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An assessment of customer satisfaction with water and sewerage services: the case of Dodoma urban water supply and sewerage authority

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AN ASSESSMENT OF CUSTOMER SATISFACTION WITH
WATER AND SEWERAGE SERVICES: THE CASE OF DODOMA
URBAN WATER SUPPLY AND SEWERAGE AUTHORITY

Kunugula Ignas Lwitakubi

Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of
Master of Business Administration of the University of Dodoma

University of Dodoma

August, 2013

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by The University of Dodoma a dissertation entitled *An Assessment of Customer Satisfaction with Water and Sewerage services: The Case of Dodoma Urban Water Supply and Sewerage Authority* in partial fulfilment of the requirements for the degree of Master of Business Administration of the University of Dodoma.

.....

Dr. Damas K. Mbogoro

(SUPERVISOR)

Date.....

DECLARATION

AND

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I, Kunugula Ignas Lwitakubi, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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First and foremost, I would like to thank and glorify the almighty God. With God's blessing and love, this study was made possible. For him, he is always good. He has given me the strength, courage and power to conduct it and finally to prepare and produce this dissertation report.

I would like also to declare that I am indebted to my supervisor, Dr Damas Mbogoro for his supervision, encouragement and all the efforts he has put for making sure that this study was successful.

Abundant thanks go to Mr. Audax Mwangila (DUWASA's HR & Administration Manager), Mr. Godfrey Kilolelo (DUWASA's HRO) for accepting and offering me a research opportunity, in spite of their busy daily activities. Special thanks should also go to my family, for enduring and offering all the help I needed from them so as to fulfill this dissertation obligation.

The list is so big, but all in all, I do appreciate with profound gratitude all the support received from my fellow MBA students, lecturers and all who in one way or another have contributed to a successful end of this dissertation report. I do pray, wish you all the best and God's blessings in all your ways.

It should be noted that any shortcomings on this research are entirely belong to me.

DEDICATION

I humbly dedicate this work to my beloved first born son, David for his patience, cherish and love that acted as a spirit and encouragement towards accomplishment of this special and noble task.

ABSTRACT

The aim of this study was to assess customers satisfaction with water and sewerage services. The specific objectives of this study were to assess the measures implemented to achieve customer satisfaction, to assess the extent the measures have lead to customer satisfaction with DUWASA services as well as to assess, the challenges facing implementation of customer satisfaction measures.

A case study and cross sectional research design were the methods employed. DUWASA was the study area and 111 respondents participated in the study. Data were collected through questionnaires, interviews and focus group discussions.

The study has found out that controlling quality of water and sewerage services, ensuring billing accuracy, fair tariffs, customers services centre, toll free calls and 24 hours emergency services, education and communication as well as demand management were the measures implemented to achieve customer satisfaction. The contributions to performance found out were: improvement in revenue collection, strengthening willingness to pay, reporting sabotage, quick and full bill payments and strengthening loyalty. Challenges found were:unsatisfactory sewerage services, unreliable water supply and sewerage services, unfair tariffs, unsatisfactory billing and complaints handling, insufficient production, water leakage, unreliable and high power tariffs, poor bill payment and insufficient training.

It is recommended that an immediate DUWASA as well as government intervation is needed to counter act low investment, poor bill payment by government institutions, unreliable power and insufficient training and development programmes. This would strengthen the capacity of water supply and sewerage services authorities in Tanzania.

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LIST OF ABBREVIATIONS

CAG	-	Controller and Auditor General
DP's	-	Domestic point
DUWASA	-	Dodoma Urban Water Supply and Sewerage Authority
EWURA	-	Energy and Water Regulatory Authority
GIZ	-	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation, Ltd.)
HR	-	Human Resource
HRA	-	Human Resource and Administration
HRO	-	Human Resource Officer
MD	-	Managing Director
MKUKUTA	-	Mkakati wa Kukuza Uchumi na Kupunguza Umasikini Tanzania(National Strategy for Growth and Reduction of Poverty)
MoU	-	Memorandum of Understanding
PR	-	Public Relation
SPSS	-	Statistical Package for the Social Sciences, later modified to read Statistical Product and Service Solutions
UNICEF	-	United Nations International Children's Emergency Fund
UN	-	United Nations
UNDP	-	United Nations Development Program
WHO	-	World Health Organization
UWS	-	Urban Water Supply
UWSS	-	Urban Water Supply and Sanitation
WSS	-	Water Supply and Sanitation
WTP	-	Willingness To Pay

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter presents the road map of this study. It brings the general image of an assessment of customer satisfaction with water and sewerage services. It describes the background to the study, followed by Dodoma Urban Water Supply and Sewerage Authority (DUWASA) background, and finally the description of statement of the research problem. After which it presents the research objectives and the research questions. This chapter winds up with the significance of the study, describing how this study was important in knowledge generation, policy formulation and, managerial decision making, and finally how it will be important to the researcher.

1.2 Background to the Study

This section explain background information related to water services globally, Africa Sub-saharan region and Tanzania. It highlights water services provision in rural and urban areas of developing countries. It briefly explains water user's satisfaction and also provided a background information about Dodoma Urban Water Supply and Sewerage Authority (DUWASA).

1.2.1 Water and Sewerage Services Globally

According to the United Nations Development Program, access to and use of safe drinking water can make an immense contribution to health, productivity, and social development (UNDP 2006). Many people in developing countries continue to rely on unimproved water sources. Nearly one-sixth of the world's population obtains drinking water from unimproved sources, and in many developing areas, progress in expanding

clean water coverage is modest (Degnet et al, 2010). In Sub-Saharan Africa, for instance, the proportion of the population that depends on unimproved sources has declined only slightly, from 52 percent in 1990 to 44 percent in 2004 (UNDP 2006). As part of the Millennium Development Goals, the International community has set a goal of reducing the proportion of people without sustainable access to safe drinking water by 50 percent to 2015 compared to its level of 60 percent in 1990 (UN 2010).

While as expanding improved water infrastructure is necessary, that alone does not guarantee safety and adequacy of water to its users (Larson, Minten, and Razafindralambo 2006). Recent evidence from empirical research (for example, Vasquez et al, 2009; Kleemeier, 2000) indicates that improved water supply schemes in many developing countries are not functioning properly. In Sub-Saharan Africa, for instance, it is estimated that 35% of all rural water systems are not functioning (Baumann 2005). Vasquez et al, (2009), Deichmann and Lall (2007) cite drinking water safety and reliability as key problems even when the basic water delivery systems are in place. Harvey (2008) concludes that, in addition to increasing access through implementation of improved water supplies, it is also necessary to ensure that both new and existing water systems are sustainable, so that access to safe water is sustained for all.

1.2.2 Water and Sewerage Services in Tanzania

According to water sector status report of 2009, the Government of Tanzania has embarked on a major sector reform process since 2002. Among these reforms, were the establishment and development of urban and rural water supply which were adopted in 2006. Decentralizations has meant that responsibility for water and sanitation service provision has shifted to local government authorities. Water supply and management is carried out by 20 urban and about 100 district utilities, as well as by community owned water supply organizations in rural areas. Water services provision reforms have been

backed by a significant increase of the budget. In 2006, the water sector was included among the priority sectors of the National Strategy for Growth and Reduction of Poverty (MKUKUTA). However, the sector remains heavily dependent on external donors. About 88% of the available funds are provided by external donor organizations. Despite all these sectorial change, most of water services are poor. For example GIZ report notes that "despite heavy investments brought in by the World Bank and the European Union, (the utility serving Dar es Salaam) has remained one of the worst performing water entities in Tanzania. WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation report explained that, of the twenty Urban Water Supply (UWS) and Sanitation Authorities that operate in Tanzania, only three are able to provide continuous water supply (Arusha, Songea and Tanga). In eleven cities water can be supplied for at least 19 hours. In Babati and Mtwara for example water is supplied 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 of 9 hours per day (Water sector status report, 2009).

