

**INFLUENCE OF TOTAL QUALITY MANAGEMENT ADOPTION ON
PROVISION OF QUALITY WATER SERVICES IN VIHIGA COUNTY-KENYA:
A CASE OF AMATSI WATER COMPANY.**

BY

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**A Research Project Proposal Submitted in Partial Fulfillment of the Requirements
for the Award of the Degree of Masters of Arts in Project Planning and
Management of University of Nairobi**

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DECLARATION

This Research Project Proposal is my original work and has not been submitted for the award of a degree in any university.

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DEDICATION

This dedication goes to my dear wife Emily and my Sons Jabez and Lemuel for the love, understanding and support in the entire period of pursuing my studies. Thank you for always praying and keeping me company.

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TABLE OF CONTENT

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENT	iv
LIST OF FIGURES	vii
LIST OF TABLES	viii
ACRONYMS AND ABBREVIATIONS	ix
ABSTRACT.....	x
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study	1
1.3 Purpose of the Study	6
1.4 Objectives of the Study	7
1.5 Research Questions	7
1.6 Significance of the Study	7
1.7 Basic Assumptions of the Study	8
1.8 Limitation of the Study	8
1.9 Delimitations of the Study	8
1.10 Definition of Significant Terms as Used in the Study	8
1.11 Organization of the Study	9
CHAPTER TWO	10
LITERATURE REVIEW	10
2.1 Introduction.....	10
2.2 Customer Satisfactions and Provision of Quality Water Services	10
2.4. Teamwork and Provision of Quality Water Services	24
2.4.1 Definition of Teamwork	24
2.4.2 Teamwork and Motivation.....	25
2.4.3 Teamwork and Communication.....	26
2.4.4 Benefits of Teamwork.....	26
2.5 Continuous Improvement (CI) and Provision of Quality Water Services	29
2.6 Theoretical Framework.....	32
2.7 Conceptual Framework	33
CHAPTER THREE	36
RESEARCH METHODOLOGY.....	36

3.1 Introduction.....	36
3.2 Research Design.....	36
3.3 Target Population.....	37
3.4 Sample Size and Sample Selection	37
3.5 Research Instruments	37
3.5.1 Pilot Testing	37
3.5.2 Validity of Research Instruments.....	38
3.5.3 Reliability of Research Instruments.....	38
3.6 Data Collection Procedures.....	39
3.7 Data Analysis Techniques.....	39
3.8 Ethical Issues in the Research.....	40
CHAPTER FOUR.....	41
DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS ...	41
4.1 Introduction.....	41
4.2 Questionnaire Response Rate	41
4.3 Demographic Characteristics of Respondents	41
4.3.1 Distribution of Respondents by Gender on Quality Water Supply.....	42
4.3.2 Age of Respondents and Sustainability of Projects	43
4.3.3 Distribution of Respondents by Academic Qualification	43
4.3.4 Distribution of the Respondents by Experience.....	44
4.4 Influence of Customer Satisfactions on Provision of Quality Water Services.	45
4.4.1 The Presence on Tap Water, Quality and Quantity.	45
4.5 Influence of Employee Involvement on Provision of Quality Water Services.....	48
4.6 Influence of Teamwork on Provision of Quality water Services.....	51
4.7 Influence of Continuous Improvement in the Provision of Quality Water Services ...	54
SUMMARY OF THE RESEARCH FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS	57
5.1 Introduction.....	57
5.2 Summary of the Findings.....	57
5.2.1 Customer Satisfaction and Provision of QWS.....	57
5.2.2 Employee Involvement and Provision of QWS.....	57
5.2.3 Teamwork and Provision of QWS.....	58
5.2.4 Continuous Improvement and Provision of QWS	58
5.3 Discussion of the Findings.....	59
5.3.1 Influence of Customer Satisfaction on Provision of QWS	59

5.3.2 Influence of Employee Involvement on Provision of QWS	59
5.3.3 Influence of Teamwork on Provision of QWS	60
5.4.4 Influence of Continuous Improvement on Provision of QWS.....	60
5.4 Conclusions.....	60
5.4. Recommendations of the Study	61
Appendix I: Questionnaire for collecting data on quality water services provision in Vihiga County, Case study Amatsi Water Services Company.	63
REFERENCES	66

LIST OF FIGURES

Figure 2.1: Conceptual Framework	35
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LIST OF TABLES

Table 4.1: Distribution of Respondents by Gender	42
Table 4.2: Age distribution of the group members	43
Table 4.3: Academic Qualifications of Respondent	44
Table 4.4: Experience of Directors and Staff.....	44
Table 4.5: Influence of the Presence of Tap Water on Quality Water Services Provision	45
Table 4.6 Water Supplies Hours Per Day	46
Table 4.7 Taste of the Water.....	46
Table 4.8 Correlations between Customer Satisfaction and Provision of Quality Water Services	47
Table 4.9 Employee Involvement	49
Table 4.10 Correlation between Employee Involvement and Provision of Quality Water Services	49
Table 4.11 Coefficient Results for Contribution of Employee Involvement.....	50
Table 4.12 Summary Model Results for Percentage change in Quality Water Services explained by Employee Involvement.....	50
Table 4.13. Teamwork among Employees	51
Table 4.14 Correlations between Team Work and Provision of QWS.....	52
Table 4.15 Coefficient Results for Contribution.....	53
Table 4.16 Summary Model results for Percentage change in Quality Water Services explained by Team Work.....	53
Table 4.17 perception of respondents on continuous improvement in the provision of quality water services.....	54
Table 4.18 Correlation between Continuous Improvement on Provision of Quality Water Services and Provision of Quality Water Services	55
Table 4.19 Coefficient Results for Contribution of Continuous Improvement	56
Table 4.20 Summary Model Results for Percentage change in Quality Water Services explained by Continuous Improvement	56

ACRONYMS AND ABBREVIATIONS

ACSI	-	American Customer Satisfaction Index
AWG	-	Autonomous Work Group
AWSC	-	Amatsi Water Services Company
LVNWSB	-	Lake Victoria North Water Services Board
WASREB	-	Water Services Regulatory Board
NRW	-	Non-Revenue Water
TQM	-	Total Quality Management
NCC	-	Nairobi City Council
WSP	-	Water Service Provider
NWSC	-	National Water and Sewerage Company
WQS	-	Water Quality Services

ABSTRACT

According to Water Services Regulatory (WASREB) Report on Performance Review of Kenya's Water Services Sector 2011-2012, Amatsi water Services Company limited have total population of 265,000 in the service area, population served is 43,676, total number of water connection is 5558, total active connection is 2475 and approximately losing 70% of its treated, clean, safe and potable water in form of Non Revenue Water (NRW) this is water that is majorly lost through pipe leakages and bursts which is as result of poor quality workmanship during installation or poor quality pipe fittings and water meters that doesn't give quality records on amount of water that has passed through them, illegal connection and reconnection of water supply to customers. According to inspection report by LVNWSB for the first quarter for the month of July, August and September 2013 indicated that, only 16% of the population and half total active customers in the service area are irregularly being served with water services for example; September 2013, billing for water services was Kshs. 1,934,010 while total revenue collected for the same month was Kshs. 796,290 and total expenses was Kshs. 2,190,561 making a loss of Kshs.1, 394,271. Therefore, with proper implementation of total quality management in provision of quality water services the Company can satisfy most of its customers, reduce NRW, increase population served in the area, active water connection and collection efficiency. These challenges will only be addressed well with a research on the influence of adoption of total quality management on provision of quality water services in Amatsi Water Company. The purpose of this study was to assess, determine and examine the influence of adoption of total quality management on provision of quality water services in Vihiga County, the case of Amatsi Water Company. The objective of the study was to establish the extent to which customer satisfaction, teamwork, employee involvement and continuous improvement activities influences provision of quality water services. The study targeted board of directors of both AWSC and LVNWSB and the Company staff. Members of the two boards are 20 in number while the staff of the company is approximately 60 in number. This study targeted all the employees and board of Directors totaling to 80 as approximate target population. A semi-structured research questionnaire was designed for administering to the Board of Directors. Questionnaire was administered to Amatsi Company staff. The validity of the instruments was ascertained by the pilot study. This ensured that the instructions were clear and all possible responses to each question were captured. In the study, content validity was determined by consulting the judgment of research supervisors within the University. The University supervisors reviewed the instruments, recommended for improvements and verify whether the instruments were able to address the objectives of the study. The researcher administered the same questionnaires twice to pilot respondents at Maseno water supply scheme and their responses correlated independently to ensure reliability, which was found to be 0.867 and significant. The results were analyzed using frequency counts, percentages, Pearson product moment correlation for relationship between the dependent variable and provision of quality water services. The results revealed that customer satisfaction, employee involvement, teamwork and continuous improvement of provision of quality water services were positively correlated to provision of QWS. However, continuous improvement had more influence on the provision of QWS and accounted for 51.0% of change in the provision of QWS. It was concluded that continuous improvement be intensified to enhance provision of QWS and both management and staff be educated to enhance their coordination of teamwork. The findings are relevant to the companies for the purposes of providing QWS.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Total Quality Management (TQM) is an approach to improving the effectiveness and flexibility in of business as a whole. It is essentially a way of organizing and involving the whole organization; every department, every activity, every single person at every level (Oakland, 1983). Zaire and Samintiras, 1991 have propounded this view point by stating that, TQM is the combination of the socio- technical process towards doing the right things (externally), everything right (internally) first time and all the time with economic viability considered at each stage of each process. TQM may also be viewed functionally as an integration of two basic functions, i.e. total quality control and quality management. Total quality control is a long-term success strategy for organizations. Customer satisfaction, employee satisfaction, product quality assurance in all its stages and continuous improvement and innovation are the main ingredients of total quality control; whereas quality management is a way of planning, organizing and directing that will facilitate and integrate the capabilities of all employees for continuous improvement of anything and everything in an organization to attain excellence (Garvin, 1986).

The evolution of TQM is the outcome of four major eras of development, as outlined by Garvin, 1988. He illustrates the evolutionary process where quality has moved from an initial stage of inspecting, sorting and correcting standards to an era of developing quality manuals and controlling process performance. The third stage was to develop systems for third party certification, more comprehensive manuals including areas of organization other than production and to use standard techniques. The present and the fourth era of TQM is primarily strategic in nature and is based on continuous improvement as the driving force.

In recent years, Total Quality Management (TQM) has received worldwide attention and is being adopted in many industries, particularly in developed economies. Although, control of quality has been practiced in many industries for several years, the adoption of TQM as a major preoccupation of businesses worldwide is very recent, (Lakhe & Mohanty, 1993). According to Sink, 1991, TQM is receiving global acceptance and every organization tries to follow and implement TQM. However he feels that this rush to show

the world that the TQM philosophy is being practiced by organizations is made without proper understanding of TQM. Dale and Lightburn, 1992 also claim that not all companies are willing to embrace the fundamentals of TQM. It is argued that there is considerable number of companies who are using all the popular quality management tools and techniques; however, these techniques, procedures and systems are used in a superficial manner. The main reasons for such a situation is lack of management commitment to the basic principles of TQM and quality improvements and ineffective leadership to direct the improvement process (Dale and Lightburn, 1992)

In the present competitive environment, survival of the organizations depends on their ability to continuously improve as per the expectation of the customers (Khanna et al, 2009). Garvin (1988) describes quality by identifying eight dimensions across which product quality can be viewed. These dimensions are performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. Gitlow and Gitlow (1987) define quality as surpassing customer needs and expectation throughout the life of a product. Quality has been defined as conformance to requirements (Crosby, 1992), fitness for use (Juran, 1988a), meeting and/ or exceeding customer's expectations (Parasuraman et al., 1985), defect avoidance (Crosby, 1984) etc. It is well known fact that it was the adoption of the concept of TQM its totality that accelerated the rise of Japanese industries to world-class performance. Soon the entire world followed their lead to capture the benefits of TQM (Mukherjee, 2008).

Levy, 2003 reports that the idea of TQM was spearheaded by the work of Deming and Juran, who presented their ideas to US companies during the Second World War. But the ideas were well received by the Japanese than Americans (Cummings and Worley, 2001). Japanese companies consequently became more formidable in their competition with American companies. Americans executives realized this, and subsequently in the 1980s Deming's ideas became well received in the USA as well. To encourage the adoption of TQM, the Japanese Union of Scientists and Engineers have awarded Deming Prize annually since 1951 in recognition of quality strategy, management and execution (Stark, 1998). Since 1988, a similar award (the Malcolm Baldrige National Quality Award) has been awarded in USA, and is the most prestigious and sought- after distinction (Tata et al., 1999). The number of requests for TQM adoption, which registered dramatic increase

with 12,000 in 1988 to 51,000 in 1989, and 180000, demonstrated this in 1990 (Gehani, 1993).

In Europe 14 leading European corporations founded the European Foundation of Quality Management in 1989. With the participation of European universities and industries the membership grew to more than 300 by 1995. The Americans looked at TQM as tool to enhance the global presence of US industries. On the other hand, the objective of European Foundation of Quality Management was to achieve the global competitive advantage (Kumar et al, 2010).

Japanese industries stand out from the rest of the world in the sense that they not only achieve global leadership by the mid 1970s but also have since sustained the same for more than three decades. The reason is simple. The Japanese industries first worked during 1950s how to be the global leader by the 1970s. This was nothing but the process of “strategic Quality Planning”, supported by the Japanese lifestyle of ‘Kaezen’ or ‘continuous improvement’ embedded in it. The principle of Total Organizational Involvement and the integrated business strategy, made Japanese organizations build strong infrastructure that provided the platform for achieving the world-class performance and excellence in every sphere of their operation (Mukherjee, 2008)

In Europe: Germany, United Kingdom, France and Italy are countries that have taken a significant interest in adopting TQM. However, a study carried out by Lascelles D. M and DalleB. G, 1988, in the UK automotive industries indicates that companies have a traditional attitude towards quality management. The changes in the European market have given a major impetus to TQM implementation. The focus seems to be changing to quality improvement processes, quality related training and consideration of the relationship of the firm to the outside world in pursuing quality. Although the industries had a traditional approach towards quality matters, the adoption of BS 5750 and ISO 9000 have given new impetus to the quality movements in those countries, and is reflected in top management commitment through better investment, reward and treating everyone in the same way.

In Asia, Hung, 2003 identified that numerous Vietnam companies that could not succeed in international contracts biddings or exports because their products are of unacceptable

quality have recognized the important role TQM can play in facing the challenges of economic integration and globalization. As certification statistics show Vietnam's industries consider TQM an effective strategy to improve their product and service quality, by August 2006, 1683 Vietnamese organizations were ISO 9001 Certified (Vietnam Productivity Center, <http://www.vpc.org.vn>). Study done by D.T. Huang et al, 2010 confirmed that in Vietnam TQM most likely enhance conditions for innovation projects with their effort to improve the firm's TQM strategy.

