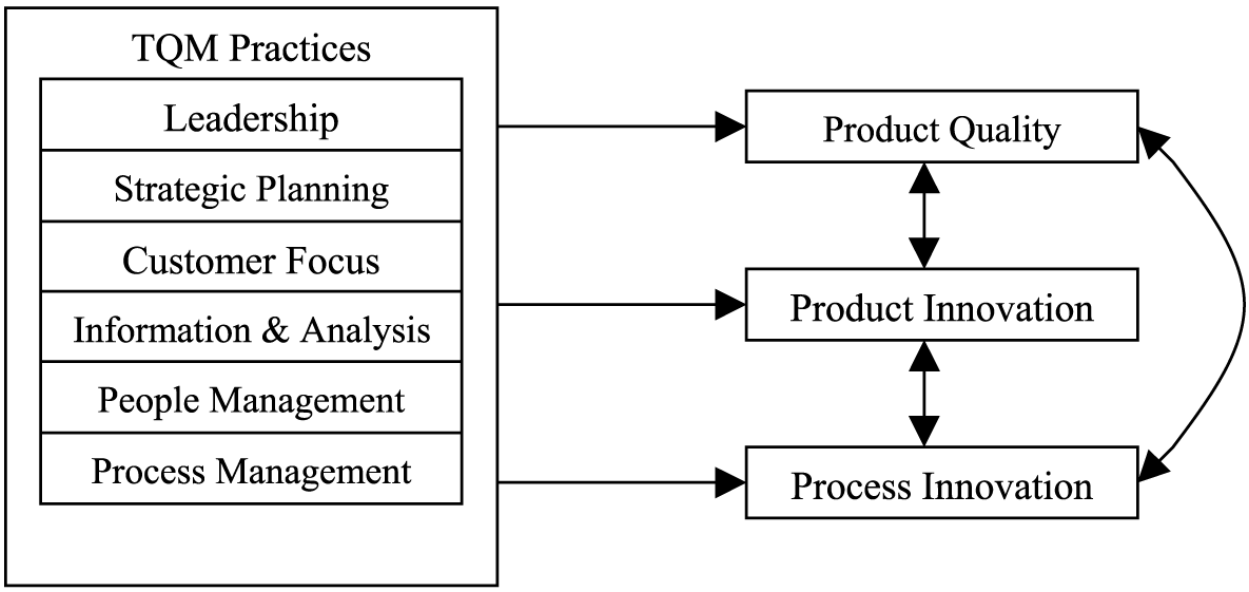
When customer expectations are met, their satisfaction will be increased, and the firm's sales and the market share will increase (Kokali. 2013).

Total quality management and performance suggests that there are conflicting arguments concerning the relationship between total quality management and performance. Arguments that support a positive relationship between total quality management and innovation contend that companies embracing total quality management in their system and culture will provide a fertile environment for innovation because total quality management embodies principles that are congruent with organizational performance. (Dean and Evans, 1994),

According to Prajogo and Sohal (2001) the principle of customer focus encourages organizations to consistently search for new customer needs and expectations, and therefore, leads organizations to be innovative in terms of developing and introducing new products as a continual adaptation to the market's changing needs likewise, continuous improvement encourages change and creative thinking in how work is being organized and conducted. Finally, the principles of empowerment, involvement and teamwork are also substantial in determining the success of organizational performance.

Williams (1992) argues that organizations that focus their strategy on making frequent and fast innovations would not have time to learn about the processes in order to statistically control them to achieve a high level of conformance. While it is difficult to accept that a company can be successful with high performance if it cannot produce products that meet acceptable quality standards, it is argued here that in certain situations, companies have to prioritize quality over innovation or vice versa. This is particularly true when industry and total quality management practice conditions are taken into consideration

Figure 2 TQM practices and organizational performances

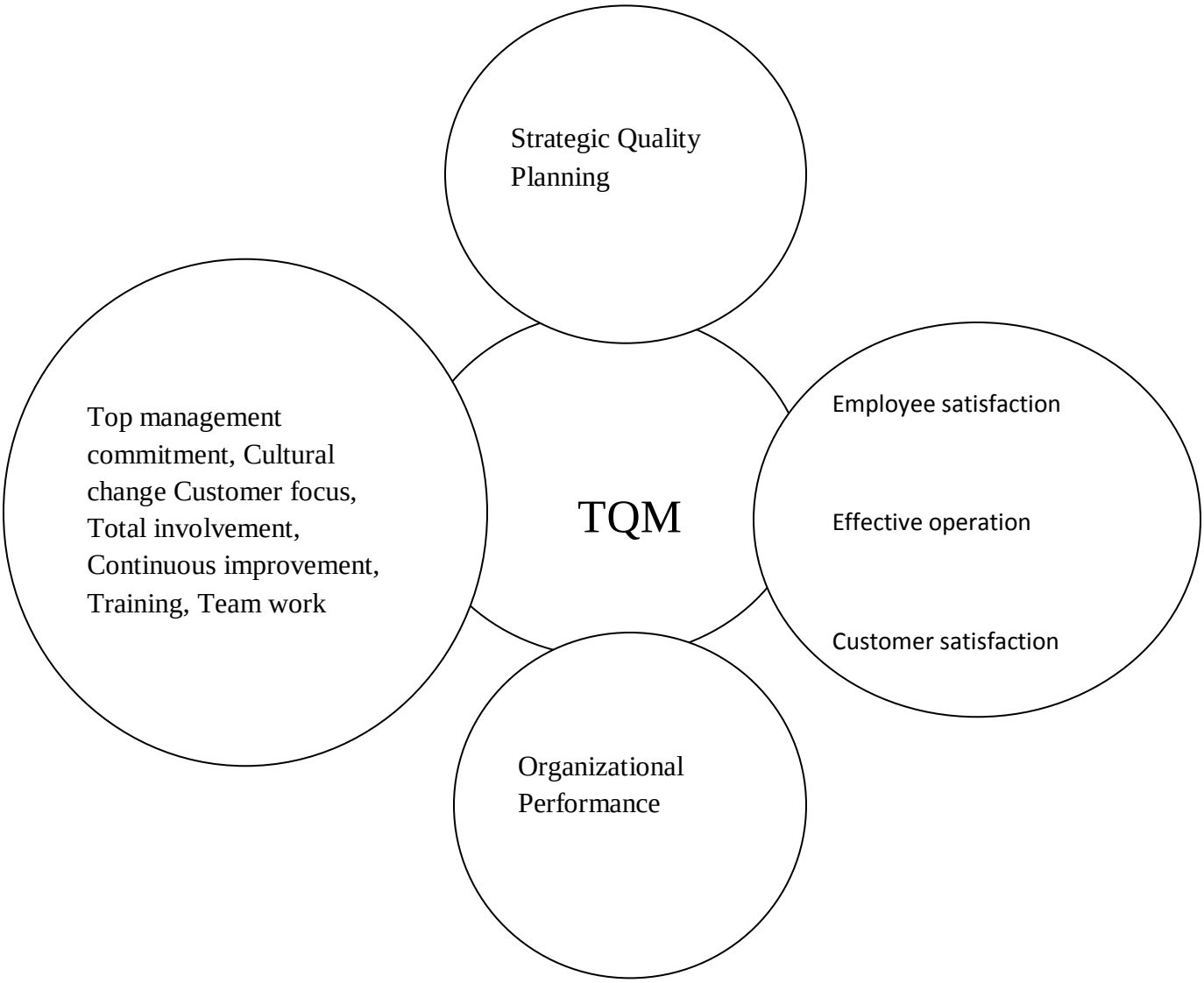


Source:TQM practices, quality and performance (Ahire , 1996).