The water sector status report (2009) indicates that, water supply and sanitation in Tanzania is characterized by decreasing access to improved water sources (especially in urban areas), steady access to some form of sanitation (around 93% since the 1990s), intermittent water supply and generally low quality of service. Many utilities are barely able to cover their operation and maintenance costs through revenues due to low tariffs and poor efficiency. Caroline van den Berg et al, (2009) ascertain that, there is significant regional differences in provision of water and sewerage services in Tanzania by water supply and sewerage authorities.

Water quality varies significantly within the country. In the semi-arid regions (Dodoma, Singida, Tabora, Shinyanga, and Arusha), colour and turbidity levels become problematic during the rainy season. Rivers in the fluoride belt (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. The water quality of lake Victoria is poor characterized by high turbidity and nutrient levels that lead to frequent blooms of algae and infestations of water weeds (National Water Sector Development Strategy 2006 to 2015).

1.2.3 Water User's Satisfaction

Despite the importance of providing safe and reliable drinking water for poverty reduction and social development, relatively little is known regarding user's satisfaction with rural and urban drinking water services in developing countries, particularly in Sub-Saharan Africa. Investigating user's evaluation of these services is increasingly seen as an important means for improving the performance of public services (Deichmann and Lall, 2007).

1.3 Background of Dodoma Urban Water Supply and Sewerage Authority

Dodoma Urban Water Supply and Sewerage Authority("the Authority") is an autonomous institution. It is charged with the overall responsibility of operations and management of water supply and sanitation services in Dodoma urban within the Municipality. The activities of the authority are carried out under the terms and conditions of the Memorandum of Understanding(MoU) between Dodoma Water Supply and

Sewerage Authority and the Government of the Republic of Tanzania represented by the Ministry of Water. DUWASA operates as per Waterworks Act, Rules, and Regulations, Operation Guideline and the Memorandum of Understanding. The MoU signed between the Authority and the Ministry of Water and Irrigation forms the basis for the monitoring and regulations, where as the operations Guideline have been prepared to guide the authority on the framework on which to operate. The operation guideline form part of MoU and is signed after every three years (CAG report 2012).

1.3.1 Establishment

DUWASA was established under section 3(I) of Cap. 272 of 1997 as repealed by section 60 of Act No. 12 of 2009. It was declared a fully autonomous entity by order of the Minister responsible for water sector on 13th February, 1998; and was officially inaugurated on 1st July, 1998.

1.3.1.1 Vision

To be the most efficient Authority in providing clean, safe, potable water supply and sewerage disposal services in a sustainable and environmentally safe manner.

1.3.1.2 Mission

To provide high quality and efficient water supply and sewerage disposal services to its customers within Dodoma urban in the most cost-effective manner; and to maintain a high motivated, qualified, competent, committed and diligent workforce, while applying appropriate technologies that are environmentally friendly.

1.3.2 Roles and Functions

As prescribed under section 20 of Water Supply and Sanitation Act, principal functions and roles of DUWASA include: to provide water supply for use as required by the Act or any other written law dealing with the management of water resources, water quality

standards and the environment, to secure the continued supply of water, to develop and maintain water and sanitation works, to protect and maintain water resources, to advice the government in water related matters, to execute projects for the supply of water and the provision of sanitation, to educate and provide information on public health aspects of water supply and to liaise with local government authorities on water supply and sanitation matters, to collect fees and levies for water supply and sanitation services supplied to consumers, to propose water supply and sanitation tariffs and to enter into any transaction which facilitate the proper exercise of the functions of the water authority under the water Act.

1.3.3 Corporate Governance and Management

The Authority is governed by a ten members Board of Directors nominated from various representative groups of society. The board takes overall responsibility, including effective and efficient implementation of various activities, monitoring operations and investment decisions, considering significant financial matters, and reviewing the performance of management plans and budgets. The daily activities of the Authority are delegated to the Managing Director(MD). MD is assisted by three functional managers namely Technical Manager, Commercial Manager and Finance Manager. There are also five supportive units in the organization structure responsible directly to MD, namely Public Relation Unit, Human Resource and Administration Unit, Procurement Management Unit, Internal Audit Unit and the Legal Unit. Refer to Figure 1 below.

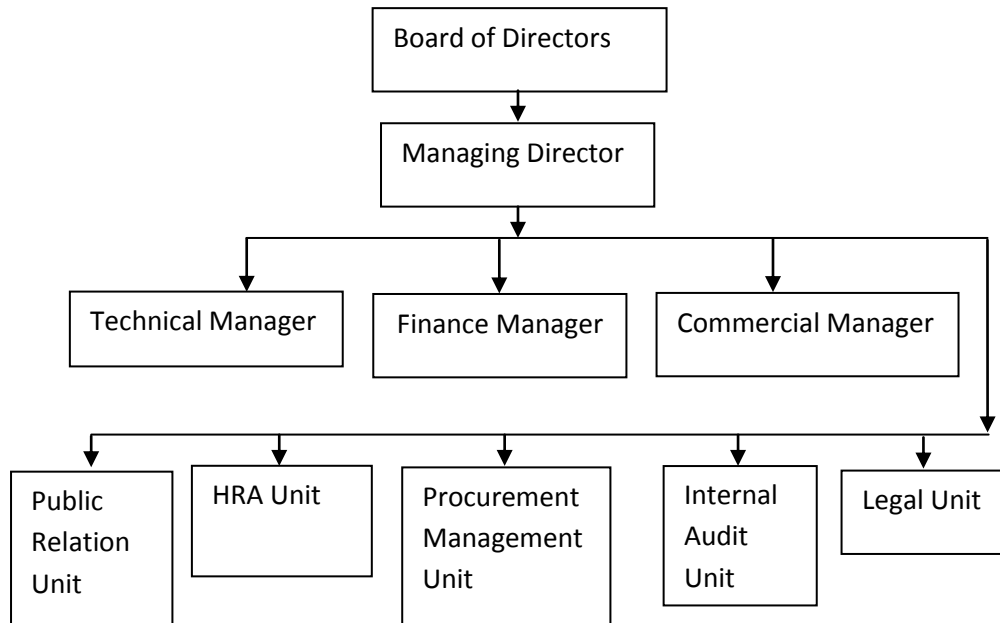


Figure 1:DUWASA Organization Structure

Source:Field data, 2013

1.4 Statement of the Research Problem

Budds and McGranahan (2003) explain that, public water and sewerage utilities unsatisfactory services provision is partly attributed to the public sector's lack of fund. Financial resources are necessary for running day to day activities, carrying out improvement and expansion of service. However the contribution of customer satisfaction on strengthening water and sewerage services, solving lack of fund for water and sewerage authorities in Tanzania is not known. The measures put in place for achieving customer satisfaction with water and sewerage services authorities are little known. The contribution of these measure to achieve customer satisfaction and to the performance of these organizations is less known. For example the contribution of customers satisfaction in solving uncollected revenue is unknown. A notable example indicating such a problem at DUWASA is demonstrated by appendix four. Mugisha (2011) argues that most water policies in developing countries do not have direct emphasises on customer accountability. It is very surprising that urban Water Supply and

Sanitation (WSS) utilities which primarily created to service customers, do not value customer voice up to the expected level (Mugisha, 2011). With this regard, this study seeks to assess customers satisfaction with water and sewerage services. To understand the measures put in place for satisfying customers with water and sewerage services. To understand the challenges facing water and sewerage authorities to the satisfaction of its customers. The contribution of the measures implemented for customer satisfaction is also a problem that need to be assessed. To shed light on service factors that bring about customer satisfaction and the extent at which customer satisfaction can help on strengthening short term and long term financial need of the water and sewerage authorities in Tanzania. More important, to undestand the challenges facing implementation of measures to achieve customer satisfaction. This study has aimed in assessing the measures being implemented to achieve customer satisfaction. This study also intended to assess the contribution of customer satisfaction measures towards the authority's performance. At last, this study seeked to assess the challenges facing the implementation of measures to achieve customer satisfaction with water and sewerage authority.

1.5 Research Objective

The main objective of this study was to assess customer satisfactions with water and sewerage services: the case of DUWASA.