In India Sink (1991a) stated that TQM efforts can be successful only if leadership of the organization evolves the operational definition for the organization system and is crystallized and communicated with conviction and clarity. The study carried out by Singh (1991) revealed that very few companies adopting TQM in India. Chakarvaty (1994) stated that one needs quality mindset to achieve total quality. Business today (1995) reported the survey conducted by CII. This survey indicated the present scenario of TQM in India. The survey provided information on some of the common problems to implement TQM. The reasons for these problems have been identified as: lack of commitment by top management, lack of TQM strategy, lack of training and TQM skills, lack of updated technology and lack of desired motivation level in employees.

In South Africa, a study done by N. Lusanda, 2014, reveals that 70% of firms dealing with process engineering have formally adopted TQM while 30% have not. Eighty five percent of the organizations that have adopted TQM are ISO9001 certified. Firms that have not formally adopted TQM are implementing TQM principles, even though they have not been able to implement the principles as well as those that have formally adopted TQM. In Kenya therefore it is of great importance to embrace TQM in all areas due to the fact that there is an increasing awareness by senior executives, of the fact that quality is an important strategic issue, which should be implemented at all levels of the organisation (Oakland, 2000; Crosby, 1979).

Amatsi Water Services Company Limited became ISO 9000 certified under Lake Victoria North Water Services Board. It covers five schemes namely, Vihiga, Maseno, Kaimosi, Mbale and Sosiani water supplies. According to the company's report for the 2012/2013 financial year the company loosed approximately 40% of clean, treated and potable water as Non revenue water, received 1241 external customer complaints about lack of clean

quality water services, leaking pipes, faulty and old water meters, wrong billing, dirty and aesthetically not acceptable water. Inspection report for the first quarter for the month of July, August and September 2013 indicated that for example September 2013 billing for water services was Kshs. 1,934,010 while total revenue collected for the same month was Kshs. 796,290 and total expenses was Kshs. 2,190,561 just to mention a few performance indicators.

Therefore, this call for the study on the “influence of TQM adoption on the provision of quality services in Vihiga county-Kenya: case study Amatsi Water Services Company”. In general, TQM is a management philosophy, which is used by organizations that strive to improve their efficiency and competitiveness in the business marketplace. TQM quality factors include top management commitment and involvement, employee empowerment and culture. Some writers as the soft aspects of management know these factors, while the hard aspects include factors such as improvement tools, techniques and systems (Oakland, 1993, 2000; Wilkinson, 1992). In the present world, TQM has turned out to be a globally strategic force, which may result in numerous benefits including: improved customer satisfaction, superior employee focus and enthusiasm, decreased waste and enhanced overall performance (Yang, 2003)

1.2. Statement of the Problem

According to Water Services Regulatory (WASREB) Report on Performance Review of Kenya’s Water Services Sector 2011-2012, Amatsi water Services Company limited have been approximately losing 70% of its treated, clean, safe and potable water in form of Non-Revenue Water (NRW) this is water that is majorly lost through pipe leakages and bursts which is as result of poor quality workmanship during installation or poor quality pipe fittings and water meters that doesn't give quality records on amount of water that has passed through them, illegal connection and reconnection of water supply to customers.

According to inspection report by LVNWSB for the first quarter for the month of July, August and September 2013 indicated that, only 16% of the population and half total active customers in the service area are irregularly being served water services, billing figure was Kshs. 1,934,010 with revenue collection of Kshs. 796,290 Therefore, this call for a study on total quality management in provision of quality water services in the

Company, to assess, determine and examine how customers have been satisfied, employees involved, teamwork enhanced and continuous improvement embraced in operations. For instance, if the company can increase the population served to only 50% from 16% then the billing figure will be Kshs. 6,043,781.25 and with the collection efficiency of 90% which is the performance indicator sector benchmark set by WASREB, 2013 then revenue collection for the company can be Kshs. 5,439,403. In summary, the high NRW, low population served in the area, low billing figure and low collection efficiency will only be addressed well with a research on the influence of adoption of total quality management on provision of quality water services in Amatsi Water Company.

Locally Oriaro (2001) carried an assessment on the suitability of a regulatory framework for operations of water companies in Kenya. Magiri (2002) investigated relationships between credit models used by water companies in Kenya and the attainment of outreach. Ogindo (2006) carried on an assessment of performance of water companies in Kenya. Wanjohi (2008) investigated competitive strategies and positioning within a changing business environment adopted by water companies in Kenya. Karogo (2013) studied the factors influencing financial sustainability of water companies in Kenya. Despite the many studies on water companies, most of the researchers have focused on the sources of finances for water companies and other issues affecting their operation.

However, the studies did not study the influence of adoption of TQM in quality water provision services in Kenya. This study sought to bridge the research gap by researching on influence of adoption of TQM on provision of quality water services in Kenya specifically in Vihiga County, Amatsi Water Services Company. The study is going to find out if adoption of TQM in customer satisfaction, employee involvement, team work and continuous improvement influences the provision of quality water services.

1.3 Purpose of the Study

The purpose of this study is to investigate the influence of adoption of total quality management on provision of quality water services in Vihiga County, the case of Amatsi Water Company.

1.4 Objectives of the Study

- i. To establish the extent to which customer satisfaction activities influences provision of quality water services in Vihiga County.
- ii. To determine how the employee involvement influence provision of quality water services in Vihiga County.
- iii. To assess how teamwork has influenced the provision of quality water services in Vihiga County.
- iv. To examine how continuous improvement have been influencing the provision of quality water services in Vihiga County.

1.5 Research Questions

- i. To what extent does customer satisfaction influence provision of quality water services in Vihiga County?
- ii. How does employees' involvement influence the provision of quality water services in Vihiga County?
- iii. How does teamwork influence provision of quality water services provision in Vihiga County?
- iv. How does continuous improvement influence provision of quality water services in Vihiga County?

1.6 Significance of the Study

Water Services Providers (WSPs) have been very instrumental and allowed by the law in the provision of water services in Kenya through their contract agreement with the Water Boards in the country; the study was worth undertaking because it is likely to benefit the WSPs to provide quality water services to their customers. The finding of the study can inform and be of value to the WSPs by involving every person in the organization, meeting customers' requirements exactly and senior executive commitments in quality services. The study findings can potentially inform and benefit the WSPs in responsive and strategic participatory planning and management of TQM activities, allow for continuous improvement as a driving force once started. The study findings are likely to be a strategic component that will increase profitability, reduce cost and increase market share.

1.7 Basic Assumptions of the Study

The study will assume that Amatsi water Services Company has adopted TQM principles, tools and techniques following the issuance of ISO 9001 certificate to Lake Victoria North Water Services Board who is the overseer of the company operations and management. The study also assumes that the targeted respondents would provide accurate information without bias and prejudice and that LVNWSB and Amatsi Water Services Company (AWSC) provided accurate and up to date report that enabled the study to achieve its objectives.

1.8 Limitation of the Study

Since this study mainly is going to use primary data, which will be augmented with secondary data, its success depends on having access to the study population and documents. However, due to the sensitivity of information sought, the management has been considering it strategic not to give all the details pertaining to the research; therefore, access has been limited. This will negatively affects the validity and reliability of the data collected and unnecessarily makes the research impossible. The researcher however, planned to mitigate this by actively involving all the stakeholders in the research and informed them of the importance of the findings of the study to the organization and that no person will be victimized.

1.9 Delimitations of the Study

The delimitation of the study is based on the statistics, which indicate that Amatsi Water Services Company is at its lowest position in terms of water services provision in LVNWSB amongst many WSPs within the Board area (LVNWSB annual Report, 2013). The study covered Vihiga County with specific emphasis to AWSC, which was implemented within the geographical area, thus the targeted respondents could only be found within the county borders and LVNWSB headquarters.

1.10 Definition of Significant Terms as Used in the Study

Total Quality Management: managing the entire organization so that it excels in all dimensions of products and services that are important to the customer.

Continuous Improvement: constant examination and improvement of all processes on a continuing basis.

Teamwork: Is two or more people with some shared purpose that assume different responsibilities, depend on each other, coordinate their activities and see themselves as part of the unit.

Customer Satisfaction: Is an outcome of purchase and use, resulting from the buyer's comparison of the rewards and the costs of the purchase in relation to the anticipated consequences.

Employee Involvement: Refers to any activity by which employees participate in work-related decision and improvement activities, with the objectives of tapping the creative energies of all the employees and improving their motivation.

Culture: Is a way of how things are done around a place.

Organization culture: Is a company collection of guiding beliefs and daily beliefs backed by its policies, programs and top management.

1.11 Organization of the Study

The study was organized into five chapters; chapter one basically gives the introduction and describes the background of the study, statement of the problem, purpose of the study, objective of the study, research questions, significance of the study, basic assumptions of the study, limitations of the study, delimitation of the study, definition of significant terms used in the study and organization of the study. Chapter two provides a review of literature related to the study thematically as per the research objectives, the theoretical framework the conceptual framework and the summary of the literature reviewed. Chapter three focuses on the research methodology discussed under the following sub headings; Research design, target population, sample size, sample selection, research instruments, pilot testing of the instruments, validity of research instruments, reliability of research instruments, data collection procedures, data analysis technique and ethical issues in research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed the literature related to the study. It covered the following themes: The concept of customers' satisfaction, employee involvement, teamwork and continuous improvement on provision of quality water services.

2.2 Customer Satisfactions and Provision of Quality Water Services.

A customer is a person or group of persons who receives the output of a process of the system (Tarus et al 2009). Traditionally customers are seen as people outside an organization who buy the company products or services: while current understanding is that customers are both internal and external to the organizations. Customer internal to the organization comprise of employees who receives products or services within the organization for the purpose of processing. External customers are the end users of the product or services or the ultimate customers (Tarus et al, 2009).

An external customer can be the one who uses the product or service, the one who purchases the product or service or the one who influences the sale of the product or services. External customers exist outside the organization and generally fall into three categories: current, prospective, and lost customers. Every employee must know how his or her job enhances the total satisfaction of the external customer. Internal customer is just as important because they receive a product or service in exchange, provides a product or service. Each worker is to make sure that the quality meets the expectation of the next person. When that happens throughout the manufacturing, sales, and distribution chain, the satisfaction of the external customer is assured (Dale et al, 2013).

Satisfaction may be considered as a customer's evaluative reaction to how particular product or service performed compared to how he or she anticipated that it would perform (Woodruff & Gardial, 1999). Customer Satisfaction: Is an outcome of purchase and use, resulting from the buyer's comparison of the rewards and the costs of the purchase in relation to the anticipated consequences (Churchill & Surprenant, 1982).

Former President Bill Clinton released a report titled "Putting Customers First '95: Standard for serving the American people". The 232- page report lists the customer

standards that have been formulated by more than 200 federal government agencies. The standards are designed to please the customers-the American people. For instance the Occupational Safety and Health Administration (OSHA) promise those inspectors will be respectful, helpful and focus only on the most serious hazards. The Bureau of Labor Statistics promises data any way you want it: from a live person a recorded message, fax, microfiche, diskette, tape, Internet, or telecommunication for the deaf. Delivering what has been promised builds the American people's confidence that their government can work effectively. After all, if a government office cannot answer the phone and give quick, courteous service, how can it handle defense, commerce, and education (National Performance Review Staff, "Making the Big U Turn", Quality progress, 1996)

The most important asset of any organization is a customer. An organization's success depends on how many customers it has, how much they buy and how often they buy. Satisfied customers also pay their bills promptly, which greatly improves cash flow- the lifeblood of any organization. Customers that are satisfied will increase in number, buy more, and buy more frequently (Dale et al 2013). Quality pays in terms of profit, market share and productivity, successful organizations give high priority in understanding and responding to customer needs (Buzzel and Gale 1987).

Total quality management (TQM) implies that an organization is obsessed with meeting or exceeding customer expectation, so that customers are delighted (Dale et al 2013). Increasingly, manufacturing and service organizations are using customer satisfaction as the measure of quality. The importance of customer satisfaction is not only due to national competition but also due to worldwide competition. This fact is reflected in Malcolm Baldrige National Quality Award where customer satisfaction has high importance in the criteria. Similarly, customer satisfaction is woven throughout ISO 9000:2005. Customer satisfaction is one of the major purposes of a quality management system (Craig, 2001). Often due to the difficulty of measuring feelings, customer satisfaction strategies are developed around clearly stated, logical customer opinions, and the emotional issues of a purchase are disregarded. This can be costly mistake (Jarrett, 1996) a customer may be satisfied with a product or service and therefore rate the product or service highly in a survey, and yet that same customer may buy another product or service. It is of little benefit to understand a customer's views about a product or service if the customer's views about competitors' views about a product or service are not

understood. The value customers place on one product or service compared to another may be a better indicator of customer loyalty. Customer loyalty can be sustained only by maintaining a favorable comparison when compared with competitors (Gardner, 2001).

The study done by Jon Brecka, 1994 on “ The American Customer Satisfaction Index”, Quality Progress, identified that ACSI was established in 1994 as a joint project between the university of Michigan and the American Society for Quality, quantifies quality and customer satisfaction and relates them to firm’s financial performance. Firms can now measure the value that increased customer satisfaction adds to the bottom line (Omar.S, 2010).

In a groundbreaking 2006 study in United States of America, University of Michigan business professor Claes Fornell and colleagues showed the relationship between customer satisfaction and financial success by creating a hedge portfolio in which stocks are bought long and sold short in response to changes in the American Customer Satisfaction Index (ACSI). Developed by the University of Michigan’s National Quality Research Center, the ACSI is an indicator of economic success that reflects levels of customer satisfaction with goods and services purchased from about 200 companies in more than 40 industries; it’s based on interviews with more than 65,000 U.S. consumers each year. Customers’ attitudes improve or deteriorate as people notice consistent quality differences. Changes in companies’ customer satisfaction scores don’t happen overnight; they have to work their way through complex value chains that ultimately affect quarterly profits and stock prices. In many service-intensive industries, however, if a company’s customer satisfaction increases, customers will be quick to adjust their behavior and tell other people, whose own purchase behavior is also likely to change quickly (Hart, 2007).

The study done by Meehan, 2013 for American works association states that water utilities in the United States are facing a myriad of costly challenges, ranging from system upgrades and infrastructure repairs to the cost of energy and pressing regulatory requirements relating to water quality and environmental compliance. Therefore, many utilities are considering offering emergency repair services to their residential water consumers to create stable new funding and increase customer satisfaction because home owners trust that water utilities provide reliable high quality water services, it’s no wonder that nearly 90% of those surveyed indicated that they would trust their utility to recommend a quality repair service (Home Serve USA 2012).