2.7 Conceptual Frame work for TQM practices

A conceptual frame work is a conceptual model of how one makes logical sense of the relationship among the several results that have been identified as important to the problem and are always part of elements used in research the conceptual review which is used as a framework for this research, while it support the rationale behind the methods used for the research. This gives an insight into how the researchers derived to formulate for this research questions (Sekeran, 2003).

Figure 3 Descriptive models of TQM practices



Source: (Sekeran, 2003).

2.8 Limitations to the implementation of TQM

Asher (1996 identified factors that hinder the implementation of total quality management which include the thought that its implementation can be time consuming, bureaucratic, formalistic, rigid and impersonal. in his research found out that the half hearted implementation of total quality management is a major reason for its failure in most organizations. According to his study, organizations are only willing to implement just those aspects of total quality management which is supported by existing organizational culture. His findings revealed that employees did not feel as part of the decision making process and their ability to make contributions to quality

improvement were restricted due to the limited authority granted them to carry out their activities.

Smith, (2004) explained that total quality management programs have failed because they were 'programs of the month'. According to him, implementing quality throughout an organization is not the result of a formalized programmer but requires a cultural change in the way activities is conducted.

Andrle, (1994) on his own assessment, claims that the adoption of incompatible quality approach by organizations results in the failure of total quality management implementation, he further stressed that the delegation of quality leadership by managers might lead to the development of total quality management bureaucracies that are ineffective like other functional departments.

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

2.9 Identified Literature gap

In this section, what the researcher observed how organizations are discussed in order to give a more complete picture of the concept of total quality managementreally. There are many different ways to estimate the possible benefits of organization and different studies have shown different results. One reason for the different results is that opinion differs about what organization is really and the different definitions of organization. The different opinions concerning lead to different opinions about what should result in it might be create confusion to become the point of view.

According to DheerajMehrotra,(2010) stated that Researchers in the field of Total quality management are usually seeking to find models and theories for continuous improvement. Here is an analysis some work produced in this field, to prove that, all targets and aims are achieved by relying on the same base and principles. Terms may differ from researcher to another, but the result is produced from the same ground

CHAPTER THREE

3. Research Design and Methods

3.1 Introduction

This part of the paper sets out research design and methodology. A specific, related research design is identified to ensure the accomplishment of the set objectives of this study. It may also be stated that the research design and related methods are developed with the aim of obtaining reliable and valid quantitative and qualitative data to answer those research questions, as well as to address the objectives of the study. In addition, the study areas are described; research design and approach discussed; target population, sampling method, and procedures are outlined; data collection procedures, including data sources are described; and statistical techniques or tests will be employed in the analyses of quantitative and qualitative data explanation. Finally, it dwells on ethics which are considered when collecting different types of data on the issues under investigation.

3.2 Description of the study area

The setting of this study is delimited to Total Quality Management practice at Ethiopian National Defense building Construction at Addis Ababa. The national defense construction enterprise building construction is one of the leading construction companies in Ethiopia. It is different from other companies as it work in the most remote and difficult areas of the country. It is dedicated and devoted to build the country. The building construction has been in the business of construction for more than a decade now and still counting. It has already built many modern and top of the art buildings in the whole of Ethiopia. Today the building construction proves to be one of the most popular construction companies around the neighboring countries.

3.3 Research Approach

In this study both quantitative and qualitative research approach are employed. The researcher has used quantitative survey which is followed by qualitative interview and observation. Mixed research methodology is preferred because this combination will create internal validity of the research in social science study areas.

According to Bryman (1988) when quantitative and qualitative research are jointly perused, much more complete accurate of social reality can ensure. The methodology would be used in carrying out the research study by describing research process, research design, population and sample size, data collection approach and data analysis.

3.4 Research design

Almost every research project is different in terms of associated objectives, thus different researchers use different types of research design. The research design of this study is descriptive type of research design because it will describe the current total quality management practice at Defense building construction

3.5 Population and sample size

According to the data from personnel office 2017-2018 Ethiopian National Defense Construction enterprise building construction unit has 60 populations at the whole then Census method used to the complete enumeration of a unit when relatively the population is small this method is applicable. It is not difficult to study the whole population to complete the study. The researcher would be focused on personnel of junior and senior staff employee and management who has direct contact with the study area in the whole the population sample is manageable. One of the major advantages of census method is the accuracy as each and every unit of the population is studied When more and more data are collected the degree of correctness of the information also increase the results based on this method are less biased (Rubin and Babbie, 2001).

3.6 Data sources types and collection procedures

Primary data would be focused on collect data's directly through interviews, discussions and questionnaires, from team leaders. Basic source for data collection for the purpose of this research study were primary data. Primary data is a data which would be obtained from original source through questionnaires (Using Likert-Scale) and interviews (semi-structured) of participants. Primary data (interview and Questionnaire) Structured interview has been prepared and arranged orderly in understandable, precise and clear manner. It should be clear, to the point, and able to avoid leading. Time table for interview with management had been arranged before the time of interviewing considering their interest to discuss on the matter. Questionnaire was

also prepared before the time of distribution and the researcher has discussed with those selected workers how to respond correctly, to minimize risks of improper responses. Secondary data would be collected from relevant books, magazines, annual reports of building construction and plans of the unit and internet source. The study also would be used secondary data in collecting information. The sources of the secondary data include books, the internet, articles, annual reports and journals among others. This would be help to identify how others have defined and measured key concepts, the data sources of others would be used to discover how this research is related to other studies.

3.7 Data collection procedure

The data collection procedure covered Ethiopian national defense construction enterprise of building construction department. All stakeholders of building construction department management have been included in the procedure. After obtaining the complete list of employees, census method used in the whole population would be taking. The exact location of the selected employees would be communicated face to face. Based on this the deployed data collectors would be directly went to the employees of the selected participants and made them fill the questionnaire. Besides, their leaders and supervisors would also make to interview by face to face. Then to collected all data lastly analysis and interpret would be done.

3.8 Validity and Reliability Test

The researcher assured and considered the validity and reliability issues during his procedure in order to meet the requirements for the objectives of his study.

3.8.1 Validity test

As to measurement validities in the study, Neuman (2011) describes measurement validity as how well an empirical indicator and the conceptual definition of the construct that the indicator is supposed to measure fit together. In other words validity refers to the soundness of the interpretation of scores from a test the most important consideration in measurement.

Although there are many types of validity the authors are generally agreed that there are a few common techniques used. In the light of the objectives of this research; content, face, criterion and construct validities would be considered. Construct validity for example demonstrates the high level of construct validity of question items in the questionnaires being homogenous in

relation to each other. With factor analysis the construct validity of a questionnaire can be generally tested (Ratray& Jones, 2007).