1.5.1 Specific Objectives

The following were the specific objectives of this study:

1. To assess measures implemented to achieve customer satisfactions at DUWASA.
2. To assess the contribution of the measures implemented for customer satisfactions.
3. To assess challenges facing implementation of measures to achieve customer satisfactions.

1.6 Research Questions

1. What measures are being implemented to achieve customer satisfactions?
2. To what extent have the measures contributed to the performance of DUWASA?
3. What are the challenges facing implementation of customer satisfaction measures?

1.7 Significance of the Study

The study of an assessment of customer satisfaction with water and sewerage services has a number of contributions in various aspects. These aspects include but not limited to the following areas: Knowledge and Policy contribution, Managerial decision making as well as Personal benefits. The outcome of this study has added a fresh knowledge to the literature of business, especially in understanding service factors that are important for satisfying customers with water and sewerage services. The results of this study might be used academically and by organizations in utility services provision for improving customer's satisfaction. Understanding the challenges that face implementation of measures to achieve customer satisfaction helps managers in water and sewerage authorities. It helps to lay down strategies for counter acting these challenges, reviewing services offering strategies and focus on new better way of improving services.

Policy makers in the government can take advantage of these findings to formulate policies that improve the general welfare of urban water supply and sewerage authorities.

This study helps in knowing in monetary term the value of customer satisfaction to the organization. It can be an input in planning for the liquidity of the firm and also for long term organizational sustainability.

Finally the study was personally significant. It has offered new personal skill in dealing with customer satisfaction matters. Personal possession of such skills is a vital competitive tool to the individual and organization.

1.8 Scope of the study

The aim of this study was to assess customer's satisfaction with water and sewerage services: for the case DUWASA. The study was limited on assessing the above mentioned theme from DUWASA staff and its connected customers. Customer respondents were from Dodoma central division of the Dodoma central district. The reason for this was being scarcity of time and financial resources to cover the whole Dodoma municipality area. Therefore the sample from customers group was those with water and sewerage connections.

1.9 Conclusion

This chapter has presented the background of water provision in globally as well as in Tanzania. It was followed by the DUWASA background. In the reseach problem statement, it has shown that, there was a lack of knowledge with respect to customer's satisfaction with water and sewerage services. It has presented the research objectives and their corresponding research questions. It winds up with the significance of this study as well as the scope of this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the existing literature on an assessment of customer satisfaction with water and sewerage services. It explains the various concepts and theories underlying this study. Further it explains the theories underlying these concepts and their interrelationships. Later on it presents the empirical studies on customer satisfaction with water and sewerage services. Finally the chapter winds up with conceptual framework that guides this study.

2.2 Customers

Reizenstein (2004) describes the term as a word that is normally used interchangeably with terms like; client, buyer, or purchaser. He defines “customer” as the recipient of a good, service, product, or an idea, obtained from a seller, a vendor, supplier for a monetary or other valuable consideration.

Reizenstein (2004) and Frain (1999) categorize customers into two types. The first group includes intermediate customer or trade customer. An intermediate customer is a dealer that purchases goods for re-sale. The second group includes an ultimate customer who does not in turn re-sell the things bought but either passes them to the consumer or actually is the consumer.

Kansal and Rao (2006) indicate that a customer may or may not be a consumer. A customer purchases goods whereas a consumer uses them. An ultimate customer may be a consumer as well, but just as equally may have purchased items for someone else to consume (Blythe, 2008).

Generally, the term customer can be defined differently elsewhere. But in the context of this study, “**Customer**” refers to a purchaser of water and other services from DUWASA, who uses water for municipal purposes including residential, industrial, commercial or government uses.

2.2.1 Customer Services

Tennant (2001) categorizes customer services into two classes. The first class being external customer of an organization. That is a customer who is not directly connected to that organization. The second class being an internal customer. That is a customer who is directly connected to an organization, and is usually (but not necessarily) internal to the organization. Internal customers are usually stakeholders, employees, or shareholders, but the definition also encompasses creditors and external regulators.

Papasolomou-Doukakis (2001) argues that, the customer satisfaction of internal customers is nowadays recognized by many organizations as a prerequisite for, external customer satisfaction. The argument by Papasolomou-Doukakis (2001) is supported by authors such as Tansuhaj, Randall and McCullough (1991), arguing that service organizations that design products for internal customer satisfaction are better able to satisfy the needs of external customers.

2.3 Customer satisfaction

Gitman and Carl (2005) describes customer satisfaction as a key performance indicator within business. They argue that, in a competitive marketplace where businesses compete for customers, customer satisfaction is a key differentiator and a key element of business strategy. Fornell et al, (1996) provides three aspects which are; (1) Customization is more important than reliability in determining customer satisfaction, (2) Customer expectation play a greater role in sector in which variance in production and consumption

is relatively and (3) Customer satisfaction is more quality driven than value driven or price driven.

2.3.1 Diversity in Satisfaction definitions

The term refer to a number of different facts of the relationship with a customer. For example, it can refer to any of the following; Satisfaction with the quality of a particular product or service, Satisfaction with the price-performance ratio of a product or service and Satisfaction because a product or service met or exceeded the customer's expectations.

Deichmann and Lall (2007) defines Customer satisfaction as the state of mind that customers have about a company when their expectations have been met or exceeded over the lifetime of the product or service.

In short, satisfaction is an internal frame of mind, it is tied only to mental interpretations of performance levels (Oliver, 2010).

2.3.2 Customer Satisfaction with the Context of this Study

With regard to the context of this study, customer satisfaction is a state of mind in which the customer's needs, wants, and expectations throughout the service life have been met or exceeded, resulting in future repurchase and loyalty.

2.3.3 Significance of Customer Satisfaction

Paul and Nick (2013) explain that, companies should try to satisfy their customers. Satisfied customers usually return and buy more, they tell other people about their experiences, and they may well pay a premium for the privilege of doing business with a supplier they trust. Statistics bandied around suggest that the cost of keeping a customer

is only one tenth of winning a new one. A model and other benefit of satisfied loyal customer are as shown in Figure 2 below.

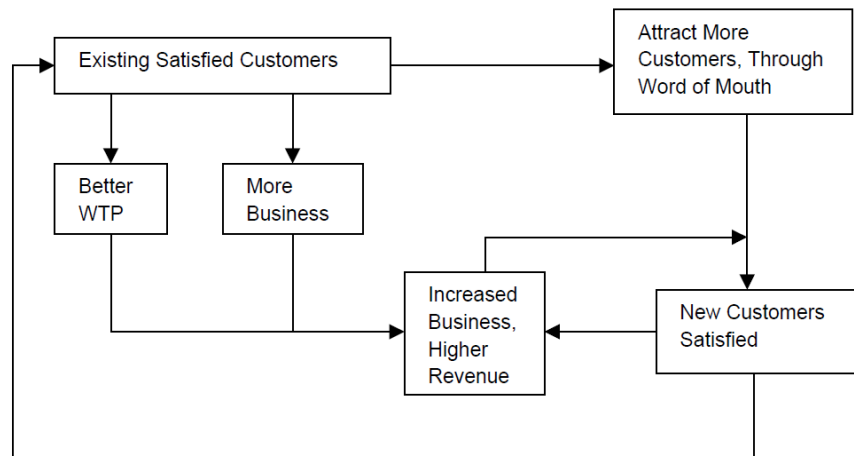


Figure 2: Importance of Customer Satisfaction

Source: Coates et al, (2001)

2.3.4 Strategy for Achieving Customer Satisfaction

Bambang (2009) suggests seven strategy to increase customer satisfaction and loyalty, which are: Responding quickly or at least within a reasonable time frame; Asking how clients would like to be responded to; Creating a positive website experience with an attractive layout; Personalize and customize everything connected with an internet consumer; Thinking from the customer's point of view; Educating clients; Conducting surveys and tracking results, for finding out what clients like or dislike about services offered.