According to the National study done by UNDP 2011 final report services of water utilities in a European country called Albania it emerged that there is lack of enforcement towards not paying customers, significant levels of non-revenue water and a widespread occurrence is illegal connection, the water supply and sewerage infrastructure is considerably aged, damaged and inefficient. According to World Bank, Indonesia, Surabaya Water Company NRW management strategy final report, 2011 found that, sharp increase in the demand for drinking water and sewage disposal services has exacerbated the already precarious situations of the water supply sewerage infrastructure. There is also lack of well-trained personnel in the utilities that has led to inefficiency in overall management and technical operation.

The UK customer service index has revealed that customer satisfaction in the UK fell during the last quarter of 2013. The national measure of customer satisfaction, which is published every six months by the institute of customer service, also recorded a fall in July 2013, following unbroken series of increases between January 2009 and January 2013. However according to Bristol water annual report 2013 indicates that they were ranked in second place by ofwat service incentive mechanisms out of 21 companies where they delivered the lowest level of leakages in their history which was a key customer satisfaction priority. Over 99.99% of the legally required samples met a UK and European community standard that is the most rigorous water quality test measured in the world. The customer satisfied with Bristol water service delivery is 95%, through providing a highly reliable water service 24 hours a day, providing excellent quality water which is their unquestioned top priority and the customer serve. Bristol water has sophisticated treatment process in place to ensure that all water produced is clear, clean and fresh according to drinking water inspectorate annual report (Keith et al, 2013).

The water utility also monitor customer satisfaction through monthly and annual customer satisfaction research carried out by independent agencies and in recent annual carried out in February, 2013, 93% of respondents stated that the service they receive was excellent, very good or fairly good. A gratifying 79% of respondents were satisfied that Bristol water offered value for money & 91% of staff survey respondents declared that they liked their job, 86% of respondents were proud to work for Bristol water with 85% recognizing that Bristol water is a good place to work (Keith et al, 2013)

In Asia India, Jarmshedpur Utilities and Service Companies (JUSCO) is an integrated urban water provider managed under a cooperate framework. More than 99% of potable water samples tasted for bacteriological quality and free chlorine conformed to be BIS standards. JUSCO measure and improves customer satisfaction primarily through three initiatives: tracking through customer satisfaction index computed from customer survey respondents, providing Service Level Guarantee (SLG) and monitoring compliance and tracking and resolving customer complains through the JUSCO assistant center. This initiative has enabled them to closely monitor complaints and identify operations inefficiently in service department, continued improvement and decline in repeat complains. An international market research company does customer satisfaction surveys annually. Customer respondents are used to compute customer satisfaction index and results benchmarked against other well managed utilities.

Jarmshedpur Utilities and Service Companies (JUSCO) customer management and complaint redress system lays out explicit service delivery standards that are time bound, relevant, accurate, measurable and specific. Service contacts are constantly tracked to ensure that complaints are addressed within SLG; a system of job prioritization has been introduced. JSK maintains a follow up list for coordinating and ensuring time redress of complaints. Despite all the efforts the company still cannot supply water 24 hours seven days a week but can only supply water for seven hours.

Study done in Yemen, Asia by Yemen Observer, 2007, indicated that continuity of water supply is poor in most Yemen cities. For example, in Taiz the frequency of the public piped water delivery is only once about every 40 days. More and more people have to rely on more costly water provided by private wells supplying water tankers. The quality of this water is questionable because these tankers have often been used for other purposes without appropriate cleaning. According to Ministry of Water and Environment annual report, 2007, the city of Ibb and the town of Bajil provide water only once a week. According to a survey carried out by German Technical Cooperation (GTZ), 2008, in 7 towns 89% of the customers of water utilities said they were satisfied with the service level of their water utility, and only 9% were dissatisfied. Even in the city of Ibb, where water supply is highly intermittent, 47% of customers declared they were satisfied. In the town of Amran, where the situation was similar, even 74% of customers were satisfied. It may be that customers have become accustomed to poor service quality and have

correspondingly lowered their expectations (Ministry of Water and Environment Annual Report in Yemen, 2007).

According to the study done by Sule & Okeola, 2008 in West Africa, Nigeria on the Oyon River Regional Water Supply Scheme (ORRWSS), customer services are water connections, billing, debt recovery and receiving of complaints. Billing is done manually, payment of water bills is by cash or cheque and this is made at a pay office within the premises of water works. Disconnection is done to coerce customers to recover unpaid bills. The exercise is done regularly. The water supply lacked personnel and resources, thus affecting their debt recovery efforts. Pump operators, plumbers, accounts and administrative staff are most often engaged for disconnection exercise to boost revenue collection. Complaints are reported at the zonal and area offices, which is not easily accessible to all consumers in the region. Customers prefer to engage the services of independent plumbers to solve problems of pipe leakages. In the essence, customer services arrangement is not adequate (Sule & Okeola, 2008).

Laboratory analysis of water samples taken from the raw water source, treatment plants and distribution pipelines was carried out to determine their quality characteristics. The results for treated water samples were compared with the Nigeria National Standards for drinking water. However within the distribution network, color and turbidity of water reaching the consumers were found to be 7.1- 9.3 NTU and 8.1- 8.75 HU respectively. These values are higher than the 5 NTU and 5 HU respectively stipulated in the Nigerian standards, thus confirming the observation of customer on the poor quality of the water (Sule & Okeola, 2008).

Furthermore, bacteriological examination of the water sample collected from service outlets showed presence of E-Coli up to 2/100ml in some cases, though the treated water at the plant is devoid of pathogens. Since many service pipes are laid in the open drains, contaminants of water is possible through suction effects of pipe joints especially when the pipes are empty. When the supply is restored the flow carries the sediments and other pollutants in the pipe to the consumer's outlets, hence the general complaint about poor water quality. There is a need to apply higher dosage of chlorine to maintain residual protection in the system, more so when the residual chlorine is reduced by reactions with organic and inorganic matter in water or inside the pipes as well (McGhee, 1991).

From the survey and econometric analysis, the respondents expressed willingness to pay higher than the present as long as water is available regular & improvement on the services. Generally the customers are not satisfied with the services of ORRWSS, because of lack of supply and poor quality. Customers claimed that the water is colored and contain sediments; hence some secondary treatments like boiling, filtering and alum addition are applied before using the water for cooking and drinking.

In South Africa JOBURG'S tap water rates among the cleanest, safest and healthiest in the world – and it is the task of Johannesburg Water to provide top quality water and a world class sanitation service to the city's three million residents. The company is an independent company, with the City of Johannesburg its only shareholder. Annual turnover is more than R1, 6-billion, and the company is run on best business practices and aims to provide customer satisfaction. There are 10 957.88 kilometers of distribution pipes providing water across the city, and ensuring that the water provided remains world class, the company's electro-mechanical maintenance department ensures that Johannesburg Water's 33 water towers, 87 reservoirs and pump stations are functional 24-hours a days. Johannesburg Water's testing laboratories are accredited with the South African National System (SANAS). Three laboratories test over 500 samples each month, ensuring that what comes out of the taps meets the high quality requirements of the SANS 241, Class 1 Drinking Water (Dumas, 2008).

According to study done by Gerald Dumas, 2008, the prime objective of the project was to improve service delivery and customer satisfaction through upgrading and extending Johannesburg Water's infrastructure, and replacing old and outdated systems, he explained. No service disruptions and water supply problems are expected during the work, but the utility will notify residents at least 48 hours before there are any planned supply cuts caused by the construction work. Dumas said that the City was fully aware of the type of problems that were caused by old municipal water infrastructure, "hence we have put comprehensive programs in place to upgrade and rehabilitate municipal water and sanitation infrastructure across the city". The quality of Joburg's tap water has been rated among the best in the world; to maintain this standard, officials routinely monitor over 500 drinking water samples each month as part of its audit programs that focus on infrastructure development and maintenance. Dumas noted that the utility was committed to improving the quality of water and sanitation services in Joburg. "This infrastructure

renewal program is close to my heart because I love development, and customer satisfaction remains my top priority. "Johannesburg Water continues to supply the City and its customers with fresh, clean and healthy drinking water each day," Dumas noted. It would continue to ensure that the 900 million liters of wastewater-generated daily was treated to the highest standards demanded by the Department of Water Affairs and Forestry, and in line with global best practice (Dumas, 2008).

In East Africa, Water supply and sanitation in Tanzania is characterized by: decreasing access to improved water sources in the 2000s (especially in urban areas), intermittent water supply and generally low quality of service and continuity of water supply in the twenty Urban Water Supply and Sanitation Authorities (UWSSAs) that operate in Tanzania, three are able to provide continuous water supply (Arusha, Songea and Tanga). In eleven other cities water is supplied for at least 19 hours. In Babati and Mtwara there is water supply for 12 hours per day. The lowest figures (5 hours per day) come from the cities of Kigoma, Lindi and Singida. In Dar es Salaam water is supplied on average for 9 hours per day.(Ministry of Water and Irrigation Water Sector Status Report, 2009). Water quality varies significantly within the country. In the semi-arid regions (including Dodoma, Singida, Tabora, Shinyanga, and Arusha), color and turbidity levels become problematic during the rainy season. Rivers in the fluoride belt (including Arusha, Kilimanjaro, Singida, and Shinyanga regions of the Rift Valley, and extending to the Pangani and Internal Drainage basins) have naturally high fluoride concentrations. The waters of Lakes Tanganyika and Nyasa have overall good water quality except in the vicinity of urban areas where effluent and storm water cause local contamination, whereas the water quality of Lake Victoria is poor: high turbidity and nutrient levels lead to frequent blooms of algae and infestations of water weeds (National Water Sector Development Strategy 2006 to 2015).

Wastewater treatment of the twenty major urban water utilities, 11 provide some access to sewer connections. In Moshi the reported connection rate is 45% (although this also includes some industrial connections), in Morogoro the reported rate is 15% and in Dodoma and Iringait is 13%. In Dar es Salaam the length of the sewer network is estimated at 188 km, although only 4% of households have access to it. The average level of non-revenue water among the 20 regional water utilities was 45% in fiscal year 2006-2007. Data reported by the Ministry of Water and Irrigation in 2009 show that non-

revenue water in urban areas varies between 55% in Dar es Salam and 25% in Tanga. It is estimated that non-revenue water is higher in small and district towns.

In Uganda, the study done by Maxwell Stamp, 2003 in Kampala, the Capital City, those who receive piped water supply were "usually" supplied continuously for 24 hours per day in 2003. However, according to the National Water and Sewer Company, 2003, annual report acknowledged that parts of Kampala such as Kyaliwajala, Kulambiro and most places on hilltops suffer from chronic water shortages. In addition, some areas go without water for a week when repairs are undertaken (The Daily Monitor, 15 February 2011). In other towns; most customers were supplied on more than five days per week. Ministry of Water and Environment, Uganda indicated in 2006 that piped water in large towns is usually available for 20–24 hours per day (Maxwell Stamp, 2003).

Under the fourth Water and Sanitation Sector Performance Assessment, based on analyses by several subsectors and NGOs carried out in 2006, it was found that 90% and 95% of the water samples taken from protected and treated water supplies, respectively, met national standards for drinking water quality. This assessment comprised both rural and urban water supply (WaterAid, 2006).

A customer satisfaction survey was carried out in 2009-2010 for all towns served by National Water & Sewerage Company (NWSC). It covered questions such as satisfaction with water reliability, water pressure, water quality, timely and accurate water bills, responsiveness in resolving complaints, responsiveness in effecting new connections, customer care, and the convenience of the bill payment process. Out of 5319 customers contacted in a stratified sample, 2731 responded. Customer care received the highest rating, while water quality and pressure received lower, but still overall good ratings. A customer satisfaction index was calculated across all questions, showing that 85% of customers are satisfied, up from 83% during the last survey. Satisfaction was highest in Hoima, Iganda and Masindi at 95% and lowest in the central Ugandan town of Mubende, where now customer care officer or desk exists, at 62%. In Kampala satisfaction was 83%. Customers appreciated the ambience in local offices, that phone calls are made to remind customers of payment, that customers can settle their arrears through payment plans in exceptional cases, and that water disconnections are announced through the radio (Sheba Bamwine, 2010). However, customers still complained about

low water pressure, muddy water during the wet season, supply interruptions during the dry season, low water pressure, slow implementation of new connections, erratic bills, disconnection despite having paid their water bills, and the rudeness of field staff (Sheba Bamwine, 2010).

In Kenya the study done by Joint Monitoring Program for Water Supply and Sanitation (JMP) show that in 2008 59% of Kenyans (83% in urban areas and 52% in rural areas) had access to improved drinking water sources. 19% of Kenyans (44% in urban areas and 12% in rural areas) are reported as having access to piped water through a house or yard connection. According to the JMP estimates, access to improved water sources in urban areas decreased from 91% in 1990 to 83% in 2008. In the capital Nairobi access for the same period was reported at 35%, as opposed to a less realistic figure of 46% reported for 2005–2006. The poor, in particular women and girls, spend a significant amount of time fetching water in both rural and urban areas. For example, the 2007 Citizen Report Card survey showed that users of water kiosks in cities fetch water 4–6 times per day. In Kisumu, this meant that a poor household spent 112 minutes per day to fetch water at normal times, and as much as 200 minutes per day during times of scarcity.

A citizens' report carried out in Nairobi, Mombasa and Kisumu in 2007 provides information about customers' perception of water quality: around 70% of households using water from connections to the mains said they found the taste and smell of water acceptable, and that the water was clear. Even so, the vast majority of respondents treat water prior to consumption, which shows continuing uncertainty about its quality (Citizens' report on urban water, sanitation and solid waste services in Kenya, 2007). The Impact Report provides data on continuity of water supply for 55 Water Service Providers in 2006–2007, weighted for distance, waiting time and affordability. The average number of service hours that Kenyan water utilities provide is 14 hours. Only in seven WSPs water supply is continuous (Nyeri, Othaya, Eldoret, Malindi, Meru, Tuuru and Tachaasis). According to WASREB water service quality impact report 2010, in Nairobi water is provided on average for 16 hours a day and in Mombasa for 6 hours.

Nonetheless, instances of water scarcity (defined as more than five days without or with insufficient water supply) still occur in Kenya. In 2006 in Kisumu over 40% of

households (both poor and non-poor) connected to water mains reported scarcity. The greatest difference between the poor and non-poor was recorded in Nairobi, where poor households were more than twice as likely to say they experienced scarcity. A higher percentage of kiosk users reported scarcity than households with mains connections, suggesting that in times of scarcity kiosks are less likely to receive water than domestic connections (World Bank, 2007).

On average, almost half (47%) of the supplied water in Kenya was not billed in 2006–2007, e.g. due to leakage or water theft. Two Water Services Providers met the benchmark set by the Ministry of Water and Irrigation with levels of NRW of 25%: Malindi and Nyeri. In Nairobi NRW levels were about 40%. Based on the unit cost of production (18 Kenyan shillings/m³ or US\$0.2), the nationwide losses due to non-revenue water in 2006–2007 were about Kshs 2.43 billion, equivalent to US\$31.5 million (WASREB Impact Report on Non-Revenue Water, 2010).