If the questionnaire is constructed valid all items together represent the underlying construct. Specifically confirmatory factor analysis was also used to determine the construct validity for each subsection of the questionnaire (Field2, 009).

3.8.2 Reliability test

In order to ensure the reliability and trustworthiness of the qualitative data that will be generated in this research, the researcher will apply criteria of credibility, dependability, authenticity and confirmation. These criteria are accepted to ensure the reliability and validity of qualitative data by qualitative researchers (Noble & Smith, 2017)..

Bells (1993)) states that the reliability of an investigation is satisfying if another researcher can conduct the same research and draw the same conclusions. This has to do with the ability of a research finding to replicate itself if a parallel study is conducted.

Thus in order to ensure the finding of this research the Cronbach Alpha was used to test the reliability of questions asked for this research. The result from the validity test shows Cronbach Alpha to be between the ranges of 0.7 and above on the average of all the variables considered which is above the required 0.7 mark. This is an acceptable level according to (Sekeran, 2003).

In this research the reliability analysis statistical test which uses to calculate the Cronbach's alpha coefficient to assess the internal consistency of the various question items of the questionnaires.Accordingly the Cronbach's alpha coefficient is calculated for each group of items in order to illustrate the internal consistency of each subsection in the questionnaires. It also serves another purpose in indicating the level of measuring the same construct validity. The Cronbach's alpha coefficient for the different subsections of the questionnaire follows. Firstly, the Cronbach's alpha for internal performance measurement competence Likert scale items, total quality management practice items, and performance measurement of the items were computed using reliability analysis of SPSS version 23 software. Accordingly based on the accepted value of Cronbach's alpha coefficient of 0.7 and above the reliability analysis of 4 performance measurement scale items was .9; 12 items of total quality management practice was .91 and 1

items of TQM implementation was .94. Therefore the constructed Likert scale items for the three competences have reliability and they could be used in this study

3.9 Data Analysis Techniques

The raw data collected from the sample would be analyzed using descriptive analysis technique by the help of SPSS version 23, tables, and percent's then it will be interpreted. Descriptive data analysis approaches will be the most appropriate due to the nature of the study, that is categorical (Likert- scale) used to explore and describe the results obtained from analysis.

Because, according to Marczyk (2005) in purely descriptive studies precise and comprehensive description facts is the primary focus of the study. The above mentioned author also stated that , the most basic method, and the starting point and foundation of virtually all statistical analysis, is the frequency distribution. Thus, for the purpose of the study descriptive statistics like frequency distribution, percentage, would be employed.

3.10 Ethical considerations

Before conducting the research the researcher delivered the cooperation letter which was written from Addis Ababa University School of Commerce to the management of enterprises. There was fully cooperative and positive response of the management could be obtained. Then the research area of the study was selected and agreed. The objective and purpose of the research would be clearly communicated to participants and I would be also let them know to withdraw if they get discomfort in the process of their participation in undertaking. More over all ethical issues would be considered in the whole process of the research. Time table for interview with management had been arranged before the time of interviewing considering their interest to discuss on the matter. Questionnaire was also prepared before the time of distribution and the researcher would be discussed with those selected workers how to respond correctly, to minimize risks of improper responses.

CHAPTER FOUR

4 Results, Discussion and Interpretation

4.1 Introduction

This part of the study presents data analysis and discussion. It first presents socio-demographic characteristics of respondents, Total quality Management practices, Strategy and policy for effective total quality management practice, regarding implementation of total quality management elements or principles and regarding organizational performance measurement of the building construction.

For this purpose, a total of 60 structured questionnaires were distributed to randomly selected employees of Ethiopian national defense building construction. Among 60 questionnaires 57 would be collected this accounted 95% of response rate but 5 questionnaires not properly filled. The completed questionnaires were returned to the researcher based on evidence available regarding acceptable response rate it is possible to proceed in analyzing the quantitative data collected using the research instruments and also qualitative data collected by interviewfinally results, discussion and interpretation all by concurrently done

4.2 Demographic characteristics

Table 1: Demographic Characteristics

No	Item	Degree of agreement	Respondent	
			N	%
1.1	Gender	Male	37	71.2
		female	14	26.9
		missed	1	1.9
		Total	52	100
1.2	Age	18-30	18	34.6
		31-40	28	53.8
		Above 41	6	11.5
		Total	52	100
1.3.	Work experience	6-10	13	25
		11-15	29	55.8
		16-20	8	15.4
		Above 21	2	8
		Total	52	100
1.4	Educational qualification	diploma	6	11.5
		degree	40	76.9
		MA	6	11.5
		Total	52	100

Source: Own Survey, 2018

In the above table Item 1-1 In the same pattern concerned the age of respondents 37 (71.2 %) male, 14 (26.9%) female and one is missed. The majority respondents were male and then there is gender inequality in number in this organization.

As far as the above table Item1-2 the respondents responded that 18 (34.6%) 18-30 year 28 (53.8%) 31-40 year, 6 (11.5%) above 41 years respectively. Majority respondents were at young stagethe obtained data implied that there were reliable human powers in the distribution number of population this indicate majority respondents are power full human resources.

In the above table Item1-3 the respondents responded that 13 (25%) 6-10 work experience 29 (55.8%) 11-15 experience, 8 (15.4%) 16-20 experience, 2(8%) above 21 year experience respectively. Majority respondents were well experienced. It implied that respondents realize to respond the total quality management issues considered as very effective for experienced workers.

In the above table Item1-4 the respondents responded that 6 (11.5%) diploma level, 40 (76.9%) degree levels, 6 (11.5%) MA or post graduate level in respectively. Majority respondents were well first degree. Majority respondents were qualifying in their educational status and then for implementation of the total quality management is very simple in the Ethiopian national defense building construction

4.3 Total quality Management practices

Table 2 Total quality Management practices

No	Items	Degree of agreement	Respondent			
			N	%	Mean	Std. deviation
2.1.	Implementation of Total quality management practice within the building construction	Strongly disagree	6	11.5	2	.7
		disagree	15	28.8		
		Neutral	12	23.1		
		agree	19	36.5		
		Strongly agree	-	-		
		Total	52	100		
2.2	Training or capacity building in the concept of Total Quality Management	Strongly disagree	6	11.5	3	1.2
		disagree	15	28.8		
		Neutral	6	11.5		

		agree	**19**	**36.5**		
		Strongly agree	**6**	**11.5**		
		Total	**52**	**100**		
2.3	**The concept of total quality is reflected by values, vision, and mission.**	**Strongly disagree**	**10**	**19.2**	**2**	**1.2**
		disagree	**8**	**15.4**		
		Neutral	**6**	**11.5**		
		agree	**25**	**48.1**		
		Strongly agree	**3**	**5.8**		
		Total	**52**	**100**		
2.4	**The concept of total quality is embraced in the department according to business results.**	**Strongly disagree**	**4**	**7.7**	**2**	**1**
		disagree	**17**	**32.7**		
		Neutral	**9**	**17.3**		
		agree	**20**	**38.5**		
		Strongly agree	**2**	**3.8**		
		Total	**52**	**100**		

Source: Own data, 2018

As the data obtained from selected respondent in table 2.1 indicated that 6 (11.5%) strongly disagree, 15 (28.8%) disagree, 6 (11.5%) neutral, 19 (36.5%) agree. out of the total respondents number 36.5%agree stated that the activities of Total quality management practice applied within the building construction as well as the practice of total quality management is well organized. But in other gaps showed in the data 28.8% of respondents responded that disagree in the practice of total quality of management. In addition there is no one stronglyagreed in the practice of total quality management implementation within the building construction.