2.3.5 Customer Satisfaction in Water and Sewerage Authorities

Capetown water services development plan (2001) provides areas, where commitment can be put forward for ensuring water and sewerage customer's satisfaction. These areas are: meter Accuracy, meter reading and billing, all time emergency services and call center,

customer education, communication and liaison, efficient and effective call center as well as water and sewerage bylaws.

2.3.6 Customers Satisfaction and Organizational Profitability

Customer satisfaction is a key performance indicator within business and in a competitive market place where businesses compete for customers (Pe Gitman, 2005). Customer satisfaction is related to customer loyalty, which in turn is related to profitability (Heskett et al, 1994). Heskett et al, (1994) provides a theory of the service profit chain which hypothesizes that: Customer satisfaction --> customer loyalty --> profitability. It illustrates that, customer satisfaction, customer loyalty, and profitability are related and linked to one another.

2.3.6.1 Customer Satisfaction and Business Strategy

Creating customer satisfaction is a defensive strategy and the behavioral objective for defense is customer loyalty (Fornell, 1992). To retain customer, switching barrier and customer satisfaction are the two basic forms which need to be fulfilled. Switching barriers make it costly for customer to switch to competitors and customer satisfaction makes it costly for competitor to take away another firm's customer. Fornell (1992) claims that high customer satisfaction reduces the competition in terms of price promotion whereas switching barrier greatly involves in price promotion. James and Sasser (1995) agrees that a customer who has the intention to repurchase and recommend is very likely to remain with the company. For a customer to remain loyal he or she must believe that the firm's service continues to serve the best choice alternative and he/she will be less sensitive to the price of the service offered by other competitors.

2.3.7. Satisfaction Measurement

According to Paul and Nick (2013) customers express their satisfaction in many ways. When they are satisfied, they mostly say nothing but return again and again to buy or use more. When asked how they feel about a company or its products in open-ended questioning they respond with anecdotes and may use terminology such as delighted, extremely satisfied, very dissatisfied and so on. Collecting the motleys variety of adjectives together from open ended responses would be problematical in a large survey. To overcome this problem market researchers ask people to describe a company using verbal or numeric scales with words that measures attitudes. People are used to the concept of rating things with numerical scores and these can work well in surveys. Once the respondent has been given the anchors of the scale, they can readily give a number to express their level of satisfaction. Typically, scales of 5, 7 or 10 are used where the lowest figure indicates extreme dissatisfaction and the highest shows extreme satisfaction. The stem of the scale is usually quite short since a scale of up to 100 would prove too demanding for rating the dozens of specific issues that are often on the questionnaire.

2.3.7.1 What should be measured?

Paul and Nick (2013), ascertain that, in customer satisfaction research we seek the views of respondents on a variety of issues that will show how the company is performing and how it can improve. What do they consider important? These factors or attributes will differ from company to company and there could be a long list. They could include for example the following attributes shown in Table 1 below.

Table 1:Customer Satisfaction Attributes

The product	Quality of the product, Length of life of the product, Design of the product, Range of products and Processibility of the product.
Delivery	Delivery on time and Speed of delivery.
Staff and services	Courtesy from sales staff, Representative's availability and knowledge, Friendliness of the sales staff, Complaint resolution, Responsiveness to enquiries, After sales service, Technical service.
Company	Reputation of the company, Invoice clarity and Invoices on time.
Price	Market price, Total cost of use, Value for money.

Source: Paul and Nick (2013)

2.3.7.2 Traditional Customer Satisfaction Analysis

Oliver (2010) ascertain that much of satisfaction research is conducted to the following format; A list of key product or services features is generated which it is hoped, contain exhaustive set of factors thought to cause satisfaction and dissatisfaction. In a fairly direct manner, consumer are asked to rate the importance of these features and to retrospectively rate the product or services on the degree to which each of the features was delivered. At the same time the consumer may be asked to rate the product on an overall basis. This overall score is used to represent the consumers' mental summary state of experience with the product or services.

2.3.7.3 Shortfalls of the Traditional Customer Satisfaction Analysis

An assumption of this technique is that, those features which are mostly aligned with the overall score across consumers are those that have greatest impact on satisfaction. But the list of features can not be exhaustive for all consumers. This problem can be addressed by using the proper level features abstraction when the attribute list is prepared. Another problem being the relevance of features at different stages of decision making. However, if the research goal is an understanding of consumer satisfaction, then importance in

product choice is an inappropriate context; rather, the concern should be on importance in delivering satisfaction. Oliver (2010) ascertain that, if the research is interested in predicting satisfaction, then the feature measures should relate to satisfying and dissatisfying properties of products or services.

2.3.8 Satisfaction Scale

John (2003) ascertains that, based on a five-point scale, individuals who rate their satisfaction level as '5' are likely to become return customers and might even evangelize for the firm. He further argues that, a second important metric related to satisfaction is willingness to recommend. He defines this metric as "The percentage of surveyed customers who indicate that they would recommend a brand to friends." This can be a powerful marketing advantage. Individuals who rate their satisfaction level as '1' by contrast, are unlikely to return. They can hurt the firm by making negative comments about it to prospective customers. Willingness to recommend is a key metric relating to customer satisfaction (Farris et al, 2010).

2.3.9 Degree of Satisfaction

Water and sewerage user's degree of satisfaction can strictly be measured by Likert scale (Sullivan, 2002). For example service factor such as hours of provision, quantity, tap pressures, and quality of water can simply be measured in a five-point Likert scale, including points for not at all satisfied, not satisfied, partially satisfied, satisfied, and highly satisfied. This composite index approach is simple and straightforward format that is widely used in planning and evaluation studies such as the human-development index and the rating index (Sullivan, 2002).

2.3.10 Customer Loyalty

Newman and Werbel (1973) describes loyal customer as those who repurchase a brand considering only that brand or services and do not brand related information seeking.

2.4 Customer Dissatisfaction

Customer dissatisfaction can be defines as an expression of dissatisfaction with a product or service, either orally or in writing, from an internal or external customer. A customer may have a genuine cause for complaint, although some complaints may be made as a result of a misunderstanding or an unreasonable expectation of a service.

2.5 Organizational Performance

Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (Richard et al, 2009). According to Richard et al, (2009) organizational performance encompasses three specific areas of firm outcomes: Financial performance (profits, return on assets, return on investment, etc.); Product market performance (sales, market share, etc.); and Shareholder return (total shareholder return, economic value added, etc).

2.6 Revenue

Revenue is defined in business as income that a company receives from its normal business activities, usually from the sale of goods and services to customers (Williams et al, 2008). Profits or net income imply total revenue minus total expenses in a given period. For non-profit organizations, annual revenue may be referred to as gross receipts. This revenue includes donations from individuals and corporations, support from government agencies, income from activities related to the organization's mission, fund

raising activities, membership dues, and financial investments such as stock shares in companies (Williams et al, 2008). In general usage, revenue is income received by an organization in the form of cash or cash equivalents. Sales revenue is income received from selling goods or services over a period of time.

2.6.1 Financial stability

Financial stability and growth are typically monitored by three measures which are: Net income, that implies the surplus of revenue over expenses; Liquidity, that implies the ability to meet cash requirements to pay bills and Solvency, that implies the relationship between assets and debt or liabilities (Epstein, 2007).