The City council of Nairobi water department recommended a resale price, but could not enforce it so that the poorest end up paying much more than those fortunate enough to have a tap in their house (S. Tauono & J. Launda, 1996). According to the study done by Hilda Moraa et al, 2012 for iHub research over water governance in Kenya, Nairobi Water and Sewerage Company, Langata and Embakasi areas indicated that 15.2% of the research participants had launched complaints about provision of water services in the community. The other 84.8% of the participants had not launched complaints on water related issues not because they lacked complaints, but because they failed to get audience that would listen to, address their pleas and act accordingly. The community that doesn't complain even if they fail to get water is 68.9%, the ones that complain to provincial administration is 4.6%, local authority 8.0%, water vendors 4.1%, water company 3.4%, media 0.1%. Out of the 272 respondents who had filled complaints to the various authorities only 33.5% of them got satisfied with response they got. The other 66.5% either got dissatisfying responses or didn't get any response at all. In terms of various authorities, a high percentage of respondents 40.9% got satisfying responses from the water vendors. 73.8% of the respondents who had demanded their rights on water related issues complained of authority's sluggishness to address their demands (Hilda et al, 2012)

The Nairobi water utility NCWSC says it has a stringent water quality monitoring programs to ensure the water they supply the city is safe for drinking. However, due to high leakage in the network and intermittent supply treated water is sometimes re-contaminated before it reaches the tap. According to the Water Sector Regulatory Board, in 2009/10 only 76% of drinking water samples complied with standards for bacteriological quality, a level deemed unacceptable by the regulator. This was the case despite a high level of chlorination that was deemed acceptable by the regulator with 91% of samples complying with the norms for residual chlorine (WASREB, 2011). Also, sometimes water is contaminated because of pipe bursts. For instance, over 10 fatalities from water borne diseases were experienced in the slum Mukurukwa Njenga in 2009. Those who can afford it boil or filter water before drinking it, or buy bottled water. Those who cannot afford this are forced to take their chances with tap water (Jambo Nairobi, 2011).

2.3 Employee Involvements and Provision of Quality Water Services.

Employee involvement means that every employee is regarded as a unique human being, not just a cog in a machine, and each employee is involved in helping the organization meet its goal (Apostolos A, 2000). The attitude that organization result come from the top, that effective cultures are derived from the upper echelon, often tend to ignore the power and the contribution of those at lower levels thus ignoring the importance of employee involvement (Woodworth, 1986).

A firm can have a high degree of involvement that means all categories of employees are involved in the planning process. Conversely, a low degree of employee involvement indicates fairly exclusive planning process, which involves top management only (Barringer & Bleudorn, 1999). A deep employee involvement in decision-making allows the influence of frontline employees in the planning process. These are the people who are closest to the customer and who can facilitate quality and new product and service recognition, a central element in the entrepreneurial process (Li et al., 2006).

According to the study done by Edward Lawler, (1996) in 1000 firms at the University of Southern California in USA employee involvement had an average return on investment of 19.1%, compared with 15.2% for those who made little use of it. The study also identified a company in USA called Lyondell Petrochemical Company, which has 1500

employees at four manufacturing sites in Texas. Fortune ranked Lyondell first in sales per employee among all industrial companies in the United States. It earned the same honor again in 1990 and 1991. It received Baldrige site visits in 1991 and 1992. And in 1993, it was identified as one of the 100 best companies to work for in the United States. The key to Lyondell's success has been employee involvement.

Research by Frohlich and Krieger (1990) examined the extent of employee participation in technological change in five European countries: UK, France, Germany, Italy and Denmark. They discovered that of the four phases of introducing new technology (planning, selection, implementation and subsequent evaluation) workers were more likely to be involved in the later stages, and that full participation, particularly in decision making, remained low for all countries and for all stages. A study conducted by New York City- based Ernst & Young, in conjunction with the Milwaukee based American Quality Foundation 1993; found that many companies are floundering in their attempts to implement TQM practices. A key finding from this study is that many TQM programs fail, and others don't reach their potential because employees aren't involved. Without employee involvement, even the best quality program is bound to fail.

The benefits of employee involvement are; increase employee's morale or job satisfaction and enhances productive efficiency (Chang & Lorenzi, 1983). It provides employees the opportunity to use their private information, which can lead to better decisions for the organization (Williamson, 2008). As a result of the incorporation of the ideas and information from employees, organizational flexibility, product quality, and productivity may improve (Preuss & Lautsch, 2002). It contributes to greater trust and a sense of control in the part of the employees (Chang & Lorenzi, 1983). Quality improvement, better information flow- and use can clarify goals, and bring about qualitatively better decisions (Sashkin, 1976).

It is one approach to improving productivity and is credited for contributing to the success enjoyed by Japanese in the world marketplace. Employee involvement is not a replacement for management nor is it the final word in quality improvement. It's a means to better meet the organization's goals for quality and productivity at all levels (Dale H. B. et al, 2013). *Kaizen Teian* is a Japanese term for suggestions system in which employees are motivated to come up with small ideas and implement the ideas and

implement the ideas themselves rather than presenting the ideas to someone else to analyze and execute (Womack et al, 2007).

Japan is often cited as an exemplar of employee participation practices, particularly giant corporations such as Nissan, Toyota, Honda, Mitsubishi, etc. the most commonly emulated participation technique has been quality circle, which has been noted were conceived in the USA by Deming and Juran, and were planted in Japanese organizations and has been part and parcel of the working practices in Japan.

According to the study done by Huang Wei, 2012 in two coal group companies and two auto assemblers in China the evidence showed that the depth of employee involvement in these companies was confined to information and consultation rather than true participation and even joint decision making. The evidence however, showed that the depth of employee involvement at the shop floor level within the organization was enhanced, with the main focus on distribution of wages and bonuses in the teams and groups. Motivation helps us to understand the utilization of employee involvement to achieve process improvement. According to Abraham Maslow 1954, most people are motivated by the desire to satisfy specific group of needs. These needs are physiological, safety, love, esteem and self-actualization

According to Theodore B. Kinni, 1993 managers at all levels cannot cause an employee to become motivated; they must create an environment for individuals to motivate themselves, concepts to achieve a motivated work force are, managers must understand their own motivations, strengths and weaknesses know your employees, establish a positive attitude, share the goals, monitor progress, develop interesting work through (job rotation, enlargement and enrichment), communicate effectively and celebrating results.

Lakhe & Tidke, 1991 study indicated that most of the Indian organizations are handicapped in implementing TQM due to lack of employee involvement and participation in quality improvement efforts.

In south Africa a study done by Adedeji A. C & Okolie K. C, 2012 realized that an all-inclusive suggestion policy, training, evaluation and motivation have not been pursued well by automotive companies therefore the companies should realized this fact, and need to be more proactive in implementing employee involvement in suggestion systems and

strategies. They also realized the need of clear suggestion objectives and communication of this to all employees involved in production and service delivery, flexible organization structure that encourages a favorable employee/ employer relationship.

In Uganda the study done by Kyamanywa Nalule, 2005 established that despite the existence of positive relationship between employee involvement in decision-making and quality service, employee involvement in decision-making is not decentralized to include all employees in public organization. Managers are the ones making decisions and thus their inability to enhance quality service in public sector in Uganda. In Kenya a study done by Stephen Nhuta 2012 found that Kenya Airways quality management system was found on the basis of Local Quality Plans, which were developed by their own staff and agreed by management. Staffs were motivated through involvement, autonomy and rewards.

2.4. Teamwork and Provision of Quality Water Services

2.4.1 Definition of Teamwork

Teamwork is distinguishable set of two or more people who interact dynamically, interdependently, and adaptively towards a common and valued goal/objective/mission (Salas et al, 1992). According to Cohen and Bailey 1997, also defined teamwork as a collection of individuals who are interdependent in their task, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social system, and who manage their relationship across organizational boundaries.

Underpinning team knowledge, mutual predictability, direct ability and adaptation is clear and effective knowledge transfer. Within the team context, knowledge usually occurs through communication between team members across different channels (e.g. Verbal, text or non-verbal). Clear and effective transfer of knowledge is essential in teams (Squire et al, 2006). Nowadays, the use of teams is expanding dramatically in response to competitive challenges. For instance, 82% of companies with 100 or more employees reported that they use teams (Gordon, 1992). Teamwork is regarded as the key to staff development (Beal, 2003).

The environment is unexpected and changing constantly because of the rapid development of technology. In particularly, businesses confront fierce competition.

Accordingly if a business wants to succeed in business circles and to be a leading organization it must highly be aware of its effectiveness and productivities and make good use of its resources in order to achieve business excellence (Samson and Challis, 2002). Teamwork as one of the Human Resource Management (HRM) fields is prevalent nowadays and significant benefits can be gained from teamwork (Cohen and Bailey, 1997).

2.4.2 Teamwork and Motivation

According to Armstrong, a motive is a reason for doing something. Motivation is concerned with the factors that influence people to behave in certain ways. Motivation theory examines the process of motivation & explains why people at work behave in the way they do in terms of their efforts. It also describes how to encourage people to apply their efforts and abilities to achieve the organizational goals as well as satisfy their own needs (Armstrong, 2001). There are different types of teams such as work teams, parallel teams, project teams, management teams etc. Different types of teams require different motivation methods (Cohen & Bailey, 1997). Currently there are other kinds of new teams used in practice such as autonomous work teams. Autonomy is proved to be associated with higher performance for work teams (Cohen and Bailey, 1997). It reflects that job autonomy is positively related to job satisfaction and employee performance motivation (Kiffin-Petersen & Cordery, 2003). It appears that an Autonomous Work Group (AWG) and Self-Managed Work Teams (SMWT) develops responsibilities and satisfy human needs (Margulies & Kleiner, 1995). For instance compared to work teams with assigned members, voluntarily formed work teams have higher work motivation and better performance. Most members share responsibilities, aiming at raising both quantity and quality of productivity through concerned effort. It also indicated with a warm and friendly atmosphere, team members' can complement each other skills via comfortable discussions, which make them feel competent and self-determining. Consequently, innovation and quality services occurred through such cooperative work activities (Jin, 1993).

Individual team members who are provided with opportunities to learn and utilize new skills will have more favorable attitude towards teamwork (Kiffin-Petersen & Cordery, 2003). Anticipatory injustice is positively related to change resistance and turnover intentions, which could have negative effect on employees' commitment. Employees also

fear that working in teams' would increase confrontations with co-workers. Under such circumstances, employees are likely to resist the change to work in teams or even worse, they might reduce their organizational commitment or quit their job. Therefore, it's very difficult to motivate people working in teams with the influence of distributive injustice. High levels of anticipatory justice could moderate employees' negative reactions (Shapiro & Kirkman, 1999).

2.4.3 Teamwork and Communication

Improved communication systems help employees to understand what is expected of them and encourage employees to take more responsibilities for their skill levels and performance. Appraisal, departmental meetings and information charts are different sorts of communication forms for managers to set clear personal objectives for individual employees, because employees can get their performance at regular team meetings and know their strengths and weakness clearly for future improvement (Beal, 2003). Additionally, positive feedback for team members can help to achieve high level of cooperation (Jin, 1993).

2.4.4 Benefits of Teamwork

Teamwork is the key to staff development (Beal, 2003). Teamwork can be smartest strategy for growth (Krotz, 2003). Teamwork can influence performance results and organizational objectives (Brown, 1995). Teamwork can make people share the same goal and responsibilities for outcomes, namely, the common objectives of an organization. Teamwork can also enhance effectiveness and productivity of a company, which would gain organization more profit (Beal, 2003).

According to Randy Slechta President of Leadership management, effective teamwork is essential to any business. As "no man is an island", the positive effects of teamwork can energize an entire organization, just as the negative effect of lack of teamwork can cripple an organization. No matter how hard groups of people try to work together and create an effective team, without the right people for the job, the team will inevitably fail. The four essential components of teamwork are; positive corporate culture, giving recognition, positive feedback, provision of new opportunities and challenges.

In United States of America teamwork underpins one of the most profitable company known us Miller brewing company and is the third largest worldwide. The brewing plant

is a 24 hour 7 day a week operation just like most water supplies since water is needed at all times. The shift of the company is covered by three nine-hour shifts a day. The first hour of each shift is set aside for communication and paid separately. All maintenance employees are organized in teams of 6 to 19 members. One team member is responsible for each area. Communication is enhanced with team meeting on every shift and workers from all three shifts meet once a week. Employees identify with their company and are therefore highly motivated. Teamwork at Miller is based on the team concept methodology and has been a great success. They invest on extensive employee training programs with each employee receiving 80 hours of training per year and 50% of this time is spent on the development of technical skills. After only four years the company was one of the most successful in the world. It has the same output with its competitors, but with only half the staff and the lowest production cost per unit (www.us.tacook.com).

The same has been experienced in Veolia Water Company that has successfully managed their water utilities through orchestrated teamwork and quality assurance technicians; they place great emphasis on teamwork (we pool our knowledge and experience, ensuring that every success is shared success). If the company is able to recruit people who are willing to share expertise among team members, then working in teams makes strong business sense (www.veolia.co.uk).

In Singapore, best water practices require teamwork and collaboration on a global basis. This has enabled them to achieve 100% water, sewer and metered connection, non-revenue water of 5.18%, collection efficiency of 99%, monthly bill collection of outstanding arrears is 35 days and 3 staff per a thousand connection by 2004 (Cecilia Tortajada, 2006). In Jordan, Aqaba Water Company (AWC) is one of the major Jordanian water companies that depend on skilled Operation & Maintenance employees. AWC owns and operates both the water and wastewater systems in the southern governorate of Aqaba. It services more than 136,000 people in an area stretching 6,800 square kilometers, which includes the Aqaba Special Economic Zone, Jordan's only outlet to the sea and an important commercial, industrial and tourist center.

The business culture in Japan stresses teamwork or collectivism, which ranks in stark contrast to the sense of individualism that stems from individual liberty and freedom espoused by western culture. The influence of such a culture on the western world has led to the rapid popularity of teamwork and the accepted management best practice now, is to

value teamwork over individualism. Japanese corporations place high importance on teamwork based on their philosophy of “*wa*”, or group harmony, which holds the value of the greater good, as more important than valuing individual needs. Most of the Japanese management percepts require a collaborative approach. The Japanese apply “*wa*” with the inferior partner in the relationship, which is the workers in the corporate context, allying their personal wants, thoughts, and opinions to that of the superior partner. This concept manifests in the present day trend of western corporations seeking organizational success, by ensuring an individual-organizational fit, and creating homogenous teams that espouse corporate values.