. As the data obtained from selected respondent in table 2.2 indicated that 6 (11.5%) strongly disagree, 15 (28.8%) disagree, 6 (11.5%) neutral, 19 (36.5%) agree and 6 (11.5%) strongly agree out of the total respondents in number 19 (36.5%) agree stated the activities of training or capacity building in the concept of Total Quality Management takes place on the other hand there was a view of respondents which expressed to be disagree the effective training or capacity building of employee's based on total quality management.

As a result obtained from the interview showed that training for the employee's is necessary to improve their proficiencies in their tasks hence the organization intended training internally or externally but most of the training method adopt with on job training as such it is considered as not much enough for employee's performance hence it is necessary to design furthermore capacity building activities which is reachable for the whole member of the employee's

As the data obtained from selected respondent in table 2.3 indicated that 10 (19.2%) strongly disagree, 8 (15.4%) disagree, 6 (11.5%) neutral, 25 (48.1%) agree and 3.(5.8%) strongly agree out of the total respondents in number 25 (48.1%) agree. According to data showed that, they have concept of total quality management is reflected in the Company's values, vision, and mission relatively high number of respondents indicated presence of gaps in the reflection total quality management in the Company's values, vision, and mission

In the above table 2.4 showed that 4 (7.7%) strongly disagree, 17 (32.7%) disagree, 9 (17.3%) neutral, 20 (38.5%) agree and 3 (5.8%) strongly agree out of the total respondents in number 20 (38.5%) agree. A majority respondent they have concept of total quality is incorporated in the company's according to business results. But some respondents responded that they have gaps in the practice not on concept of total quality is included in the company's affording to corporate consequences. In the responsefrom interviewers of defense building construction head office coordinator and team leaders they understand the concept of total quality management interims of end result, quality control and quality assurance but they raised the point that total quality management considered as an implementation and basic tools for one organizations as it is really important but applying practically as it is needed shows that there is a gap in the department.

The findings of this study clearly show that Total quality management practices in Ethiopian National Defense building construction which includes; capacity building or training of employees, started vision and vision for effective TQM practices as well as total quality management based effective organizational success and designing for continuous improvement. Majority of the respondents agreed that all the above mentioned Total quality management practices were being practicedin contrary it is perceived that majority of the respondent agreed that building construction has some TQM practices in place which is not satisfy the goal of one organization formed and intended for continuous improvement to satisfy the customer expectations as it is needed.

Table 2.1 Mean Statistics Result of TQM Practices

Mean Statistics For TQM Practice

	N	Minimum	Maximum	Mean	Std. Deviation
Practice Mean	**52**	**1.00**	**4.75**	**3.0817**	**1.06265**
Valid N (list wise)	**52**				

4.4 Strategy and policy

Table 3 Strategy and policy

3.1	Items	Degree of agreement	Respondent			
			N	%	Mean	Std. deviation
	Clearly stated vision, mission or values which mentioned TQM practices	Strongly disagree	10	19.2	2.9	1
		disagree	8	15.4		
		Neutral	12	23.1		
		agree	21	40.4		
		Strongly agree	1	1.9		
		Total	10	19.2		
3.2	Policy and strategy up dated through schedule for entire accomplishment of goals and objectives of the department	Strongly disagree	4	7.7	2.9	1
		disagree	17	32.7		
		Neutral	12	23.1		
		agree	18	34.6		
		Strongly agree	1	1.9		
		Total	52	100		
3.3	Necessary resources available for achieving the policy and strategy	Strongly disagree	10	19.2	2.9	1.1
		disagree	8	15.4		
		Neutral	12	23.1		
		agree	21	40.4		

		Strongly agree	**1**	**1.9**		
		Total	**52**	**100**		
3.4	**Employees participated in the development of the vision. Policy and strategy.**	**Strongly disagree**	**7**	**13.5**	**2.9**	**1.1**
		disagree	**11**	**21.2**		
		Neutral	**16**	**30.8**		
		agree	**15**	**28.8**		
		Strongly agree	**3**	**5.8**		
		Total	**52**	**100**		
3.5	**important strategy designed for the achievement of customer satisfaction**	**Strongly disagree**	**9**	**17.3**	**2.9**	**1**
		disagree	**12**	**23.1**		
		Neutral	**7**	**13.5**		
		agree	**21**	**40.4**		
		Strongly agree	**3**	**5.8**		
		Total	**52**	**100**		

Source Own data, 2018

The data obtained from the above table 3.1. The respondents responded that 10 (19.2%) strongly disagree, 8 (15.4%) disagree, 12 (23.1%) neutral, 21 (40.4%) agree and 1(1.9%) strongly agree, then majority respondents responded that (40.4%) agree. Majority respondents 21 (40.4%) have clearly idea for stated vision, mission or values which mentioned for total quality management practices but similarly 18 (34.6%) expressed their view according to disagree and strongly disagree which implies the presence of gaps within building construction.

The data obtained from the above table 3.2. The respondents responded that 4 (7.7%) strongly disagree, 17 (32.7%) disagree, 12 (23.1%) neutral, 18 (34.6%) agree and 1(1.9%) strongly agree, then majority respondents responded that 18 (34.6%) agree, but same respondents responded that disagree in the updates of policy and strategy with the accomplishment of goals and objectives.

Form the obtained data in the above table 3.3 the participants responded that 10 (19.2%) strongly disagree, 8 (15.4%) disagree, 12 (23.1%) neutral, 18 (34.6%) agree and 1 (1.9%) strongly agree respectively, then majority respondents responded that 18 (34.6%) agree, according to majority participants said that the essential resources available for achieving the company policy and

strategy but (34.6%) which is the combination of strongly disagree an disagree respectively showed that absence of necessary resource allocated for achieving policy and strategy of the organization.

The data obtained from the above table 3.4 the respondents responded that 7(13.5%) strongly disagree, 11(21.2%) disagree, 16(30.8%) neutral, 15(28.8%) agree and 3(5.8%) strongly agree respectively then majority respondents responded that 16(30.8%) neutral, majority respondents responded that neutral for the employees participated in the development of the enterprise vision, Policy and strategy on the other hand the sum of two degree (34.6%) from the data showed that presence of gaps for the employee's participation in the development of policy and strategy of the organization.

The data obtained from the above table 3.5 the respondents responded that 9 (17.3%) strongly disagree, 12 (23.1%) disagree, 7 (13.5%) neutral, 21 (40.4%) agree and 3 (5.8%) strongly agree, then majority respondents responded that 21(40.4%) agree, majority respondents responded for the achievement of customer satisfaction have a great important strategy in the Ethiopian national defense building construction department. Generally the above data and from interview of higher officials argued that policy and strategic plan which is positively associated with operational performance on the other hand the strategic planning includes vision, values and mission of the organization it was formed by taking in to account for the quality concept not as a whole for total quality management concept.