2.7 Empirical Studies on Customer Satisfaction

A number of studies have been conducted in the area of customer satisfaction. Much of these studies have directed its efforts on internal customer satisfaction. The studies of Abdalla (2010), Balinga(2010), and Chiteji (2011) were aimed in understanding the effect of employee satisfaction and its impact on organizational performance. These studies concluded that motivation schemes such as training and improved salaries enhanced employee's satisfaction and in return organizational performance were also improved. The study of Anderson and Sullivan (1993), Andreassen and Lindestad (1998), Lin and Wang (2006) concluded that customer satisfaction is one of the major determinants of customer loyalty. Julian and Ramaseshan (1994) have shown that, customer satisfaction and perceptions of service quality are decisive elements of customer loyalty which potentially brings about higher market shares, lowers staff turnover and operating costs, improves employee morale, higher financial performance and profitability. Studies in the banking sector have found that bank profitability was derived from the quality of service (Anderson and Srinivasan, 2003). That is higher quality leads to satisfied customers who use more of the services and the ability of customer retention becomes higher. Recent

research (Chiou, 2004) has found that perceived trust directly and positively influences customer satisfaction and customer loyalty. This aspect was strengthened by Lin and Wang (2006), whose study concluded that trusting beliefs could lead to customer satisfaction, which, in turn, influences customer loyalty. Corporate image and Brand image also positively affects customer loyalty and customer satisfaction (Andreassen and Lindestad, 1998). Kayaga, Culvert and Sanson (2003) study carried out in 11 major towns of Uganda to establish which household characteristics influence payment for water services. Using a questionnaire to collect data on customer satisfaction, customer loyalty and several socio-economic variables. Established that attributes of the household head moderated the satisfaction and loyalty relationship: gender, occupation, level of education, household income and property tenure status. In their study, they concluded that those variables could be used to make water utilities customer-focused. This study was built upon these findings, and directed itself in assessing customer satisfaction with water and sewerage services.

2.8 Conceptual Framework

Diagrammatically, the Conceptual Framework used in this study is as shown in Figure 3 below. The Conceptual framework for this study was based on the argument that, there were service factors that led to customer satisfaction. Service factors might include for example quality water services, quality of sewerage services, affordable services, billing accuracy, Easiness of bill Payment etc.

Secondly, the Conceptual Framework of this study was based on the argument that, there were intermediate variables between independent and dependent variable which influence customer's satisfaction. These variables are the profile of both respondents i.e DUWASA workers and customers. These variables were such as sex, education level, experience of

DUWASA workers, customer's times of using DUWASA services, staff position and customers occupation.

Thirdly, the measures implemented for achieving customer satisfaction ultimately result in customer's satisfaction. The customers then might contribute positively towards the organization's performance i.e towards DUWASA performance. These positive contributions might be for example an increased bill payments and in turn an adequate revenue collection.

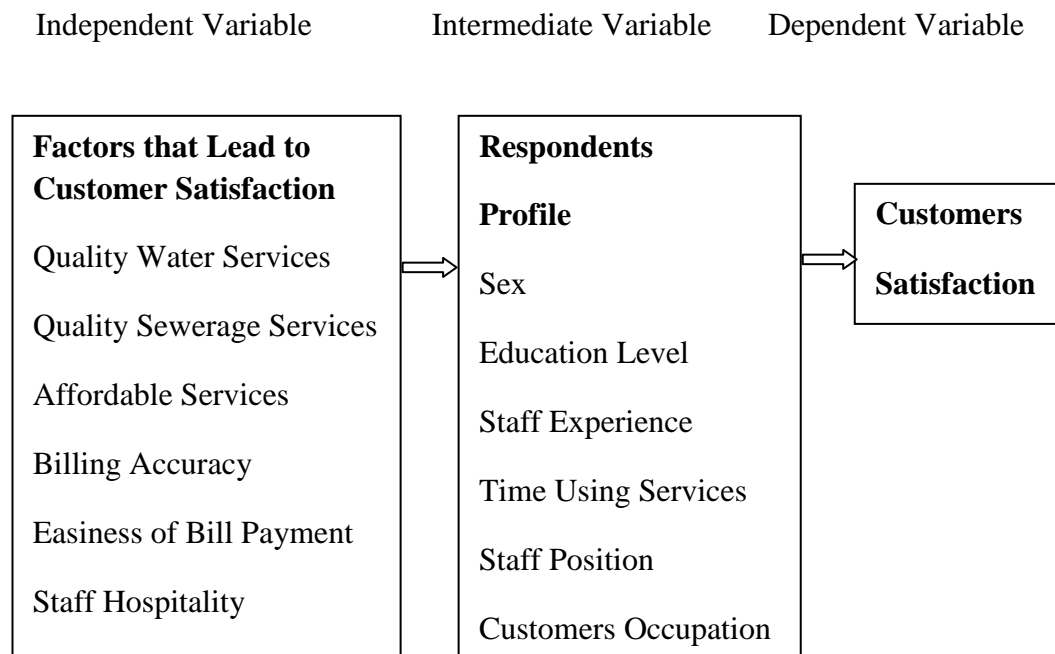


Figure 3: Conceptual Framework

2.9 Conclusion

This chapter has presented the existing literature based on the key concepts of this study. It has discussed selected empirical studies on customer satisfaction, and its contribution towards organization's performance. The results and findings of these empirical studies have shown that customer satisfaction could increase product or services loyalty or customer retention in products based companies and organizations. However none of these

studies have assessed the the measures implemented to achieve customer satisfactions with water and sewerage services. These previous studies had neither discussed adequately the contribution of customer satisfactions, nor the challenges which faced the implementation of measures to achieve customer satisfactions, and its impact on water and sewerage services organization's performance. Finally the chapter winds up with the conceptual framework which have shown the relationship of the variables involved in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is about the methodological technics that were used in this study. It begins by presenting area for this study, followed by the presentation of the research design. Later on, it presents the research sample and the sampling criteria used to identify the participants of the study. There after, the chapter presents the data collection procedure and data collecton methods. This chapter winds up with a section on validity and reliability.

3.2 Area of Study

The area of this study was DUWASA. Bell (1999) argues that a case study approach is particularly appropriate for individual researchers, because it gives an opportunity for one aspect of a problem to be studied in some depth, within a limited time scale. Thus, the reason for this choice was that, DUWASA was a typical place where one could assess customers satisfaction with water and sewerage services. DUWASA is a stand alone organization in its business activities. It has no direct competition from other companies offering water and sewerage servicess in Dodoma. With such monopolitic nature of the services offered, some important questions imaged: Is DUWASA still need to satisfy its customer? and if there was customers satisfaction, what are the contribution of these satisfactions to the performance DUWASA? Therefore DUWASA was a typical and relevant example for studying customers satisfaction with water and sewerage services. It represented such similar urban water supply and sewerage services authorities in Tanzania.

3.3 Research Design

This study was based on mixed approach research design. This approach made the use of quantitative and qualitative techniques in data collection and analysis.

Mixed method research design mean, the purposeful application of a multiple person, multiple perspective approach to questions of research and evaluation (Greene, 2006). On other occasions, different methods are used for different parts of the issues being investigated, and in an independent way (Mertens, 2003). In this study, Qualitative approach focused on; personal accounts (DUWASA staffs and customers), behavioral and learning observations (in customer services unit at DUWASA) as well as opinions of individual's insights on factors that influenced customer satisfaction with water and sewerage services. Quantitative approach focused on numerical findings that were obtained from secondary data and within the research process.

3.4 Sampling Techniques and Sample size

This section explains the techniques that was used to collect data and the sample size in this study.

3.4.1 Sampling Frame

In this study, targeted population comprised of the following: The DUWASA Managing Director, Finance Manager, Commercial Manager, Head of Public Relation and Head of Human Resource and Administration units. Relevant staffs from different departments and customers who got services from DUWASA. DUWASA customers includes: Domestic, institution, commercial, industry and domestic point (DP's). All these customers were from Dodoma Municipality in central division.

3.4.2 Sampling Technique

The following techniques were used in this study: purposive sampling, simple random sampling and cluster sampling. The application of these techniques were as explained below.

(a) Purposive Sampling Technique

Purposive sampling technique was used to select respondents from the management and other members of staff. This was aimed at ensuring that key research questions were answered by relevant respondents. To fulfill the objectives of this study, the following respondents were involved: Managing Director, Operations Engineer, Assistant Commercial Manager, Acting Finance manager and heads of units and staff members.

(b) Simple Random Sampling

In simple random sampling a sample is chosen from a larger set (a population). Each individual is chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process (Yates et al, 2008). Simple random sampling is a basic type of sampling, since it can be a component of other more complex sampling methods. The principle of simple random sampling is that every object has the same possibility to be chosen.

Respondents from customers group were selected using simple random sampling as a component of cluster sampling. This was done so as to give equal chance of representation of customers from various parts of Dodoma central division.