In Africa there is a concept known as Ubuntu- the profound sense that we are human only through the humanity of others; that if we are to accomplish anything in this world it will in equal measure be due to the work and achievements of others (Nelson Mandela, 2008). Ubuntu is the potential for being human, to value the good of the community or organization above self-interest. It is to strive in the spirit of service, to show respect to others and to be honest and trustworthy through teamwork and I am because we are; I can only be a person through others (April & Ephraim, 2010). In south Africa Ubuntu foundation has developed and implemented an integrated set of far reaching initiatives and interventions that directly promote and embody the enlightened, humanistic values of South Africa’s Truth and Reconciliation Commission, breakdown and eliminate traditional racial and cultural barriers to togetherness, and corporation through workplace interventions and dynamic networking events, improve the financial success of small and large companies by strengthening the Ubuntu- grounded values, teamwork and leadership skills of all their people (Kelvin Chaplin, 2006).

As outlined by Mbigi, 2002 some of the key values of African leadership are respect to the dignity of others, group solidarity (an injury to one is an injury to all), teamwork, service to others in the spirit of harmony and interdependence.

According to IRC under the triple S (Sustainable Services at Scale), 2014, Ghana and Uganda created an environment that encourages teamwork and ultimately sustainable services at scale, however it has been a game where each player could make up their own rules, where there were no referees and what constitute a goal was up to individual interpretation. It would be chaos on the field; teamwork would be impossible; success uncertain. This is the prevailing situation in many countries in Africa where, in the

absence of clear standards and guidelines for establishing and operating water and sanitation services, district governments, NGOs and community organizations ‘ play their own rules’- putting in place a hodgepodge of technology choices, operating procedure and monitoring frameworks.

2.5 Continuous Improvement (CI) and Provision of Quality Water Services

Lillrank & Kano (1989) refer to CI, or kaizen, the Japanese term for CI, as the “principle of improvement”; however, the Japanese Union for Scientists and Engineers (JUSE) literature does not clearly define kaizen, but uses it to define other concepts. While the term kaizen is often considered synonymous with CI, Imai (1986) proposes that there exist at least three types of kaizen: management-, group-, and individual-oriented kaizen. Management-oriented kaizen is considered to be the most important one as it focuses on the company strategy and involves everyone in the company. Group-oriented kaizen is best represented by quality circles, which require employees to form a team or a circle with the goal of finding and solving problems faced during their day-to-day work without any interference from management.

Individual-oriented kaizen is derived from the concept of bottom-up design, in which the worker makes a recommendation to the problem faced. This has been very successful in the Japanese industry since it is the worker who is on the shop floor and typically knows the best solution to an existing problem. Certain industries even have incentive programs where, depending on the problem and the solution provided, the worker is rewarded, thus encouraging the workers to concentrate on problem areas and find the best solution.

Continuous improvement (CI) is a philosophy that Deming described simply as consisting of “Improvement initiatives that increase successes and reduce failures” (Juergensen, 2000). Another definition of CI is “a company-wide process of focused and continuous incremental innovation” (Bessant et al., 1994). Yet others view CI as either as an offshoot of existing quality initiatives like total quality management (TQM) or as a completely new approach of enhancing creativity and achieving competitive excellence in today’s market (Oakland, 1999; Caffyn, 1999; Gallagher et al., 1997). According to Kossoff (1993), total quality can be achieved by constantly pursuing CI through the involvement of people from all organizational levels

According to Mosby's medical Dictionary 8th edition, 2009, Continuous Quality Improvement Means (CQI) a system that seeks to improve the provision of services with an emphasis on future results, CQI uses a set of statistical tools to understand subsystems and uncover problems, but its emphasis is on maintaining quality in the future not just controlling a process. Once a process that needs improvement is identified, a team of knowledgeable individuals is gathered to research and document each step of that process. Once specific expectation and the means to measure them have been established, implementation aims at preventing future failures and involves the setting of goals, education, and the measurement of results. If necessary, the plan may be revised on the basis of the results, so the improvement is ongoing.

The Japanese developed his or her own ideas, and quality control, which was used initially in the manufacturing process; it had evolved into a much broader term, growing into a management tool for ongoing improvement involving everyone in an organization (Imai, 1986). Over the decades, as the need to continuously improve on a larger scale within the organization became an imperative, a number of CI methodologies have developed based on a basic concept of quality or process improvement, or both, in order to reduce waste, simplify the production line and improve quality. The best known of them are: lean manufacturing, six sigma, the balanced scorecard, and lean six sigma (Nadia Bhuiyan & AmitBaghel, 2005)

Lean manufacturing methodology is a systematic approach to identifying and eliminating waste through CI by following the product at the pull of the customer in pursuit of perfection. Learning a great deal from Henry Ford's assembly lines, and customizing a production process to suit the needs of the Japanese markets, which called for lower volumes of cars, Ohno pioneered and developed the world renowned Toyota Production System (TPS), also known as lean manufacturing and now used throughout the world (Womack et al., 1990). The aim of lean manufacturing is the elimination of waste in every area of production and includes customer relations, product design, supplier networks, and factory management. Womack and

Jones (1996) describes lean thinking as the "antidote" to *muda*, the Japanese term for waste. Waste is defined as anything for which the customer is not willing to pay. Lean manufacturing, if applied correctly, results in the ability of an organization to learn.

Mistakes in the organization are not generally repeated because this in itself is a form of waste that the lean philosophy seeks to eliminate (Robinson, 1990).

Six sigma has been defined as “an organized and systematic method for strategic process improvement and new product and service development that relies on statistical methods and the scientific method to make dramatic reductions in the customer defined defect rates” (Linderman et al., 2003). Minimizing defects to the level of accepting close to zerodeflect was at the heart of the methodology, and focuses on reducing variation in all the processes of the organization. To achieve this, the DMAIC model was developed, i.e. define opportunities, measure performance, analyze opportunities, improve performance, and control performance. Six sigma provides quality measurement that can be used throughout an organization – not only in manufacturing but also in design, administrative, and service areas. Motorola achieved amazing results through the application of six sigma, from 1987 to 1997, achieving a total savings of \$US14 billion while sales enjoyed a fivefold growth during the same period (Klefsjo et al., 2001). In the early 1990s, Robert Kaplan and David Norton developed a methodology that translates the objectives of the organizations into measures, goals and initiatives in four different perspectives, namely financial, customer, internal business process and learning and growth. This methodology came to be known as the balanced scorecard. About 50 per cent of the Fortune 1,000 companies have a balance scorecard system in place (Kaplan and Norton, 1996). Niven (2002) refers to the balanced scorecard as a combination of a measurement system, a strategic management system, and a communication tool. To overcome the weaknesses of one program or another, more recently, a number of companies have merged different CI initiatives together, resulting in a combined CI program that is more far reaching than any one individually. For example, lean cannot bring a process under statistical control and six sigma alone cannot dramatically improve process speed or reduce invested capital.

Lindberg and Berger (1997) have studied the applicability of CI in various types of organizations. The authors found that a number of Swedish organizations with a relatively low degree of standardization of products and processes had successfully integrated CI in work teams. The main thrust of the study was to emphasize the fact that in the traditional Japanese industries, kaizen improvements were being achieved by running the kaizen activities parallel to the regular work of the employees, which was in total contrast to the concept followed by organizations in Sweden, where CI was integrated into the regular

work routines. The parallel structure does have some advantage as it leads to interdepartmental collaboration but it also leads to higher administrative costs (Krishnan et al., 1993).

2.6 Theoretical Framework

Edward Deming 1982 will base this study on the theoretical framework. His quality management approach is made up of three elements: The system of profound knowledge, fourteen obligation of top management, Plan-Do- Check Act (PDCA) cycle (Shewhart cycle).

The system of profound knowledge includes understanding the cause of variations, systems, processes, psychology, knowledge and their relationship to effective quality. Deming develop the fourteen obligation of management (the fourteen points), which outlines his theory. He suggested that improving quality means always and consistently practice the fourteen points. The points represent a full-fledged quality philosophy, which comprehensively covers guidance and management strategies to be followed by senior leadership. Standing out among the points is the basic pre-requisite for an understanding that quality is a purely long time undertaking and requires appropriate commitment with sufficient resources. The perpetual pursuit for quality must be adjusted to incorporate continually changing quality paradigms. Preeminent among these is a major focus on the continually evolving customer expectations, which tend to become more demanding and sophisticated. Significantly the emphasis is on Deming, (1986) fourteen points as shown below:

Create constancy of purpose towards improvement of product and service and a plan to become competitive and a plan to stay in business and provide jobs; adopt the new philosophy. We are a new economic age whereby we can no longer leave with commonly acceptable levels of delays, mistakes and defective workmanship; Cease dependency on inspection to achieve quality. Eliminate the need for inspection on amass basis by building quality into the product in the first place (prevent rather than detect defects); End the practice of awarding business on the basis of a price tag. Eliminate suppliers that cannot qualify with statistical evidence of quality, aim to minimize total cost not merely initial cost; Improve continually and forever every activity in the company to improve quality and productivity and thus, constantly decrease costs; Institute modern method on

the training of the job; Institute supervision. The aim of supervision should be to help people and machines and gadgets to do a better job; Drive out fear, so that everyone may work effectively for the company.

Break down barriers between departments, people in design, production, administration and distribution. They must work as a team; Eliminate numerical goals, targets, posters and slogans for the workforce, asking for new levels of productivity without providing methods; Eliminate work standards that prescribe numerical quotas for the day; Remove barriers that stand between the hourly worker & his right to pride of workmanship; Institute a vigorous program of educating and retaining. New skills are required for changes in techniques, materials and services; create a structure in top management that will put everybody in the company to work in teams to accomplish the transformation

Deming theory has limitations in its emphasis on quality. Deming emphasizes the need for quality management to build quality into the product “quality at the source” means that every employee is responsible for quality in every moment. Dedicated quality departments should be made redundant by this quality approach, since they are decoupled most of the time from internal matters of the production process & will never be as efficient in determining deficiencies. Cost is an important feature in business competitiveness but Deming points out that management that focus on cost reduction is short sighted

2.7 Conceptual Framework

A conceptual framework is a diagrammatical representation of the research problem, hence, an explanation of the relationship among several factors that have been identified as important in the study problem (Ngechu, 2004). The conceptual framework in this study is on the idea that quality water service provision in water service providers depends on the TQM variables that influence quality water services provision are: First customer satisfaction which is elaborated through exceeding customer needs & expectation, sustaining customer loyalty, emergency reliable high quality services, reliable, affordable & quality water supply. Secondly, employee involvement consists of full participation in decision making, planning and design with employees, internal monitoring and evaluation and creating ownership. Third is teamwork, which involves selecting the right people for the job, effective and efficient communication, motivation,

Ubuntu, honesty & trustworthy, clear standards and guidelines. Fourth, is the continuous improvement, which is discussed through education and training, involvement of all organization levels, lean manufacturing and benchmarking.

**INDEPENDENT VARIABLES:
TOTAL QUALITY MANAGEMENT
ADOPTION**

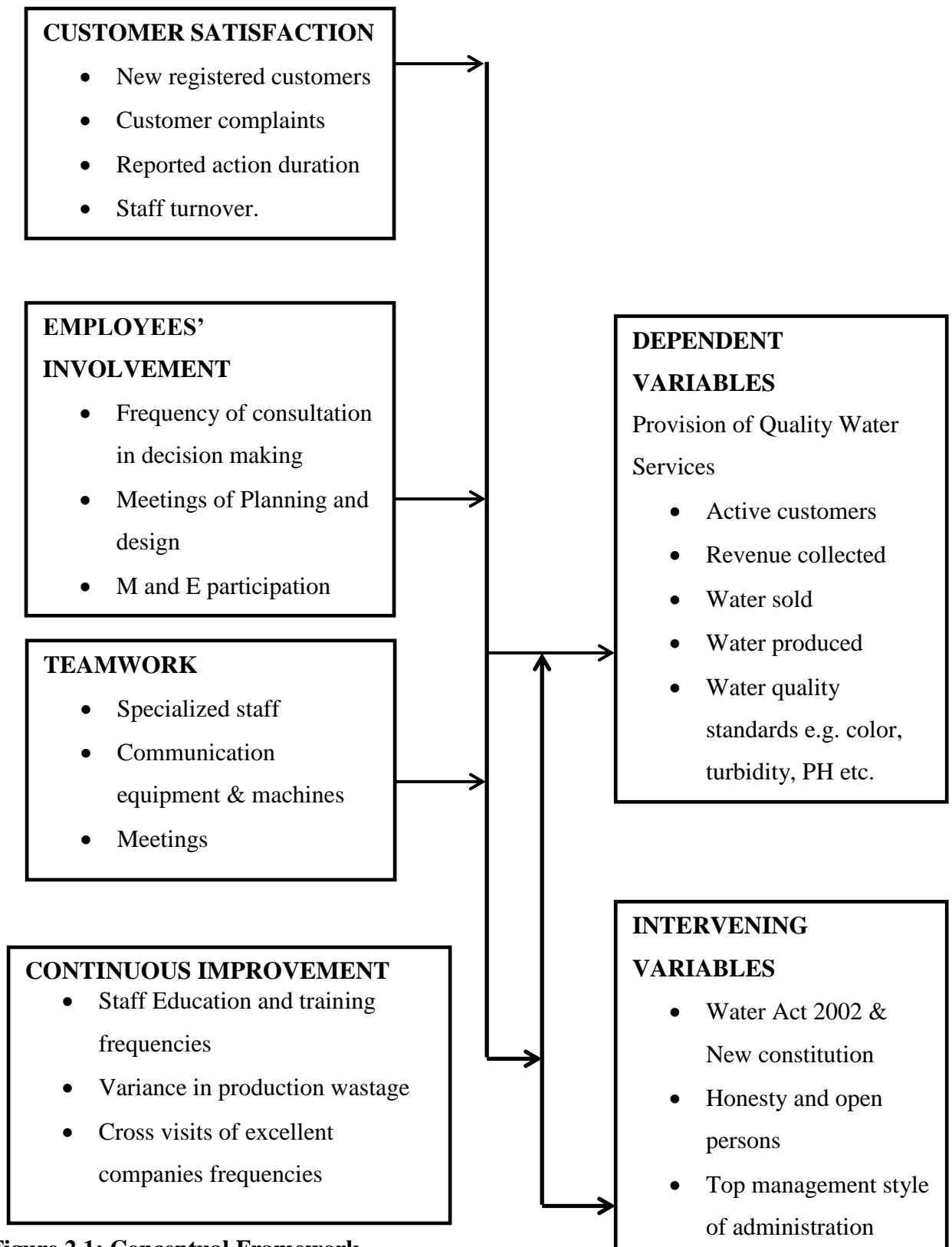


Figure 2.1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction.

This section describes the research procedure and techniques, which were used in the study. It describes the research design, target population, sample size and sampling procedures employed as well as the basis for planning, selecting and developing the research instrument as was used in the study. It also describes the procedure for the applications of the instruments, the data analysis techniques as were used in the study. It finally considers the ethical issues in research.