Generally the policy and strategy based on the main way for total quality management implementation discussed in the literature review the questionnaires survey was designed to cover the main principles related to the policy and strategy concept. The questions were asked in the form of questionnaires and interview the results obtained in this study are the most results indicated "agree". The quality program is based on policy and strategy in building construction. On the other hand other respondent reflect the view the term of total quality is essential to the organization's values, vision and mission, in line with any TQM organization. Therefore, it was essential to find out: the concept of total quality reflected in the company's values, vision, and mission. At the same time the quality program is based on policy and strategy and these must be regularly updated and improved through the involvement of employee's.

Table 3.1 Mean Statistics for TQM Strategy and Policy

Mean Statistics for TQM Strategy and Policy

	N	Minimum	Maximum	Mean	Std. Deviation
Strategy Mean	52	1.00	4.80	2.9308	.92026
Valid N (list wise)	52				

4.5 Total quality management principles

Table 4: Total quality management principles

4.1	Items	Degree of agreement	Respondent			
			N	%	mean	St. d
	The leadership or management committed for continuous improvement?	Strongly disagree	9	17.3	3	1.2
		disagree	5	9.6		
		Neutral	8	15.4		
		agree	24	46.2		
		Strongly agree	6	11.5		
		Total	52	100		
4.2	Continuous training program to upgrade the employers based on total quality management	Strongly disagree	12	23.1	2.7	1.3
		disagree	14	26.9		
		Neutral	4	7.7		
		agree	17	32.7		
		Strongly agree	5	9.6		
		Total	52	100		
4.3	Processes are improved as needed, using innovation in order to fully satisfy and generate increasing value for customers.	Strongly disagree	14	26.9	2	1.1
		disagree	11	21.2		
		Neutral	5	9.6		
		agree	19	36.5		

		Strongly agree	**3**	**5.8**		
		Total	**52**	**100**		
4.4	**Products and services are produced, delivered and serviced; and how customer relationships are managed and enhanced.**	**Strongly disagree**	**7**	**13.5**	**3**	**1.1**
		disagree	**12**	**23.1**		
		Neutral	**2**	**3.8**		
		agree	**30**	**57.7**		
		Strongly agree	**1**	**1.9**		
		Total	**52**	**100**		
4.5	**Clarity of authority and responsibility for total involvement of people**	**Strongly disagree**	**6**	**11.5**	**3**	**1.2**
		disagree	**9**	**17.3**		
		Neutral	**3**	**5.8**		
		agree	**28**	**53.8**		
		Strongly agree	**6**	**11.5**		
		Total	**52**	**100**		
4.6	**The department processes are designed and developed based on customer needs and expectations.**	**Strongly disagree**	**13**	**25**	**3**	**1**
		disagree	**10**	**19.2**		
		Neutral	**4**	**7.7**		
		agree	**22**	**42.3**		
		Strongly agree	**3**	**5.8**		
		Total	**52**	**100**		
4.7	**The department is focusing on the processes more than the end results**	**Strongly disagree**	**16**	**30.8**	**2.6**	**1.2**
		disagree	**10**	**19.2**		
		Neutral	**1**	**1.9**		
		agree	**17**	**32.7**		
		Strongly agree	**7**	**13.5**		
		Total	**52**	**100**		

Source Own data, 2018

The data obtained from the above table 4.1 the respondents responded that 9 (17.3%) strongly disagree, 5 (9.6%) disagree, 8 (15.4%) neutral, 24(46.2%) agree and 6 (11.5%) strongly agree, according to majority respondents responded that 46.2% of agree for the leadership committed for continuous improvement of organizations but somehow the response of some respondents indicate the gaps based on leader ship or management commitment of building construction.

.The data obtained from the above table 4.2 the respondents responded that 12 (23.1%) strongly disagree, 14 (26.9%) disagree, 4 (7.7%) neutral, 17 (32.7%) agree and 5 (9.6%) strongly agree respectively then majority respondents responded that 17 (32.7%) agree. According to respondents answer showed that more continuous training program to upgrade the employers were implemented in the Ethiopian national defense building construction for the total quality management implementation. Training for the employee's is essential to progress their proficiencies in their tasks hence the enterprise intended training internally and externally but the result from interview response showed that most of the training method adopt with on job training at the same time training was delivered concerning field of profession selectively as such it is considered as not much satisfy for employee's performance hence it is necessary to design furthermore capacity building activities which is reachable for the complete member of the employee's basically focusing on total quality management practices

The data obtained from the above table 4.3 the respondents responded that 14 (26.9%) strongly disagree, 11 (21.2%) disagree, 5 (9.6%) neutral, 19 (36.5%) agree and 3 (5.8%) strongly agree their response, and then majority respondents responded that 36.5% agree. The data showed that total quality management Processes are improved as needed, using innovation in order to fully satisfy and generate increasing value for customers and other stakeholders.

The data obtained from the above table 4.4 the respondents responded that 7 (13.5%) strongly disagree, 12 (23.1%) disagree, 2 (3.8%) neutral, 30 (57.7%) agree and 1 (1.9%) strongly agree respectively then majority respondents responded that 57.7% agreed, the data showed that in the regarding to total quality management Products and services are produced, delivered and serviced; and well customer relationships are managed and enhanced similarly there was also another view respondents which indicate the presence of gaps based on the issue.

The data obtained from the above table 4.5 the respondents responded that 6 (11, 5%) strongly disagree, 9 (17.3%) disagree, 3 (5.8%) neutral, 28 (53.8%) agree and 6 (11.5%) strongly agree by response, and then majority respondents responded that 53.8% agree. According to participants response there is clarity of authority and responsibility for team work sprit or total involvement of people for organizational process but other responses from the data and interview showed that there is an ambiguity for clarity of authority and responsibility for total involvement of community.

The data obtained from the above table 4.6 the respondents responded that 13 (25%) strongly disagree, 10 (19.2%) disagree, 4 (7.7%) neutral, 22 (42.3%) agree and 3 (5.8%) strongly agree according to the response, and then majority respondents responded that 42.3% agree. According to data the regarding to the implementation of total quality management in the company processes are designed and developed based on customer needs and expectations. On the other hand the response showed that there is a gap in the satisfaction of customers need and expectation.

The data obtained from the above table 4.7 the respondents responded that 13 (25%) strongly disagree, 10 (19.2%) disagree, 4 (7.7%) neutral, 22 (42.3%) agree and 3 (5.8%) strongly agree their response, and then majority respondents responded that 42.3% agree. The data showed that the building construction is focusing on the processes more than the end results. But in other way it has gaps the company focused on the end result of the product..

Generally Management and leadership commitment is the leading stage in the implementation of Total quality management program as mentioned in literature review. Also, most of the literature indicated that the commitment is one of the most important critical successful factors in the implementation of Total quality management Moreover, the emphasis on the commitment of top management and their responsibility, clarifies that the concept of commitment is workable in any location within the company. Therefore, understanding and measuring the level of commitment and responsibility in building construction companies is essential for the implementation of Total quality management. Hence even though the result of some respondents agreed on the response relatively other respondents reflect their doubt in leader ship and management bodies were commuted basically principles of total quality management as needed and expected ways.