(c) Cluster Sampling Technique

In cluster sampling the total population is divided into small groups (clusters) and a simple random sample of the groups is selected (Ahmed, 2009). For the purpose of this

study, the researcher regarded the wards as clusters and samples were chosen randomly from those wards. Table 2 below represents the wards with their respective sample size where respondent were choosen randomly.

Table 2: Wards and Corresponding Sample Size

S/No	Ward Name	Sample Size
1	Kizota	13
2	Viwandani	5
3	Madukani	3
4	Kilimani	4
5	Tambukareli	6
6	Hazina	3
7	Makulu	4
8	Kikuyu	6
9	K/ndege	4
10	Makole	8
11	Chamwino	7
12	Miyuji	9
13	Ipagala	6
Total		78

Source:Field data, 2013

3.4.3 Sample Size

The study planned to have a total sample size of 78 customers and 36 DUWASA management and other members of staff. The researcher managed to reach all 78 (100%) respondents from customers group of wchich 39(50%) were men and 39(50%) women. From DUWASA management and staff, the researcher managed to reach to only 33(91.67%) respondents. Table 3 below summarizes the distribution of respondents in this study.

Table 3: Distribution of Respondents

Respondents	Male	Female	Total	Target	Percent(%)
Employee	17	16	33	36	91.67
Customers	39	39	78	78	100.00

Source: Field data, 2013

3.5 Data Collection Procedure

Before data collection, the questionnaire and data collection forms were translated into swahili. This was simply because Swahili is a common language used by all most all Tanzanians and most of the respondents in this study were fluent in it. Other questionnaires and forms were left untranslated for non Swahili speakers.

3.6 Data Collection Techniques and Tools

Data collection methods used in this study were interviews, focus group discussions and documentary reviews. The later was used for secondary data gathering. Interviews, semi structured interviews using questionnaires and focus group discussions were used to collect primary data from DUWASA management and other members of staff. Another method were observations of complaints lodging and complaints handling at the DUWASA customers service centre.

3.6.1 Primary Data Source

Primary data source was mainly from DUWASA employees and customers. Hand to hand questionnaire was either preceded by a careful face to face conversations or a simple conversation followed by a face to face questionnaire. By this way the reseacher was able to obtain informations even though not covered in the questionnaire. The technique was also used for clarifying sentences or parts of the questionnaire that seemed difficult to the respondents to grasp. A face- to- face survey delivery mode could offer many advantage over mail and telephone surveys. This is in terms of complexity and quality of data

collected. However these advantage come with increased costs as well as potential sources of response bias (James, 2011). Therefore respondents who asked for filling in the questionnaires at there own time and place were allowed. This was so to avoid exerting pressure and biasness to the respondents. The aims of the questionnaires and conversations were to collect general and specific information in line with an assessment of customers satisfactions with water and sewerage services.

3.6.2 Secondary Data Source

Secondary data were collected by documentary review. This included internet surfing, reviewing relevant DUWASA reports and publication(such as Client Services Charter), reviewing publication from DUWASA parent ministry, journals and other relevant materials related to the topic understudy.

3.6.3 Data collection Tools

The tools that were used in this study include, questionnaires and data collection forms. The data collection forms were given to the DUWASA management as per questions in the questionnaires, as well as to the DUWASA customers for expressing their additional opinions on how they were serviced by DUWASA .

3.7 Data and Analysis and Presentation

This study adopted a mixed research design as discussed previously. Data generated in this study were both quantitative and qualitative data. Data processing, analysis and presentaton were as explained below.

3.7.1 Data Processing

Data obtained were checked carefully for determinations of errors and omissions. Incomplete and unreliable information were corrected accordingly, edited or removed. It was followed by data coding and entering it in a prepared SPSS computer application

program. To simplify application of SPSS, field data gathered were quality checked on daily bases. This was done just after collecting them from respective respondents. By so doing, data entry and processing were made simple, accurate and reliable.

3.7.2 Data Analysis

Data analysis followed after coding, editing and data entry. Quantitative data analysis were aided by the SPSS computer application program version 15.0 for windows. The analysis exercises were conducted as per this study's objectives.

3.7.3 Data Presentation

The analysed data have been presented in the form of tables and figures to convey simple and meaningful information and interpretation to readers.

3.8 Credibility of Research Findings

According to Ame (2011), credibility has something to do with the extent to which research results are reliable and valid.

3.8.1 Validity

Validity is concerned with whether the findings are really about what they appear to be about. Validity ensures that, the instrument used in the study measures what it is intended to measure. To address the validity in this study: communication and clarification of issues to respondents were done carefully to avoid misinterpretation, preconception, that led to subject biasness, observer error and biasness. Other measures included were: pilot testing the questionnaires that were used; taking large sample and planning and using interview guide. Other forms of errors that were likely to render the invalidity of findings were observed and dealt with accordingly.

3.8.2 Reliability

Reliability is concerned with whether the measures used in a research will yield the same results in different occasions, or if it can prove similar observations if done by different researchers on different occasions. A number of factors can affect reliability over time such as a person's mood, time of the day, where the questions are placed in the survey, circumstantial events, vagueness and so on. To ensure that this study had reliable results, the questions were set properly, the mood of respondent were pre-observed carefully and the data collection avoided high concentration days such as Monday, Friday and days which falls before or after holiday.

3.9 Conclusion

This chapter has presented the research design of this study. Due to the nature of the topic and convenience, DUWASA had been selected as a case study for the purpose of this study. The sample size, data collection procedures, data collection methods, tools and data analysis techniques have been discussed. Credibility of the research findings for this

study has been also discussed in this chapter. Finally, the chapter winds up by discussing how data have been presented in this study.

CHAPTER FOUR

PRESENTATION AND DISCUSION OF RESULTS

4.1 Introduction

This chapter presents the findings of the study on the assessment of customer satisfaction with water and sewerage services. It presents both primary and secondary data. The primary data were collected from DUWASA management and members of staff. The other source of primary data were DUWASA customers. The secondary data were from DUWASA publications, reports and other sources such as the internet. The study was geared to assess customer's satisfaction with water and sewerage services for a case of DUWASA. The analysis has been guided by three research questions, which are:

1. What measures are being implemented to achieve customer satisfactions?
2. To what extent have the measures led to customer satisfactions with DUWASA services?
3. What are the challenges facing implementation of customer satisfaction measures?

4.2 Profile of Respondents

This section describes the profile of respondents who participated in this study. Respondents in this study are divided in two groups. In the first group were DUWASA workers and second group DUWASA customers. Therefore, this section explains the characteristic of these respondents. The characteristics described here include: sex, education level, experience of DUWASA staff members and experience of customers in utilizing DUWASA's services. Other characteristics include staff position in DUWASA and customer's occupation.

4.2.1(a) Sex of DUWASA Workers

Table 4 below shows the demographic characteristics of DUWASA workers in particular sex. The findings show that 17(51.52%) of respondents were males and 16(48.48%) were females. To avoid gender bias the researcher intended to have equal representation of both men and women. However, the researcher was able to meet with 16 female respondents and 17 male respondents.

Table 4: Sex of DUWASA Respondents

Sex	Frequency	Percentage(%)
Male	17	51.52
Female	16	48.48

Source: Field data, 2013

4.2.1(b) Sex of DUWASA Customers

The findings in Table 5 below show that 39 (50.00%) of respondents were male and 39(50.00%) were females. Kayaga, Calvert, and Sansom, (2003) in their study, which was carried out in 11 major towns in Uganda to establish the household characteristics that influenced payment for water services. They found out that among other characteristics such as occupation, level of education and gender contributed to loyalty and customer's satisfactions.

Table 5: Sex of Customers Respondents

sex	Frequency	Percentage(%)
Male	39	50.00
Female	Female39	50.00

Source: Field data, 2013

4.2.2(a) Education Level of DUWASA Workers

The results in Table 6 below indicate that majority of DUWASA workers sampled were graduate 69.70 % (23); Diploma 9.09 % (3); and certificate at 21.21 % (7). These results

clearly indicated that DUWASA respondents had an adequate education to participate in this study.