3.2 Research Design

A research design is the scheme, outline, plan, structure or strategy of investigation conceived so as to obtain answers to research questions and control variance during the primary data collection (Kothari, 2003). The researcher employed a descriptive survey design. Descriptive survey design is a method of collecting information by interviewing or administering questionnaires to a sample of individuals hence suitable for extensive research. Descriptive survey research design is an excellent vehicle for the measurement of the characteristics of large population (Orodho, 2003). Kothari (2003) affirms that the strategy maintains a high level of confidentiality, convenience and enables data to be collected faster, enables questions to be asked personally in an interview or impersonal through a questionnaire about things which cannot be observed easily. It also gives the study an opportunity to get accurate view of response to issues as well as test theories on social relationship at both the individual and group level. A descriptive survey research study was preferred so that the influence of adoption of total quality management on the provision of quality water services could be described, interpreted and bring out the conditions or the relationship that existed, opinions that were held, processes that were ongoing, effects that were evident or trends that were developing (Best & Khan, 2009). The study design integrated both data triangulation using several data sources and methodological triangulation using multiple methods to achieve research objectives. A combination of open ended questions and closed ended questionnaires were used in the study

3.3 Target Population

Kombo and Tromp (2006) defined a population as a group of individual objects or items from which samples are taken for measurement. The study targeted board of directors of both AWSC and LVNWSB and the Company staff. Members of the two boards are 20 in number while the staff of the company is approximately 60 in number

3.4 Sample Size and Sample Selection

Mugenda & Mugenda (2003) proposed that where the number of the study population is less than 300 and are easily accessible, it is recommended that all the members of the target population participate in the study. In view of this, this study targeted all the employees and board of Directors totaling to 80 as approximate target population.

3.5 Research Instruments

A semi-structured research questionnaire was designed for administering to the Board of Directors. Questionnaire was administered to Amatsi Company staff. It comprised of 6 sections (A-F) whereby section A tackled demographic information; Section B, background of the water project, Section C covered the theme of customers' satisfaction. Section D dealt with the staff involvement in water quality services. Section E tackled teamwork within employees and customers in the provision of quality water services. Section F, is to tackle how continuous improvement influenced provision of quality water services.

3.5.1 Pilot Testing

Pilot testing of the research instrument is conducted with a few respondents. According to Mugenda & Mugenda (2003), a pre- test sample of a tenth of the total sample with homogenous characteristics is appropriate for a pilot study. This was also ideal for pilot testing because they operate in the same environment and similar approaches apply to them. For this study, 7 participants (6 Staff and 1 board of Director) from Maseno water supply, equivalent to 10% of the sample size from the respondents were interviewed during the pilot study. After seven days, the same participants were requested to respond to the same questionnaires but without prior notification in order to ascertain any variation in the responses of the first and second test. This is important in the research process because it assists the researcher to identify and correct vague questions and

unclear instructions. It also assists the researcher to capture the important comments and suggestions from participants and to improve on the efficiency of the instrument.

3.5.2 Validity of Research Instruments

A research instrument is valid if it actually measures what it is supposed to measure and when the data collected through it accurately represents the respondents' opinions (Amin, 2005). The validity of the instruments will be ascertained by the pilot study. This ensures that the instructions are clear and all possible responses to each question are captured. Content validity of a measuring instrument is the extent to which it provides adequate coverage of the investigative questions guiding the study (Mugenda & Mugenda, 2003). In the study, content validity was determined by consulting the judgment of research supervisors within the University. The University supervisors reviewed the instruments, recommended for improvements and verified whether the instruments were able to address the objectives of the study.

3.5.3 Reliability of Research Instruments

According to Mugenda & Mugenda (2003), reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. The test re test method was, therefore, to be used to estimate the degree to which the same results would be obtained with a repeated measure of accuracy of the same concept. This determined the reliability of the instruments. The researcher administered the same questionnaires twice to pilot respondents at Maseno water supply scheme and their responses were correlated independently.

After administering the questionnaire, a correlation co-efficient was calculated using Pearson's formula to establish the relationship between the two sets of scores. Correlation is a vicariate analysis that measures the strengths of association between two variables. In statistics, the value of the correlation coefficient varies between +1 and -1. When the value of the correlation coefficient lies around ± 1 , then it is said to be a perfect degree of association between the two variables. As the correlation coefficient value goes towards 0, the relationship between the two variables will be weaker.

Pearson's is the best method of measuring a correlation, because it is based on the method of covariance. It gives information about the magnitude of correlation as well as the direction of the relationship. This method, however, assumes that cases should be independent to each other, variables of the correlation should be normally distributed and that two variables should be linearly related to each other.

The following formula was used to calculate the Pearson's correlation:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Where:

r = Pearson r correlation coefficient

n = Number of value in each data set

$\sum xy$ = sum of the products of the paired scores

$\sum x$ = sum of x scores

$\sum y$ = sum of y scores

$\sum x^2$ = sum of x squared scores

$\sum y^2$ = sum of y squared scores

3.6 Data Collection Procedures

This proposal was presented before the university examination panel for defense. Upon approval of the proposal, the researcher obtained a letter of introduction from the University of Nairobi and a research permit from the National council for science and Technology under the ministry of Higher Education, Science and Technology as a pre-requisite for data collection. The researcher asked for permission from the Chief Executive Officer LVNWSB, MD Amatsi Water Services Company and Vihiga County Water Executive Member. The respondents' were visited on the agreed dates and the correct research instruments administered to them.

3.7 Data Analysis Techniques

Data analysis is the process of systematically searching and arranging field findings for presentation (Bogdan & Biklen, 1992). It involves organizing the data, breaking the data into categories and units and then searching for trends and patterns before deciding to report. The quantitative and qualitative data obtained was coded and clustered for

subsequent statistical analysis. The study used the collected data to enable the establishment of patterns, trends and relationship of the variables in the research study. Data was then analyzed using descriptive statistics such as frequencies and percentage counts and presented in tabular forms. Statistical Package for Social Science (SPSS) was used in analyzing quantitative data. The number of respondents who participated in every particular option was recorded in one column and percentage calculated recorded in another column. The strength of percentages was to be used to indicate preferred response. Qualitative data was transcribed and organized into various emerging themes of the study and was reported normatively.

3.8 Ethical Issues in the Research

Information obtained from other sources or from authors to support the relevance of this research is acknowledged in the reference section at the same time plagiarism forbidden absolutely. The study sought the permission from the respondents to participate in the study and assured them of confidentiality of any information from them, which was also given voluntarily and strictly used for research purposes only.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter presents results and discussions from the analysis of the responses based on the proposal objectives. The proposal had four objectives namely to: establish the extent to which customer satisfaction activities influences provision of quality water services in Vihiga County; determine how the employee involvement influence provision of quality water services in Vihiga County; assess how teamwork has influences the provision of quality water services in Vihiga County; examine how continuous improvement have been influencing the provision of quality water services in Vihiga County.

The proposal tested four questions for the purpose of testing the influence of total quality water adoption in the provision of quality water in Vihiga County. The questions were: To what extent does customer satisfaction influence provision of quality water services in Vihiga County? How does employees' involvement influence the provision of quality water services in Vihiga County? How does teamwork influence provision of quality water services provision in Vihiga County? How does continuous improvement influence provision of quality water services in Vihiga County?

4.2 Questionnaire Response Rate

The study targeted 80 people that were, board of directors of both AWSC and LVNWSB and the Company staff. Members of the two boards were 20 in number while the staff of the company was approximately 60 in number. The study managed to get the views of all the 80 staff, which translated, to a questionnaire response rate of 100%. This was above the 75% response rate proposed as the minimum response rate according to Frankel & Ward (2003). To achieve this response rate, the researcher administered the questionnaire to the respondent, allowed them some time to fill in their responses and then collected the filled in questionnaires immediately.

4.3 Demographic Characteristics of Respondents

This section presents the demographic characteristics of the group members who were involved in the study. The study chose to explore two demographic characteristics that helped explain group dynamics, ability to give reliable information in the study and

ability to participate effectively. These demographic characteristics included age, marital status of respondents, gender, and education level and how long they have stayed in the County. The results were analyzed, discussed and conclusions made on how they influenced adoption of total quality management in the provision of quality water services in Vihiga County.

4.3.1 Distribution of Respondents by Gender on Quality Water Supply

The study started by exploring the distribution of respondents by gender and establishing its influence on quality water. The researcher asked the respondents to indicate their gender and presented the findings in table 4.1

Table 4.1: Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	50	62.5
Female	30	37.5
Total	80	100

Sustainable management of water and sanitation provides great benefits to a society and the economy as a whole. Thus, it is crucial, first to involve both men and women in water and sanitation management to ensure that specific needs and concerns of women and men of all social groups are taken into account, second, it is vitally important to determine what people (consumers of water and sanitation) want, what they can and will contribute and how they will make decisions on the types and levels of service, location of facilities and operation and maintenance (Van & Christine, 1998). Despite the study involved the views of both male and female group members meaning that the findings of the study were representatives and unbiased based on gender which agrees with observations made by Cornwell (2000) who noted that there was need to emphasize on equal participation between men and women in customer satisfaction, employee involvement, teamwork and continuous improvement activities in water quality services.

A study done by the international water and sanitation center of community water and sanitation projects in 88 communities in 15 countries found that projects designed and run with full participation of women were more sustainable and effective than those that did

not. This supported an earlier World Bank study that found that women participation was strongly associated with water and sanitation (Van & Christine, 1998)

4.3.2 Age of Respondents and Sustainability of Projects

The study examined the age distribution of the respondents and how it influenced water quality services and presented the findings in table 4.2

Table 4.2: Age distribution of the group members

Age	Frequency	Percentage
18-30	17	21.25
31-40	23	28.75
41-50	28	35.0
51-60	12	15.0
Total	80	100.0

From table 4.2 above the results showed that the age brackets among respondents were as follows; 17(21.25%) were in the age category of 18-30 years, 23(28.75%) were over 31-40 years. Similarly, of the group members 28(35%) were falling in the age bracket of between 41-50 years and lastly 12(15%) of the respondents were over 51 years old. The analyses for the age distribution of the respondents revealed that 78.75% were above 31 years of age. This showed that the respondents were mature and experienced enough to understand the influence of the adoption of TQM in water services provision in the company.

4.3.3 Distribution of Respondents by Academic Qualification

The respondents were asked about their academic qualifications. This was crucial in establishing the level of education they had as it gave objective insights in the variables of study. It is expected by design that a person who has a high educational qualification is better placed to understand what TQM and its adoption in water utilities is than those with lower academic qualifications. Table 4.3 shows the distribution of respondents according to their academic qualification.

Table 4.3: Academic Qualifications of Respondent

Academic qualification	Board of directors f(%)	Employees f(%)
Certificate	0(0.0)	35(43.75)
Diploma	2(10.0)	25(31.25)
Degree	15(75.0)	15(18.75)
Masters	2(10.0)	5(6.25)
Phd	1(5.0)	0(0.0)
Total	20(100.0)	80(100.0)

4.3.4 Distribution of the Respondents by Experience

The respondents were asked about their years of experience in the water service provision field to determine how knowledgeable they were in TQM issues and the amount of information they had about their organization. The respondents were asked to state their experience in water services and the results were shown in table 4.4

Table 4.4: Experience of Directors and Staff

Experience in Years	Directors		Staff	
	Frequency	%	Frequency	%
Below 1	0	0.0	0.0	
1-3	5	25.0	10	12.5
4-6	5	25.0	20	25.0
Above 6	10	50.0	50	62.5
Total	20	100.0	80	100.0

The results in table 4.4 indicate that majority of the staff and directors had experience of over six years as indicated by 50(62.5%) and 10(50.0%) respectively. There was no staff or director with experience below one year 25% of them had experience of 4-6 years. 5(25.0%) of the directors and 10(12.5%) of the staff had experience of 1-3 years. These results indicate that the respondents had enough experience in the field of study and therefore the views given would reflect the true picture of the findings.

4.4 Influence of Customer Satisfactions on Provision of Quality Water Services.

The first objective was to establish the influence of customer satisfaction on provision of quality water services. Satisfaction may be considered as a customer's evaluative reaction to how particular product or service performed compared to how he or she anticipated that it would perform (Woodruff & Gardial, 1999). Customer Satisfaction: Is an outcome of purchase and use, resulting from the buyer's comparison of the rewards and the costs of the purchase in relation to the anticipated consequences (Churchill & Surprenant, 1982). The most important asset of any organization is a customer. An organization's success depends on how many customers it has, how much they buy and how often they buy. Satisfied customers also pay their bills promptly, which greatly improves cash flow—the lifeblood of any organization. Customers that are satisfied will increase in number, buy more, and buy more frequently (Dale et al 2013). Quality pays in terms of profit, market share and productivity; successful organizations give high priority in understanding and responding to customer needs (Buzzel & Gale 1987). This section presents the findings under the following sub-thematic areas: presence of tap water and its quality and quantity, response time to water leaks, bursts and customer complaints, cost of the water.

4.4.1 The Presence on Tap Water, Quality and Quantity.

Customers were enquired about the availability of tap water, its quality and quantity on customer satisfaction and how it influenced provision of quality water services in Vihiga County. The results were presented in table 4.5

Table 4.5: Influence of the Presence of Tap Water on Quality Water Services Provision.

Tap Availability	Frequency	Percentage
No	41	41
Yes	59	59

The results in table 4.5 indicate that availability of water influenced quality water services provision, according to the response from the majority 59(59.0%) of the customers, whereas only 41(41.0%) were against the idea. Due to the large percentage of the customers that supported this statement, it is clear that presence of tap water could influence quality water service provision. The study thus also sought to establish the

hours that water was supplied per day as part of establishing presence of tap water. The results are presented as shown in table 4.7.

Table 4.6 Water Supplies Hours per Day

Hours	Frequency	Percentage
Less than 6 hours	40	40.0
Less than 12 hours	29	29.0
More than 12 hours	18	18.0
24 hours	13	13.0

From the study findings on the hours that water was supplied as shown in table 4.6, it emerged that it was less than 6 hours as revealed by majority of the respondents. The second category that reported fewer hours were 29(29.0%) who reported less than 12 hours per day, then those who reported more than 12 hours per day, 18(18.0%) and finally the fewest respondents reported 24 hours per day, 13(13.0%). This implies that water availability was a problem since less than six hours per day was not sufficient for consumption. This may have a problem on the provision of quality water services and therefore the study enquired on the taste of the available water as well, in order to check on the water quality. Customers were asked to indicate whether the water that was produced was salty, sweet, bitter, or tasteless. The results are presented as shown in table 4.7.