As a whole aiming to determine the effectiveness of total quality management principles in building construction questionnaire was used as a data collection framework for the variable used for this study presented in literature review and results are analyzed in the previous section which: shows most of the respondent agreed on the implementation of total quality management principles with in construction the rest have doubt and confusion to accept implementation of total quality management principles basically on training and capacity building, customer satisfaction as well as commitment of management

Table 4.1 Mean Statics for TQM Principle

Mean Statistics for TQM Principles

	N	Minimum	Maximum	Mean	Std. Deviation
Principles Mean	**52**	**1.00**	**4.50**	**3.0254**	**1.05355**
Valid N (list wise)	**52**				

4.6 Organizational performance measurement

Table 5: Organizational performance

5.1.	**Items**	**Degree of agreement**	**Respondent**			
			N	**%**	**mean**	**St.dev.**
	Information and communication systems were managed properly.	**Strongly disagree**	**8**	**15.4**	**2.7**	**1.5**
		disagree	**16**	**30.8**		
		Neutral	**3**	**5.8**		
		agree	**20**	**38.5**		
		Strongly agree	**3**	**5.8**		
		Missed	**1**	**1.9**		
		Total	**52**	**100**		
5.2.	**The department process performance is measured, and customer feedback**	**Strongly disagree**	**8**	**15.4**	**3.8**	**7**
		disagree	**16**	**30.8**		
		Neutral	**3**	**5.8**		

	considered.	**agree**	**20**	**38.5**		
		Strongly agree	**3**	**5.8**		
		Missed	**1**	**1.9**		
		Total	**52**	**100**		
5.3.	**The department encourages innovation and creativity in process performance improvement.**	**Strongly disagree**	**9**	**17.3**	**2.6**	**1.2**
		disagree	**13**	**25.0**		
		Neutral	**13**	**25**		
		agree	**14**	**26.9**		
		Strongly agree	**2**	**3.8**		
		missed	**1**	**1.9**		
		Total	**52**	**100**		
5.4.	**The department adopted an internal performance indicator to monitor, predict and improve customer perception.**	**Strongly disagree**	**12**	**23.1**	**2.7**	**1.3**
		disagree	**12**	**23.1**		
		Neutral	**2**	**3.8**		
		agree	**23**	**44.2**		
		Strongly agree	**2**	**3.8**		
		missed	**1**	**1.9**		
		Total	**52**	**100**		
5.5.	**Effective customer service is provided**	**Strongly disagree**	**15**	**28.8**	**2.7**	**1.4**
		disagree	**10**	**19.2**		
		Neutral	**1**	**1.9**		
		agree	**21**	**40.4**		
		Strongly agree	**4**	**7.7**		
		missed	**1**	**1.9**		
		Total	**52**	**100**		

Source: Own data, 2018

The data obtained from the above table 5.1 the respondents responded that 13 (30%) strongly disagree, 10 (19.2%) disagree, 1 (1.9%) neutral, 17 (32.7%) agree and 7 (13.5%) strongly agree according to the r response, .and then majority respondents responded that 32.7% agree. The data showed that the information and communication processes are systematical managed and

improve day to day activities. On the other hand other responses indicate the regarding performance management of the organization information and communication processes are managing systematically and improved regularly taken as a very important for achieving the goals and objectives of the organization.

The organizationprocess performance is measured and customer feedback considered for this the data obtained from the above table 5.2 the respondents responded that 8(15.4%) strongly disagree, 16(30.8%) disagree, 3(5.8%) neutral, 20(38.5%) agree and 3(5.8%) strongly agree their response, and then majority respondents responded that 38.5% agree. According to majority respondents showed that the performance of company measure and accepted feedback from the responsible body was given high attention similarly others believe on that the presence of gaps on the issue.

The organization encourages innovation and creativity in process performance improvement a great important for any company, on this point the data obtained from the above table 5.3 the respondents responded that 9 (17.3%) strongly disagree, 13 (25%) disagree, 13 (25%) neutral, 14 (26.9%) agree and 2 (3.8%) strongly agreeas such majority respondents responded that 26.9 agree. According to other respondents data showed that regarding to performance measurement the organization must encourages and motivate the employee's for innovation and creativity in process to performance improvement as great advantage for the building construction as well as for the whole.

The data obtained from the above table 5.4 the respondents responded that 12 (23.1%) strongly disagree, 12 (23.1%) disagree, 2 (3.8%) neutral, 23 (44.2%) agree and 2 (3.8%) strongly agree, majority respondents responded that 44.2% agree in regarding to performance measurement the organization adopted an internal performance indicator to monitor, predict and improve customer perception. In this company internal performance measurement indicator showed that good way to improve customer perception. The general view of participants both interviewer and questionnaire showed that every activities of the organization measured based on schedule or intended plan for specific year the result from performance measurement in specific year took as a lesson for future planning of the enterprise to gain result. However in some cases there was a gap to satisfy customer and motivating employees according to expectation considered as shortage.

According to obtained data showed that table 5.5 the respondents responded that 15 (28.8%) strongly disagree, 10 (19.2%) disagree, 1 (1.9%) neutral, 21 (40.4%) agree and 4 (7.7%) strongly agree, majority respondents responded that 40.4% agree regarding to the data showed that performance capacity of effective customer service for customer is delivered but the response from other respondents implies it is not as such implemented as expectation of customers.

The organizational performance measurement is an integral part of the TQM framework .According to Rodney and Bannister (2001) as stated that ensuring that customer's requirements have been met is the one reason for performance measurement. Therefore, it was essential to find out whether the main goal of the measurement in the company is to ensure that customer requirements have been met.

Focusing to measure the implementation of total quality management for organizational performance questionnaires were developed as a result most of the respondents agreed on practices others believe there is a gap in implementation concerning on effective customer service providing and developing expected organizational performance.

Table 5.1 Mean Statics for Organizational Performance

Mean Statistics for organizational performance

	N	Minimum	Maximum	Mean	Std. Deviation
Performance Mean	**52**	**.00**	**13.80**	**2.9462**	**1.96324**
Valid N (list wise)	**52**				

CHAPTER FIVE

5 Summary conclusions and recommendations

5.1 Introduction

This chapter summarizes and concludes the entire study. It presents recommendations and the direction for future research. The purpose of the research was to assess Total Quality Management practices and its effect on organizational performance at Ethiopian national defense building construction

5.2 Summary

In the practice of total quality management in Ethiopian national defense building Construction have historically been male-dominated with very little space for women's participation due to several factors, some of which border not only on institutional but also cultural lines, social and economic problems thus restriction women's no availability.

In the Ethiopian national defense construction the data showed that well experienced human power, qualified human power and also they have fertile human power in the organization, and then it showed that essence of any organization is the human factor and the center of any organizational activity is the human behavior.

For success of the organization the whole employees' and management body at each level have been committed for perfection of job. However there was a gap to adopt the new idea and concept like total quality management as day to day activities hence it is necessary to consider total quality management for effective change in organizational culture thus this can be made possible with the deep involvement or commitment of management implementing total quality management principles as a whole to success of continuous improvement for the organization as a whole.