Table 6: Education Level of DUWASA Workers

Education Level	Frequency	Percentage(%)
University	23	69.70
Diploma	3	9.09
Certificate	7	21.21

Source: Field data, 2013

4.2.2(b) Education Level of Customers

As indicated in Table 7 below, the results show that the sampled DUWASA customers had enough and adequate education to participate in this study. Where by 30.80 % (24) had University education, 17.90 (14) had Diploma education, 12.80 % (10) had certificate level education, 23.10 % (18) had secondary education and 15.4 % (2) had a primary education. Therefore, respondents from the customer group had an adequate level of education to participate, and respond with a great awareness of the services provided and how were served by DUWASA.

Table 7: Education Level of Customers

Education Level	Frequency	Percentage(%)
University	24	30.8
Diploma	14	17.9
Certificate	10	12.8
Secondary	18	23.1
Primary	12	15.4

Source: Field data, 2013

4.2.3 (a) Experience of DUWASA Workers

The respondents from DUWASA management team and members of staff had the following service experience: 54.55 % (18) had 1-5 years experience, 30.30 %, (10) had 6-10 years and 15.15 % (5) had 11 and above years experience. These results indicated a normal situation was expected to an organization, where the number of employees with high experience became smaller as time goes on. All respondents in this group participated and shared their experience in line with this study's objectives were good irrespective of their differences in working experience. More details are in Table 8 below.

Table 8: Staff Work Experience

Work Experience	Frequency	Percentage(%)
1-5 years	18	54.55
6-10 years	10	30.30
11 and above	5	15.15

Source: Field data, 2013

4.2.3 (b) Experience of DUWASA Customers

The researcher wanted to know the time DUWASA customers had with the organization. Findings in Table 9 below show that 34.61 % (27) respondents in the customer group had an average of 1 to 5 years experience of using DUWASA services, 25.64 % (20) had 6 to 10 years experience and 39.75% (31) had an average of more than 11 and above years of utilizing DUWASA services. Similarly these results indicated that respondents had been served by DUWASA for a long time enough to be able to make reliable and an adequate comments with regard to the services offered.

Table 9: Customers Time Using DUWASA Services

Time Using Services	Frequency	Percentage(%)
1-5 years	27	34.61
6-10 years	20	25.64
11 and above	31	39.75

Source: Field data, 2013

4.2.4 (a) Staff Position

Staff respondents were drawn from various departments occupying various positions. This was in line with the purposive sampling technique that aimed at obtaining relevant information for answering key questions. The findings in Table 10 below show that 36.37% (12) were from technical department, 18.18% (6) commercial, 15.15% (5) finance, 6.06% (2) administration, 6.06% (2) HRM, 6.06%(2) LEGAL, 6.06% (2) Procurement and 6.06% (2) were from Public Relation department respectively.

Table 10: Staff Position

Staff Department	Frequency	Percent(%)
Technical	12	36.37
Commercial	6	18.18
Finance	5	15.15
Administration	2	6.06
HRM	2	6.06
Legal	2	6.06
Procurement	2	6.06
Public Relation	2	6.06

Source: Field data, 2013

4.2.4 (b) Customers

The study by Mugabi and Kayaga (2010) in 8 major towns in Uganda on utilities customers, found that occupation of the household head had statistically significant direct relationships with intentions and willingness to pay. For the purpose of addressing bias due to occupation status, at the same time enhancing credibility of the study findings, the researcher therefore wanted to know the occupation of DUWASA customers. Findings in Table 11 below show that 57.69% (45) were civil servants occupying various job titles, 28.21% (22) entrepreneurs engaged in various business, 3.85% (3) engineers, 3.85% (3) security officers, 2.56% (2) private medical doctors, 2.56% (2) were peasants and 1.28% (1) was a pastor.

Table 11: Customers Occupation

Customers Occupation	Frequency	Percent(%)
Civil servant	45	57.69
Entrepreureur	22	28.21
Private Engineer	3	3.85
Security Officer	3	3.85
Private doctor	2	2.56
Peasant	2	2.56
Pastor	1	1.28

Source: Field data, 2013

4.3 Measures to Achieve Customer Satisfaction

Section 13(1) of The Water Supply and sanitation Act, 2009 provides that “.. a water authority shall do all things necessary to provide water supply and sanitation services to the area falling under its jurisdiction”. Likewise the National Water policy, 2002 states the urban water supply and sanitation (UWSS) guiding principles. Four of theses principles are as stated below:

1. Water and sanitation are critical components of development, thus access to UWSS is a right of every Tanzanian.
2. Quality Assurance is Vital in UWSS services.
3. Cost Recovery is the foundation of sustainable services delivery and
4. Water demand management shall be emphasised.

In addition, the national water policy (2002) sets a goal on financing of urban water supply and sewerage services. The goal demands the Urban Water Supply and Sewerage Authorities, to have tariff setting mechanism which would ensure that water users pay for

full cost recovery. Moreover, the national water policy (2002) set an objective that required a demand management, the objective being to prevent wastefulness water use and control water leakages.

In consideration to the above stated statutory was the national policy requirement and this study's objectives. The researcher was interested in assessing the measures implemented by the Authority for achieving customer's satisfaction and the above stated statutory obligations. The study by using focus group discussions, documentary review, questionnaires and also thorough face to face conversations with the staff of DUWASA management and members of staff has found the following measures were implemented to achieve customer's satisfactions by the organization.

The findings of this study have revealed that as it is for any kind of business, water supply and sewerage authorities need to set strategies to serve its customers. This study also has found out that there were performance benefits that DUWASA enjoyed as a result of implementing customer satisfaction measures. These findings have signified that, various businesses have various customer satisfaction strategies. These strategies may vary depending particularly on the type of the business the entity was engaged in. For example customer satisfaction strategies might depend on the nature of a market, type of the products or services provided, market segment, the extent of competition and so on.

The most frequent cited measures from responses of members of staff and management found out by this study include: water quality control, control of pressure and leakage, fairness of tariffs, sewerage disposal services, free call and emergency services, staff training, customer services centre, public relation unit, client services charter, education and communication and demand management. These were the most cited measures by 33

staff respondent's encountered, as explained in descending order and indicated in Table 12 below.

4.3.1 Water Quality Control

Water is a basic and essential human need. It supports human life and other human activities. It is used both for human consumptions and human economical activities. With this regard in mind, the researcher has found out that, the authority controls the quality of water supplied to its customers. DUWASA has set mechanisms for ensuring that water supplied to its customer was safe, clear and meets all acceptable water standards. Random sampling was done every two weeks at different points from water source to the distribution systems. Sampling aimed at investigating and treatment of raw water, monitoring the quality of water supplied from bore holes to customers. Findings in Table 12 below indicated that 100 % (33) of the respondents (DUWASA staff) were aware of these measures and therefore they participated effectively in its implementations.

4.3.2 Controlling Adequate of Water supply, Pressure and Leakage

This study has found out that, some the measures set to ensure adequacy of water and pressure include: a control of water production and transportation from production site to customer's supply tanks; and flow rate to customers as per strength of pipes network, in the designated area and location (highland or lowland supply). High pressure supply tended to bust old water pipes thus caused water inaduacy to customers and non revenue water (leakage) to the authority. The current water demand was about 54,0000m³ per day while its production ranged from 28,000m³ to 32,500m³ per day. Refer to Table 12 below.

4.3.3 Setting Fair Water and Sewerage Disposal Tariffs

The study further has found out that, the authority used Kiswahili slogan, “**Maji kwa maisha salama**”, meaning water for safe living. It incorporates this principle in its water price setting. Price setting at the authority is a compromise between user’s ability to pay and services provision factors. Finally, the set tariffs were submitted to Energy and Water Regulatory Authority (EWURA) for final approval. The factors considered in price setting include; customer ability to pay, customer’s willingness to pay, and meeting quality of the services provided, cost recovery, customer satisfaction and so on. As per accounts from members of staff respondents, these tariffs were fair and low as compared to the cost of operations, maintenance and administration. Refer to Table 12 below.