Table 4.7 Taste of the Water

Taste	Frequency	Percentage
Salty	60	60.0
Sweet	1	1.0
Bitter	9	9.0
Tasteless	30	30.0

The sample response from the customers on the water that was produced as shown in table 4.7 indicates that it was salty, according to the majority of the respondents, 60(60.0%). Those who reported that it was tasteless were second in category, 30(30.0%), followed by those who reported that the water was bitter, and finally, only one of the

respondents reported that water was sweet. The results indicate that the water quality was low, since it was salty. Therefore customer services would not have been of quality due to the classification of the taste of the water that was produced according to the response that was given. As a result, the study sought to find out the influence of customer satisfaction on provision of quality water services. The different elements of customer satisfaction were used, as discussed. These included water taste, water supply, presence of water tap, quality and quantity, which were correlated against provision of quality water. Pearson product moment correlation was used to find the relationship. The results are presented as shown in table 4.8.

Table 4.8 Correlations between Customer Satisfaction and Provision of Quality Water Services

Correlation	1	2	3	4
1 Provision of Quality Water services	1			
2 Presence of water tap, quality and quantity	.237*	1		
3 Water supply in hours	.314**	.285**	1	
4 Water Taste	.291**	.411**	.718**	1

*. Correlation is significant at level 0.05 (2-tailed).
 **. Correlation is significant at level 0.01 (2-tailed).

The results in table 4.8 indicate that there was a low but positive significant correlation between presence of water tap and provision of quality water ($r=.237$, $p<.05$). This implies that there existed a relationship between presence, quality, quantity of water and provision of quality water, such that the scarcity of water tap led to provision of low quality water services thus having an influence on provision of quality water services. Water supply in hours as recorded a low but highly significant correlation with the provision of quality water services ($r=.314$, $p<.05$). This shows that water supply in hours was very significant to customer satisfaction and hence highly influenced their rating on the provision of quality water services. Due to the fewer hours that water was supplied, there was low rating on the provision of quality water services by the customers. Finally, water taste had a low correlation with provision of quality water services, which was also significant ($r=.291$, $p<.05$). This implies that it influenced provision of quality water

services. It is thus clear from these findings that customers were not fully satisfied with the services produced and thus this influenced the provision of quality water services, such that the low satisfaction as indicated by water presence, supply in hours and taste led to low quality water services thus the influence was high. An almost similar study by Hart (2007) also revealed that in many service-intensive industries, however, if a company's customer satisfaction increases, customers will be quick to adjust their behavior and tell other people, whose own purchase behavior is also likely to change quickly.

Another study also revealed the negative effect of water quality service provision. According to World Bank, Indonesia, Surabaya Water Company NRW management strategy final report, 2011 found that, sharp increase in the demand for drinking water and sewage disposal services has exacerbated the already precarious situations of the water supply sewerage infrastructure. There is also lack of well-trained personnel in the utilities that has led to inefficiency in overall management and technical operation. However, contrary to the situation in Kenya, another study revealed that the customer satisfied with Bristol water service delivery is 95%, through providing a highly reliable water service 24 hours a day, providing excellent quality water which is their unquestioned top priority and the customer serve. Bristol water has sophisticated treatment process in place to ensure that all water produced is clear, clean and fresh according to drinking water inspectorate annual report (Keith et al, 2013). Quality water services are thus important to customer satisfaction and this can influenced further services produced.

4.5 Influence of Employee Involvement on Provision of Quality Water Services

The researcher was concerned with how employee involvement influenced provision of quality water. This second objective started by asking the respondents questions on staff involvement in participation in planning and design, meeting with top management, department and unit, cross visiting, participation in technological change and when major decision are made. The results are presented in table 4.12 in frequency counts and percentages.

Table 4.9 Employee Involvement

Employee involvement	SA	A	U	D	SD	Mean	S/D
You participate In planning and Design	8(8.0)	12(12.0)	1(1.0)	70(70.0)	9(9.0)	3.7	.67
Staff Regularly meet the management	15(15.0)	10(10.0)	4(4.0)	65(65.0)	6(6.0)	3.2	.91
You are consulted when making major decisions	22(22.0)	15(15.0)	6(6.0)	45(45.0)	12(12.0)	3.1	.56
You always meet as a department	21(21.0)	20(20.0)	2(2.0)	20(20.0)	37(37.0)	3.0	.67

KEY:SA- Strongly Agree A – Agree U- Undecided D- Disagree SD- Strongly Disagree

The results in table 4.9 indicate that majority 70(70.0%) disagreed in participation in planning and design, and further reported that the staff did not regularly meet the management as reported by 65(65.0%). The number of respondents that were only consulted when making major decisions were also few, 22(22.0%) who strongly agreed and 15(15.0%) who agreed. Finally, only 21(21.0%) strongly agreed and 20(20.0%) agreed that they always met as a department. The results indicate that there is low employee involvement on provision of quality water services. As a result, the study therefore sought to determine whether a relationship existed between employee involvement and provision of quality water services. Pearson product moment correlation was therefore used to determine this relationship at 0.5 significant levels, and the results are presented as shown in table 4.10.

Table 4.10 Correlation between Employee Involvement and Provision of Quality Water Services

	Provision of Quality Water	Employee Involvement
1 Provision of Quality Water	1	
2 Employee Involvement	.237*	1

*. Correlation is significant at level 0.05 (2-tailed).

The results in table 4.10 indicate that there is a low positive significant relationship between provision of quality water and employee involvement ($r=.237$, $p<.05$). This implies that the low employee involvement leads to low provision of quality water services. Therefore there would be some effect of employee involvement on provision of quality water services, and to establish this, a simple linear regression model was carried out. The coefficient results for the unique contribution of employee involvement to the provision of quality water services are presented as shown in table 4.11.

Table 4.11 Coefficient Results for Contribution of Employee Involvement

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	T	Sig.
		B		Beta		
1	(Constant)	1.616	0.436		3.707	0
	Employee Involvement	0.269	0.111	0.237	2.42	0.017

a. Dependent Variable: Provision of Quality water services

The results in table 4.11 indicate that employee involvement had a unique significant contribution to the provision of quality water services, ($\beta=0.237$, $t(99)=2.42$, $p<.05$). This implies that a change in the provision of quality water services is uniquely contributed by employee involvement. Summary results to explain the percentage that employee involvement accounted to the provision of quality water services was also presented as shown in table 4.12.

Table 4.12 Summary Model Results for Percentage change in Quality Water Services explained by Employee Involvement

Model	R	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
	Square	R Square		R Square Change	F Change	df1	df2	Sig. Change	F
1	.237a	.056	.047	.056	5.858	1	98	.017	

a. Predictors: (Constant), employee involvement

The results in table 4.12 indicate that employee involvement accounted for 4.7% significant change in the provision of quality water services, (Adjusted R square =.047, $p < .05$). This implies that employee involvement accounts for provision of quality water services, such that better or higher level of employee involvement could explain a larger percentage. These results agree with the findings of a study done by Edward Lawler, (1996) in 1000 firms at the University of Southern California in USA, which revealed that employee involvement had an average return on investment of 19.1%, compared with 15.2% for those who made little use of it.

4.6 Influence of Teamwork on Provision of Quality water Services

The study sought to determine the influence of teamwork on provision of quality water services. In order to achieve this, the respondents were asked to share their views on the management styles, effectiveness and efficiency of communications, roles and responsibilities, trust among team members, expression and the way they handle conflict. The results are presented as shown in table 4.13 in frequency counts and percentages, means and standard deviation.

Table, 4.13. Teamwork among Employees

Teamwork	SA	A	U	D	SD	Means	S/D
Management style influences teamwork	5(5.0)	15(15.0)	7(5.0)	30(30.0)	43(43.0)	3.14	0.681
Communication is efficient and effective	10(10.0)	13(13.0)	8(8.0)	33(33.0)	36(46.0)	3.72	1.34
There are clear roles and responsibility	17(17.0)	38(38.0)	11(11.0)	17(17.0)	17(17.0)	2.79	1.39
Team members trust each other	9(9.0)	21(21.0)	8(8.0)	32(32.0)	30(30.0)	3.53	1.35
There is free expression	12(12.0)	21(21.0)	10(10.0)	33(33.0)	24(24.0)	3.36	1.37
Team morale is high	13(13.0)	19(19.0)	12(12.0)	29(29.0)	27(27.0)	3.38	1.40
Conflict are well handled	11(11.0)	16(16.0)	10(10.0)	28(28.0)	35(35.0)	3.60	1.39

KEY: SA- Strongly Agree A – Agree U- Undecided D- Disagree SD- Strongly Disagree

The results in table 4.6 indicate that management does not influence teamwork as strongly disagreed by 43(43.0%) and disagreed by 30(30.0%) of the staff and managers. In addition, the results indicated that communication was not efficient and effective due to majority response of 36(36.0%) who strongly disagreed on the statement and 33(33.0%) who agreed. However, there was a positive response on the roles and responsibilities that were in the company as agreed by 38(38.0%) and 17(17.0%) of the staff and management making a positive mean of 2.79. The rest of the elements under teamwork among the employees had a negative response since the mean was above 3.0. These were trust among the team members, with a mean of 3.53, free expression with a mean of 3.36, low team morale (M=3.38), and finally conflict handling which was not well handled (M=3.60). Pearson product moment correlation was also carried out in order to establish whether there was relationship between teamwork and provision of QWS. The results are presented as shown in table 4.14.

Table 4.14 Correlations between Team Work and Provision of QWS

Correlations	Provision of Quality Water	Team work
Provision of Quality Water	1	.285**
Team work	.285**	1

The results in table 4.14 indicate that there is a low but positive correlation between teamwork and provision of quality water services ($r = .285, p < .05$). This implies that provision of QWS depended on teamwork and the better the teamwork, the better the provision of QWS. It was therefore necessary to hypothesize teamwork as having an influence on provision of QWS. Carrying out a simple linear regression analysis in order to find out how uniquely teamwork contributed to provision of QWS proved this. First, the coefficient results showing the uniqueness of the contribution of teamwork on provision of QWS was presented as shown in table 4.14.

Table 4.15 Coefficient Results for Contribution

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	2.957	.287		10.293	.000
	Teamwork	.276	.094	.285	2.948	.004

a. Dependent Variable: provision of quality water services

The results in table 4.15 indicate that teamwork uniquely contributed to the provision of quality water services (beta=.276, $p < .05$) thus implying that a unit or standard deviation change in the team work effort would lead to .276 change in the provision of QWS on the given five point scale. Thus the study presented summary results to indicate the percentage change in the provision of QWS explained by teamwork. The results are also presented as shown in table 4.16

Table 4.16 Summary Model results for Percentage change in Quality Water Services explained by Team Work

Model	R	R Square	Adjusted R Square	Error Change Statistics						
				Std. Estimate	theR Change	SquareF Change	df1	df2	Sig. Change	F
1	.285a	.081	.072	1.17664	.081	8.690	1	98	.004	

a. Predictors: (Constant), team work

The results in table 4.16 indicate that teamwork explained 8.1 % significant change in the provision of quality water services (adjusted R Square = .081). This implies that teamwork was very important to the provision of QWS. An improved effort in team work could lead to a higher percentage change in the provision of QWS, however, the low percentage was as a result of low team work efforts towards provision of QWS.

These study findings could be supported by a study by Cecilia Tortajada (2006) In Singapore, which revealed that the best water practices require teamwork and collaboration on a global basis. This has enabled them to achieve 100% water, sewer and metered connection, non-revenue water of 5.18%, collection efficiency of 99%, monthly

bill collection of outstanding arrears is 35 days and 3 staff per a thousand connection by 2004. In addition, according to IRC under the triple S (Sustainable Services at Scale), 2014, Ghana and Uganda created an environment that encourages teamwork and ultimately sustainable services at scale, however it has been a game where each player could make up their own rules, where there were no referees and what constitute a goal was up to individual interpretation. It would be chaos on the field; teamwork would be impossible; success uncertain

4.7 Influence of Continuous Improvement in the Provision of Quality Water Services

The last objective of the study was to examine how continuous improvement influenced the provision of quality water services. Therefore the researcher asked the respondents questions related to continuous improvement. The respondents were asked if; the company had ever benchmarked. The employees made recommendations of the problems and challenges they faced, and management took the recommendation positively. Knowledgeable employees gathered research and made recommendations for improvement. Lastly, they were asked if unaccounted for water or clean water waste was at its minimal level as required by the government.

Table 4.17 perception of respondents on continuous improvement in the provision of quality water services

Statements	SA	A	U	D	SD	Means	S/D
The company has been doing cross visits to benchmark	11(11.0)	20(20.0)	15(15.0)	38(38.0)	16(16.0)	3.37	1.36
Employees always make recommendations to the management	12(12.0)	13(13.0)	8(8.0)	32(32.0)	35(35.0)	3.65	1.39
Management does not take recommendations positively	8(8.0)	11(11.0)	10(10.0)	42(42.0)	29(29.0)	3.73	1.22
Knowledgeable staff sometimes do reach on areas that need improvement	27(27.0)	27(27.0)	16(16.0)	17(17.0)	13(13.0)	2.62	1.38

The results in table 4.17 indicate that the company did not do cross visit to benchmark as indicated by majority of the respondents who disagreed, 38(38.0%) and 16(16.0%) who

strongly disagreed. It also emerged that employee did not always make recommendations to the management as indicated by 35(35.0%) of the managers and staff who strongly disagreed and 32(32.0%) who disagreed. Furthermore, the management did not take recommendations positively as indicated by 29(29.0%) of the respondents who strongly disagreed and 42(42.0%) who disagreed. However, it came out that knowledgeable staff sometimes reached on areas that needed improvement as indicated by 27(27.0%) of the managers and staff who strongly agreed and agreed on the same making a mean of 2.62. The overall results indicated that continuous improvement in the provision of quality services was lowly rated and therefore this could have low effect on the provision of quality water services.

Pearson product moment correlation was also carried out in order to determine whether a relationship existed between respondent's views on the continuous improvement on the provision of quality water services and provision of quality water services. The results are presented as shown in table 4.18.

Table 4.18 Correlation between Continuous Improvement on Provision of Quality Water Services and Provision of Quality Water Services

Correlations		1	2
1	Provision of Quality Water Services	1	.718**
2	Continuous Improvement	.718**	1

** . Correlation is significant at level 0.01 (2-tailed).

The results in table 4.16 indicate a high positive significant correlation between continuous improvement of provision of quality water services and provision of quality water services itself ($r = .718$, $p < .01$). This implies that there is a very high relationship between continuous improvement and provision of quality water services. There it can be deduced that the more the continuous improvement, the more the better provision of quality water services and therefore the high correlation is due to the match between the low level of improvement and the low level of provision of quality water services. It was therefore necessary to find the influence of continuous improvement on provision of quality water services. As a result, simple linear regression model was carried out to so as to explain the percentage accounted by the continuous improvement on provision of

quality water services. The results for the unique contribution are first presented as shown in table 4.17.