According to the data showed that Total quality Management practices within the building construction were majority respondents responded that agree the response of others showed that total quality management ispractically not applied within the organization mainly on training or capacity building of employee's in the concept of Total Quality Management, practicing total quality management key element or principles accordingly, reflected the concept of total quality

in the Company's values, vision, and mission and The concept of total quality management is not embraced in the company's according to its business results, goals and objectives unless using the way of quality control and inspection approach.

According to the data showed that majority respondents responded that they agree in the Strategy and policy for effective total quality of management practice within Ethiopian national defense other respondents and the interview from selected building construction leader ship as well as management bodies described as they have gaps on clearly stated vision, mission or values which mentioned total quality management practices, Policy and strategy of the enterprise up dated through schedule for entire accomplishment of goals and objectives, important strategy in the organization for the achievement of customer satisfaction,the availability of necessary resources for achieving the policy and strategy and Employees participated in the development of. Policy and strategy are considered as the real gaps of building construction..

The implementation of total quality management principle followed by commitment to work, employee involvement in quality decisions, effective communication, team work, system for recognition and appreciation of quality efforts, training and development and self-assessment. The majority participant responded that 42.3% agree. The data showed that the company is focusing on the processes more than the end results. But in other way it have gaps the company focused on the result not the process.

The majority respondents responded that 42.3% agree. According to data regarding to the implementation of total quality management in the company processes are designed and developed based on customer needs and expectations. In contrary the other side respondents reflect they have gaps in fulfilling the customers need and expectation.

The majority respondents responded that 57.7% agreed, the data showed that in the regarding to total quality management Products and services are produced, delivered and serviced; and how customer relationships are managed and enhanced.

The majority respondents responded that 17(32.7%) agree. According to respondents answer showed that in total quality management create more Continuous training program to upgrade the employers in the Ethiopian national defense building construction for implemented the total quality management practices.

At the total population the majority respondents responded that 42.3% agree. According to data the regarding to the implementation of total quality management in the company processes are designed and developed based on customer needs and expectations. In addition the other side they have gaps in the customers need and expectation very low.

At the total population the majority respondents responded that neutral for the employees participated in the development of the organization Policy and strategy. The data showed that the gaps for the employee's participation in the development of policy and strategy.

The majority respondents responded that 36.5% agree. The data showed that total quality management Processes are improved as needed, using innovation in order to fully satisfy and generate increasing value for customers and other stakeholders.

At the total population the majority respondents responded that 57.7% agreed, the data showed that in the regarding to total quality management Products and services are produced, delivered and serviced and how customer relationships are managed and enhanced.

The majority respondents responded that 42.3% agree. According to data the regarding to the implementation of total quality management in the company processes are designed and developed based on customer needs and expectations. In addition the other side they have gaps in the customers need and expectation.

At the whole population the majority respondents responded that 38.5% agree. According to majority respondents showed that the performance of company measured and accepted feedback from the responsible body.

At the aggregate population the majority respondents responded that 44.2% agree in regarding to performance measurement the building construction adopted an internal performance indicator to monitor, predict and improve customer perception. In this organization internal performance measurement indicator showed that good way to improve customer perception.

5.3 Conclusions

Organizations that make it in the business world are those that pay attention to what their customers want and build those requirements into the processes of their systems. Moreover, it is also critical for an organization to be aware of its surroundings to produce a comprehensive TQM/CQI plan. Furthermore, an organization should involve and commit its top management from the beginning of the process. Mobilizing a critical mass is the first step to initiate the necessary cultural change, and this is a critical requirement for total quality management to be accepted in the organization and education should be the vehicle to get there. total quality management has to adapt to the needs of the organization, and it should become their own. This sense of ownership will permeate motivation and desire to see it succeed on the part of the organizational participants as well as leadership. In the practice of total quality management in Ethiopian national defense building construction have historically been male-dominated with very little space for women's participation.

Total quality management is a unique philosophy which managed to put most of the available onapproaches into a systematic, formal, and organized approach. Implementing Total quality management requires sufficient allocation ofresources and a comprehensive educational system the next requirement is a good Total quality management plan and a good process of evaluation and measurement. In addition, a criterion on establishing acceptable output is important to measure what has been achieved

The total quality management was expected to not only have the goal of higher production quotas, but to view the employee as an important asset and an integral component that needed to be recognized to reach any desired goal by work experience and educational qualification.

More and more organizations are taking quality improvements initiatives in hope of achieving organizational changes that will improve the processes of their organizational systems. Building construction in particular are paying more attention to total quality management improvement issues than before due to their rapidly changing environment and the new forces dictating their survival which composed of the total quality management practice applied within the construction training or capacity building in the concept of Total Quality Management, the

concept of total quality is reflected in the Company's values, vision, and mission and the concept of total quality is embraced in the company's according to business results.

The Ethiopian national defense building construction department at they have not clearly stated vision, mission or values which mentioned total quality management practices, Policy and strategy of the organization must be up dated through schedule for entire accomplishment of goals and objectives, important strategy for the achievement of customer satisfaction.

The Ethiopian national defense building construction employees were alike participated in the development of the Policy and strategy. The data showed that there were the gaps for the employee's participation in the development of policy and strategy.

The total quality management Processes are improved as needed, using innovation in order to fully satisfy and generate increasing value for customers and other stakeholders.

The importance of total quality management is growing to increase customers' satisfaction and as a result to win the market in the long term. However, developing economies like Ethiopia is challenged in their quality of products and services. The principles of total quality management applied beyond management levels and include workers on construction sites. These workers empowered, involved and trained in problem solving. Companies are to improving worker relationships in the same way that they do for their external customers. Through effective communication and improved project coordination workers motivated to improve their work.

Therefore, it can be argued that the respondents have gained certain level of knowledge competency in utilizing resource and the performance measurement. In contrast, the Officers generally do not have adequate level of competency in internal performance measurement to related tasks. Additionally, they lack proper utilization resource, communication and self-management skills with client, as well as proper handling of customer.

Accordingly, the respondents of employees are low knowledgeable about the policy and strategy procedures in the organization, but higher officials and team leaders have knowledge about the policy and strategy for the organization.. They could ineffectively employ their knowledge of the policy and strategy procedures while accomplishing their prescribed duties and responsibilities in various contexts. Every activities of the organization measured based on

schedule or plan intended for specific year the result from performance measurement in specific year took as a lesson for future planning of the organization to gain result. However in some cases there was a gap to satisfy customer and motivating employees according to expectation considered as shortage.

These professional have had same limitations on the part of the project (such as some gaps in affecting to implementation of the objective of policy and strategy, there are some employees who are working activities traditionally with no change, lack of implementation problems and lack of the true sense of public service, uncertainty towards their commitment, and commitment engage in challenging working conditions.

Through analyses of the respondents report evaluation, generally, quality management practices in Ethiopia national defence building construction was found to be low in all the tenets including leadership commitment, policy and strategy, resources management, process management, training or capacity building, customer satisfaction, business performance and impact on total involvement or team workspirit..

5.4 Recommendation

Based on the major findings and conclusion of the study, the following recommendations are made.