Table 4.19 Coefficient Results for Contribution of Continuous Improvement

Model		Unstandardized		Standardized t	Sig.
		Coefficients			
		B	Std. Error	Beta	
1	(Constant)	.461	.246	1.877	.064
	Continuous improvement	.722	.071	.718	10.210

a. Dependent Variable: Provision of QWS

The results in table 4.17 indicate that continuous improvement on provision of quality water services had a unique contribution towards provision of quality water services (beta=.718, t (99)=10.210 p<.01). A summary model for the percentage explained by continuous improvement was also presented as shown in table 4.18.

Table 4.20 Summary Model Results for Percentage change in Quality Water Services explained by Continuous Improvement

Model	R	Adjusted R Square	RStd. Error of the Estimate	Change Statistics		df1	df2	Sig. Change	F
				R Square Change	F Change				
1	.718a	.515	.510	.88388	.515	104.241	1	98	.000

a. Predictors: (Constant), Continuous improvement of quality water services

The results in table 4.18 indicate that continuous improvement in provision of quality water services accounted for 51.0% significant change in provision of quality water services. This is a large percentage as compared to other variables. Thus it can be deduced that continuous improvement of quality water services explains larger change in provision of quality water services.

CHAPTER FIVE
SUMMARY OF THE RESEARCH FINDINGS, DISCUSSION, CONCLUSION
AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the findings of the entire study from chapter one. Literature review has been incorporated and the results compared with the present finding. There is a discussion of the summary of the findings in chapter as per the objectives of the study and conclusions have been made on the basis of the findings and the literature review. Finally, suggestion for further studies and recommendation is made to complete the research project.

5.2 Summary of the Findings

Summary of the research findings were made as per the objectives of the study starting with objective one as presented in the following sub topics.

5.2.1 Customer Satisfaction and Provision of QWS

Customer satisfaction composed of presence of tap water, satisfaction with water supply hours per day, and taste of water. The results revealed that availability of water influenced quality water services as indicated by 59(59.0%) of the staff and managers. However, this water was supplied for less than six hours per day, an indication that even though its availability could influence provision of QWS as rated by the respondents, there was scarcity of the same water and the even the available water did not have a good taste. The results indicated that the water taste was salty, as reported by the majority of the managers and staff, 60(60.0%). This shows that the water was of poor quality and could not have rendered quality services by the staff. Pearson correlation coefficient results thus revealed that water supply in hours had the highest relationship with provision of QWS, as compared water taste and presence of tap water, and the quality. The correlation between water supply hours in a day was low but positive and significant ($r=.314$, $p<.05$) while correlation between water taste and provision of QWS was slightly lower though also positive and significant ($r=.237$, $p<.05$).

5.2.2 Employee Involvement and Provision of QWS

Under employee involvement, participation in planning and design was found to be minimal as revealed by 70.0% of the respondents, in addition, the meetings between staff

and management was rare as revealed by 65% of the respondents. There were also no consultations to the staff when major decisions were made, even though there were meetings as departments as revealed by a mean of 3.0, which was neutral. There was a low positive significant relationship between provision of quality water and employee involvement ($r=.237$, $p<.05$), with employee involvement for 4.7% change in provision of QWS making a unique contribution to the provision of QWS ($\beta= .237$).

5.2.3 Teamwork and Provision of QWS

The results on the influence of management on teamwork by views indicated that there was no influence of management on teamwork as shown by a cumulative percentage of 73.0%. This shows lack of motivation towards teamwork, and a reflection of independence in the provision of water services by the employees. The problem was therefore the management who did not encourage teamwork by encouraging the employees to embrace the same. In addition, communication was a problem that was encountered as not being effective as reported by a cumulative percentage of 69.0%, much higher than 50.0% that would have neutralized. There is therefore a problem of communication among the employees, employees and management, and among the management, which reflects lack of coordination. Positive response was achieved on the role and responsibilities of the company as indicated by a mean of 2.79. The rest of the feedback among the employees reflected a negative response which was more than 3.0. A correlation of 0.285 was achieved, which was very much significant, indicating that the relationship between employee involvement and provision of QWS was significant. Regression analysis also revealed that teamwork accounted for 8.1% change in the provision of QWS, with the coefficients also revealing a unique contribution to the provision of QWS.

5.2.4 Continuous Improvement and Provision of QWS

The results indicated that there was no cross visit to benchmark as indicated by majority of the respondents cumulatively, 54% who disagreed. It also emerged that employee did not always make recommendations to the management as indicated by a cumulative 67.0% of the staff and managers who disagreed. Furthermore, the management did not take recommendations positively as indicated by 29.0% of the respondents who strongly disagreed and 42.0% who disagreed. However, it came out that knowledgeable staff sometimes reached on areas that needed improvement as indicated by 27.0% of the

managers and staff who strongly agreed and agreed on the same making a mean of 2.62. There was also a relationship between continuous improvement and provision of QWS ($R=.718$, $P<.05$). The regression model also accounted for 51.0% change in the provision of QWS, a unique contribution ($\beta=.718$).

5.3 Discussion of the Findings

From the above summary findings, discussions were made as per the following subtopics.

5.3.1 Influence of Customer Satisfaction on Provision of QWS

The results on customer satisfaction and provision of quality water services imply that water supply was very important to the provision of QWS and therefore the more the supply, the more the quality the services, though on the other hand, it was necessary for the same water to have a good taste and recommended color. If these conditions were not met, as in the case in the present study, the customer rating on the services provided would be alarming. The influence of customer satisfaction has therefore a very significant influence on the provision of QWS, due to the positive significant correlation that was obtained, particularly hours in a day that the water was supplied.

5.3.2 Influence of Employee Involvement on Provision of QWS

As a result of the high percentage of the staff and management that reported low involvement of employee, there is clear indication that the employees did not contribute much to the provision of QWS. Contrary to this, it is the role of employees to provide the services to the consumers of water instead of themselves acting more of the consumers. The management however seemed to have been considering either machines or other ways of providing these services other than the employees. There meeting with the management was also minimal, an implication of absolute lack of involvement, with additional problem of lack of consultations to the employees, even though they are the technicians on the ground. It is therefore true that as much as there was a high correlation, an implication of relationship between employee involvement and provision of QWS, its impact on these services was almost legible. In the event that employee involvement was considered in the provision of QWS, the percentage that would be accounted for would be 4.7%, with even a greater percentage would there be consistency. Therefore, employee involvement had a unique contribution to the provision of QWS and a small increase in their involvement would lead to 0.237 unit increase in the provision of QWS.

5.3.3 Influence of Teamwork on Provision of QWS

Even though most companies neglect teamwork, the present findings revealed that teamwork is paramount to the provision of water services, a finding that could be extended to the provision of any given services. The results indicate majority of the respondents reporting negative response over many factors that compose teamwork, such as clear roles in the company, trust among members in the company, freedom of expression, team morale and communication. Almost all the elements had a mean above 3.0 implying that teamwork was not considered of importance in the provision of quality water services.

5.4.4 Influence of Continuous Improvement on Provision of QWS

According to Kossoff (1993), total quality can be achieved by constantly pursuing CI through the involvement of people from all organizational levels. In the present findings, the results revealed that continuous improvement has a high correlation with provision of QWS and therefore has a great and significant influence as indicated by linear regression. This implies that all the variables under continuous improvement contribute to the provision of QWS. Any small change in the continuous improvement in terms of cross visit benchmarks, employee recommendation to the management, perception of management to the employees and improvement of areas of need by management staff leads to a similar change in the provision of QWS.

5.4 Conclusions

Water quality is relevant to the customer satisfaction such that the three elements under water quality, which includes water quantity, color and taste must be taken into consideration. When water is supplied more than six hours in a day, customers tend to get enough of it and therefore there may not be complaint on the availability of this water. This will have a positive perception on the provision services since they would be working hard to ensure that water is provided at all times. If the color is the recommended one, and also the taste is up to date according to the consumers; there would be no issue with the water companies since customers would be satisfied. However, since all these qualities were not met, it can be concluded that customers were not satisfied with the provision of QWS and this had a negative influence on the provision of QWS.

An aspect of second importance was the employee involvement in the provision of QWS, which was low. This has led to low provision of QWS and therefore the water that was

supplied to the consumers seemed to be of poor quality. This explains how serious involvement of employees to the provision of QWS would lead to poor rating on the services. The clarity of the matter is that no efforts are done in involvement of employees in the provision of QWS and therefore the management seems to be working of their own despite the fact that there are employees in the company.

Teamwork was not considered as important in the provision of quality water services, but is an aspect among employees that should be taken as a priority. However, it cannot be achieved unless the management intervenes to ensure that it works. This has not been possible as there is no proper communication, no morale among team members, and no freedom of expression, among other important elements. It is therefore clear that the companies in terms of improving or motivating teamwork in order to achieve the desired results in terms of water services have also not done much.

Continuous improvement is significant to the provision of QWS since this dictates any change that takes place. Due to the fact that the company does not do enough cross benchmark, there is a chance of slow improvement in the provision of QWS and as a result, there is a likelihood of more poor quality services that may be provided by the company.

5.4. Recommendations of the Study

As a result of poor water services that did not meet the customers' expectations, it is recommended that the company management employ more skilled workers with more expertise in the provision of quality water services. The existing service providers should also undergo training on service improvement so that they can be sensitive to the quality of water before it can be supplied to the customers.

The Ministry Environment, Water and Natural Resources should embark on educating both private and public sector management in all the companies on the importance of employee involvement in the provision of QWS. In addition, the companies should take the initiative of motivating employees and also scheduling meetings with them on their views on improving the quality of water services that was provided, since water is important to the lives of people.

The study recommends awareness of teamwork workshops to be carried out by the government, and management of the companies in order to achieve better results in government Parastatals and also private sectors. Finally, the study recommends more conferences to be carried out for managers in order to enhance their skills, change their attitude towards continuous improvement on the provision of QWS and integrate all the total quality management principles in all the water provision services operation

APPENDICES

Appendix I: Questionnaire for collecting data on quality water services provision in Vihiga County, Case study Amatsi Water Services Company.

A. Section A: Demographic Information

Age of the respondent

- a) 18-30 years []
- b) 31-50 years []
- c) 51 -70 years []
- d) Above 70 years []

Gender of the respondent

- a) Male []
- b) Female []

What is your level of education?

- a) Never attended school []
- b) Primary school []
- c) Form four []
- d) Under graduate []
- e) Post graduate []

4. How long have you been in this County of Vihiga?

- a) Less than a year []
- b) One year []
- c) Two years []
- d) Three years []
- e) Four years []
- f) More than four years []

Section B: Background of the project

When was this project started?

- a) 10 year ago []
- b) 20 years ago []
- c) 30 years ago []
- d) Over 30 years ago []

How long have you been working for this organization?

- a) Below 1 year []
 1-3 years []
 4-6 years []
 7-8 years []
 c) Over 9 years []

Section C: Water Consumers Questionnaire on Customer Satisfaction.

Write the correct number for the questions asked e.g. strongly disagree (1), disagree (2) neutral (3), agree (4) strongly agree (5)

- You have tap water []
 The water supply is more than 6 hours per day []
 You receive the water supply every day or after two days []
 The water has some taste []
 The water is colored []
 The water is smelly []
 I like the response time to complaints when I report to the company []
 I appreciate the time taken to reconnect me when disconnected []
 The water is affordable []
 I'm happy with the water supply services of the company []

Section D: Employee Involvement Questionnaire for the Management and Staff of the Company.

Write the correct number for the questions asked e.g. strongly disagree (1), disagree (2) neutral (3), agree (4) strongly agree (5)

- You allow all staff to participate in planning and design []
 Management always meets with all staff frequently []
 Top management always consults staff when making major decisions []
 You always meet as a department []
 Your staff quite often participates in technological change []
 You have been taking your staff to college to further their education []
 The staff regularly goes for cross visiting []

Section E: Teamwork Questionnaire for the Supervisors and Operative staff

Write the correct number for the questions asked e.g. strongly disagree (1), disagree (2) neutral (3), agree (4) strongly agree (5)

There is water loss or waste during production & distribution []

The company's management style influences the success of effective team []

Leaders have created an informal opportunity for team members to share information
With each other []

Team leaders are ensuring that team members help each other when necessary []

Team members always monitor their emotional and physical status on the job []

Personal conflicts within the team is always dealt with immediately to avoid
Affecting quality water services []

Communication is always very effective and efficient within the teams []

I feel free to express my opinions to members of the team []

I share my ideas/suggestions whether my boss agrees with it or not []

Team members trust each other []

Everyone in the team has clear and vital roles and responsibilities []

The team has adequate skills and resources to achieve its goals []

Team meetings are well attended by all members []

Morale of the team is high []

Section F: Continuous Improvement Questionnaire for all the Respondents Apart From
Consumers

Write the correct number for the questions asked e.g. strongly disagree (1), disagree (2) neutral (3), agree (4) strongly agree (5)

The company has been doing cross visits with the excellently performing water
Companies for the purpose of benchmarking []

Employees always make recommendation to the problems they faced to the
Management for further action []

Management does take the recommendations positively and implement them for better
Water quality services

[]

Knowledgeable individuals are sometimes gathered to research and document each
Step in the areas the company needs to improve on as identified by staff []

Water that is going to waste or the unaccounted for water is at its minimal level as
Required by WASREB []

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The Secretary
National Council for Science and Technology
P.O Box 30623-00100
NAIROBI, KENYA

28th October, 2015

Dear Sir/Madam,

RE: OWINO MAURICE ODHIAMBO - REG NO: L50/619/2013

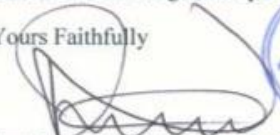
This is to inform you that **Owino Maurice Odhiambo** named above is a student in the University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Kisumu Campus.

The purpose of this letter is to inform you that **Maurice** has successfully completed his course work and Examinations in the programme, has developed Research Project Proposal and submitted before the School Board of Examiners which he successfully defended and made corrections as required by the School Board of Examiners.

The research title approved by the School Board of Examiners is: *"Influence of Total Quality Management Adoption on Provision of Quality Water Services in Vihiga County: A Case of Amatsi Water Company"*. The research project is part of the pre-requisite of the course and therefore, we would appreciate if the student is issued with a research permit to enable him collect data and write a report. Research project reflect integration of practice and demonstrate writing skills and publishing ability. It also demonstrates the learners' readiness to advance knowledge and practice in the world of business.

We hope to receive positive response so that the student can move to the field to collect data as soon as he gets the permit.

Yours Faithfully


Dr. Raphael O. Nvonje, PhD
SENIOR LECTURER & RESIDENT LECTURER
DEPARTMENT OF EXTRA-MURAL STUDIES
KISUMU CAMPUS



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MAURICE ODHIAMBO

One Life One Bank

JAMHURI YA KENYA

SERIAL NUMBER : 22421556

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