- At the moment, no more female employee's have been deployed into Ethiopian national defense building construction department majority respondents were male, then government of Ethiopian national defense building construction department should be attention for female.
- Understanding and diffusing an awareness of the concept of total quality management is essential and is to be considered as a critical first stage if the organization is successfully adopt the TQM philosophy. Therefore, it is recommended that the concept of TQM be propagated within the organization and among employees by providing suitable training that focuses on the importance of the concept of total quality management
- The responsible body should be given attention for gaps with Ethiopian national defense building construction department should improve utilization of resource and draft

important strategy for the achievement of continuous training and capacity building of total quality management practices to achieve continuous improvement of the organization for customer satisfaction.

- Ethiopian national defense building construction department must set clearly state vision, mission or values which mentioned total quality management practices, Policy and strategy of the organization up dated through schedule for entire accomplishment of goals and objectives through involvement of the employees or community.
- Ethiopian the capabilities competent implementing and also have major skill gaps in utilizing of resource and performance measurement. Thus the performance training should be focused more practical approach for process development than focusing on end result
- The Ethiopian national defense building construction should be focused for the importance of total quality management is growing to increase customers' satisfaction and as a result to win the market in the long term. However, developing economies like Ethiopia is challenged in their quality of products and services.
- Ethiopian national defense building construction department should be focused on performance measurement which adopted an internal performance indicator to monitor, predict and improve customer perception. In this company internal performance measurement indicator considered as important to improve customer perception at the same time to gain lesson from the past and generate organizational performance for continuous improvement and customer satisfaction.
- Regarding to the implementation of total quality management in the company processes are designed and developed must be based on customer needs and expectations then the total quality management should be accorded to implementation of total quality management principles as it is needed.
- Accordingly, it should be logical to recommend that the Ethiopian national defense building construction department should be worked cooperatively with community to implementation of the policy and strategy for continuous improvement.
- Accordingly the general recommend that to improve quality management practices in Ethiopia national defence building construction should high attention in all the views

including leadership commitment, policy and strategy, resources management, process management, customer satisfaction, organizational performance and focus on continuous improvement and customer satisfactions. Several studies have shown that the lack of upper or top management involvement or commitment to TQM is a stumbling block to its successful implementation.

- The principles of total quality management should be applied beyond management levels and include employee's on construction. For this employee's must be empowered, involved and trained in problem solving with in building construction ,improving employee's relationships, team work sprit, through effective communication since they do for their external customers. As a resultemployee's must be motivated to improve their work.
- Continuous effort has to be made to fulfill facilities to accommodate the increasing Ethiopian national defense building construction management department Particularly due attention should be given to clearly for the performance of organizational measure and accepted feedback from the responsible body or clients.
- Finally, Ethiopian national defense building construction management considered as corner or stones for any social, cultural and economic development of Ethiopia and east African countries. It should be emphasized that Strategy and policy for effective total quality management practice within the department, regarding implementation of principles and building organizational performance measurement for cultural change and continuous improvement for customer satisfaction should be supported by those involved at various levels, such as employees, Ethiopia national defense, Ethiopian government and research institution of Ethiopian National defense members.

5.5 Future Research

It is necessary to conduct a survey in Ethiopian national defense building construction who are adopting total quality management philosophy to provide actual evidence about applicability of the proposed model in this report and suggest more applicable model if necessary Further research may consider studying the role of current total quality management of building construction. Further research may consider focusing internal resistance in TQM implementation on the other hand further research may investigate the impact of external factors such as government rules and regulations for the implementation of total quality management practices.It

is hoped that future research would seek to include other Ethiopian National Defense organizationsfor comparison or to understand the extent of implementation of total quality managementin this organization or military units.

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Appendix –I

(Questionnaire)

The purpose of this study will be intended for partial fulfillment of the requirements for the award of the degree of master at Addis Ababa University College of Business and Economics in the field of Logistics and Supply Chain Management by assessing Total Quality Management practices of Ethiopian National Defense Construction Enterprise hence in order to achieve the above issue the researcher will expect willingness, cooperative and commitment of the respondents to provide full information based on ethical manner. This is due to each questionnaires are designed only for academic purpose and your response will be kept confidential, finally the researcher would like to thanks for the respondents to their unique coordination and contribution for success.

Directions:-

- No need of to write your name
- The respondents will be expected to give answers for all questionnaires
- The respondents will be expected to put ☐ for selected answer
- Give more explanations according to the nature the questions

1 Respondents background information

Part I

Demographic information

- **Sex:** Male ☐
  Female ☐
- **Age:**
  18-30 ☐
  31-40 ☐
  41-45 ☐
  Above 45 ☐

Work experience at construction (in year)	Education level
< 3 ☐	Below certificate ☐
3-5 ☐	Certificate ☐
6-10 ☐	Diploma ☐
Above 10 ☐	Degree ☐
	Masters and above ☐

Part II

Questionnaires focus to the practice of total quality management within Ethiopian national defense of building construction department.

2.1. Total quality Management practices within the building construction

Key 1= strongly disagree 2= Disagree 3= Neutral 4= Agree 5= strongly agree

No	Items	1	2	3	4	5
01	Total quality management practice applied within the department?					
02	Training or capacity building in the concept of Total Quality Management?					
03	The concept of total quality is reflected in the Company's values, vision, and mission.					
04	The concept of total quality is embraced in the department according to business results.					

2.2 Strategy and policy for effective TQM practice

01	**Clearly stated vision, mission or values which mentioned TQM practices?**	**1**	**2**	**3**	**4**	**5**
02	**Policy and strategy of the enterprise up dated through schedule for entire accomplishment of goals and objectives?**					
03	**Necessary resources available for achieving policy and strategy?**					
04	**Employees participated in the development of the vision. Policy and strategy**					
05	**important strategy designed for the achievement of customer satisfaction**					

2.3. Regarding implementation of Total Quality Management principles

01	**The leadership or management committed for continuous improvement?**	**1**	**2**	**3**	**4**	**5**
02	**Continuous training program to upgrade the employers?**					
03	**Processes are improved as needed, using innovation in order to fully satisfy and generate increasing value for customers and other stakeholders.**					
04	**Products and services are produced, delivered and serviced; and how customer relationships are managed and enhanced.**					
05	**Clarity of authority and responsibility for total involvement of people**					
06	**The department processes are designed and developed based on customer needs and expectations.**					
07	**The department is focusing on the processes more than**					

	the end results					

2.4. Regarding organizational performance of the building construction

01	**Information and communication systems were managed properly**	**1**	**2**	**3**	**4**	**5**
02	**The department process performance is measured, and customer feedback considered.**					
03	**The department encourages innovation and creativity in process performance improvement.**					
04	**The department adopted an internal performance indicator to monitor, predict and improve customer perception.**					
05	**Effective customer service is provided**					

Part III

Interview

For Management and Leaderships

1. What is your knowledge about Total Quality Management?
2. How long you are committed for Total Quality Management practices?
3. What clear policy and strategic plan intended for implementation of Total Quality Management?
4. What is your plan for capacity building of your employers?
5. How can you develop total involvement or team work sprit?
6. What performance measurement techniques implemented?