4.3.4 Provision of Sewerage Disposal Services

The findings have indicated that, the Authority removed and disposed waste waters from its customers through sewerage systems and sewerage removal vans. It was recognised that about 80% of water supplied to its customers ultimately turned into sewerage. Currently the existing sewerage network covers a total length of 74km, serving about 13% of the population occupying the metropolitan area (CAG report, 2012). Sewerage removal vans additionally could be ordered at 25000/= Tanzanian shillings per trip by those who are not connected to sewerage system. Refer to Table 12 below.

4.3.5 Toll Free Calls and 24 Hours Emergence Services

To ease, simplify and reduce the cost burden of communication of customers to the authority, the authority provided toll free call services. These calls enabled the customers to lodge their complaints and communicate other useful information to the authority easily. It served for receiving useful information from good people on issues such as; water leakage, infrastructure sabotage, water theft, vandalism of water and sewerage system networks. The action built and strengthened relationship between customers and

the authority. There was also an addition of 24 hours emergency service call. Refer to Table 12 below.

4.3.6 Employee Training

The study has also found out that one of the measures implemented to achieve customer's satisfactions was through continuous internal and external staff training. The training was intended to ensure that employees at the authority were aware of what their customers expected to get from them, and that they had the technical skills and effectiveness in job performance. Notable example was in the year 2011/2012 where the authority spent a sum of TZS 128m for staff long term, short term and in house training (CAG report, 2012). Refer to Table 12 below.

4.3.7 Establishment of Customer Services Centre

To serve its customers accordingly, the authority has set up customers services center. The study has found out that, the centre was used by customers for lodging their complaints and the authority used it as a customer's communication and education point. Refer to Table 12 below.

4.3.8 Establishment of Public Relations Unit

Apart from customer services centre, this study has found out that another measure set by the authority for achieving customer satisfactions was by having a public relation unit. The unit was a major link between the authority, customers and the general public. The unit organised and communicated with customers and the general public on matters of mutual interests. It acted in proactive way in dealing with customer's matters. By so doing the authority maintained its status quo to its customers. Refer to Table 12 below.

4.3.9 Provision of Client Services Charter

The researcher has found out that in order to provide fast services to its customers the authority binded itself in client services charter. The charter explained each of the services offered and its maximum duration for providing the service. For example the charter provided that, water reconnection could be effected within 6 hours, customers on queue could be served within 10 minutes and new water connection and sanitation services was effected wthin 3 days after payments of the necessary fees, charges and fulfilment of all terms and conditions. Refer to Table 12 below.

4.3.10 Customers Education and Communication

This study has found out that, the authority's customers include almost all kinds of people in the society. These people differed in various aspects. For a business dealing with such kind of diversity of its customers, strategies were needed to satisfy them. To achieve this purpose the authority communicated and educated its customers using various methods. These methods include; televisions, newspapers, websites, and various forms of advertisements such as flies, posters, and a roving advertisement van. Education programmes at the authority include: seminars with all stakeholders, seminars with certain groups of customers, holding public meetings and using various publications that were distributed to customers and the public in general. Special education emphasized is on the proper usege of water. Improper usege of water resulted in high bills and water wastage thus creating unnecessary and avoidable complaints to the authority. Refer to Table 12 below.

4.3.11 Managing Demand

This reseach has found out that among the measures set by the authority to achieve customer satisfactions as well as meeting the national water policy requirement was by monitoring and managing demand. For example the current demand was about 54,000m³

per day. Concrete efforts were in place to manage the growing water and sewerage services demand. Currently, the authority would be conducting a project for improvements of water supply systems in Dodoma town. At completion of the project, quantity of water supplied to Dodoma town would be expected to be 60,000m³ per day. The project also has covered the rehabilitation of pumping stations, installation of chlorination equipment and a construction of the state-of-the-art laboratory (CAG report, 2012). Refer to Table 12 below.

Table 12: Measures Implemented as Cited by Staff Members

S/No.	Type of Measure	Frequency	Percent (%)
1.	Water Quality Control	33	100.00
2.	Water, Pressure, and Leakage control	33	100.00
3.	Fairness of Tariffs	30	90.91
4.	Sewerage Disposal Services	25	75.76
5.	Free call and Emergency Services	25	75.76
6.	Employees Training	23	69.69
7.	Customers Services Center	22	66.66
8.	Public Relations Unit	20	60.61
9.	Client Services Charter	18	54.55
10.	Education and Communication	17	51.52
11	Demand Management	16	48.48

Source: Field data, 2013

4.4 Customers Satisfaction with Measures and DUWASA Performance

The study of an assessment of customer's satisfactions with water and sewerage services, was interested to understand the extent of customer satisfactions with the services they were provided. Furthermore, the study wanted to understand the contribution of satisfied

water and sewerage customers to the performance of DUWASA. Customers were asked to rate thirteen factors affected water and sewerage users based on a likert scale. Customers also were asked to give their general approval rating based on the services DUWASA provided. Moreover through focus group discussions and documentary reviews the researcher was able to identify some of the contributions to performance of DUWASA. The results has concurred with those of Diane (2005) in her study to determine contribution of consumer preference on utility performance in Canada. She concluded that consumer preference results in customer satisfaction. Therefore this section presents the findings on the extent of customer's satisfactions with water and sewerage services as well as, the contribution of the implementation of customer's satisfaction measures to the performance of DUWASA.

4.4.1 Extent of Customer Satisfaction

This study wanted to assess the extent to which the measures implemented had led to customer satisfactions. To assess the extent to which, the measures had led to customer satisfactions, the researcher assessed customer's satisfaction with water and sewerage services basing on customer satisfactions features. Basing on a Likert scale, the customers were asked to rate the extent of satisfactions with various services that were provided by DUWASA. The customers also were asked to provide their general approval rate for the services provided. The findings have shown that about 9 customers out of 10 at least were satisfied with the services (see Table 13 below). The other respective results are as discussed below.

Table 13 :Services Approval Rate by Customers

Responses	Frequency	Percent(%)
Very Satisfactory	6	7.7
Fairly Satisfactory	38	48.7
Satisfactory	27	34.6
Unsatisfactory	6	7.7
Extremely Unsatisfactory	1	1.3
Total	78	100.0

Source: Field data, 2013

4.4.1.1 Adequate Pressure and Water Supply

The study wanted to know the extent of customer's satisfactions on adequacy of water supply as well as the adequacy of water pressure. Results in Table 14 below indicate that 15.38% (12) of respondents strongly agreed with the current level of water and supply pressure adequacy; 39.74 % (31) agreed and 34.61 % (27) neither agreed nor disagrees. Only 10.27% of respondents disagreed with current pressure and water supply adequacy. These results indicated that 55.12% of DUWASA customers were satisfied with the current pressure and water supply adequacy.

Table 14:Pressure and Water Supply Adequacy

Responses	Frequency	Percent(%)
Strongly Agree	12	15.38
Agree	31	39.74
Neither Agree nor Disagree	27	34.61
Disagree	8	10.27
Total	78	100.0

Source: Field data, 2013.

4.4.1.2 Adequacy of Sewerage Services

The study's assessment on adequacy of sewerage services indicated in Table 15 below has found out that, 5.13 % (4) of respondents strongly agreed, 17.95% (14) just agreed, 32.05% (25) neither agreed nor disagreed with the extent of sewerage adequacy and 35.9% (28) disagreed where as 8.97% (7) were strongly dissatisfied with the current level

of sewerage services adequacy. The results (23.08% approval rate) show that most customers were not satisfied with the current adequacy of sewerage services. Most of them cited sewerage network coverage; inadequacy and frequent system break down as their major concerns for their dissatisfactions with the current adequacy of the level of sewerage services.

Table 15: Adequacy of Sewerage Services

Responses	Frequency	Percent(%)
Strongly Agree	4	5.13
Agree	14	17.95
Neither Agree nor Disagree	25	32.05
Disagree	28	35.90
Strongly disagree	7	8.97
Total	78	100.0

Source: Field data, 2013

4.4.1.3 Water Reliability

The study's assessment on the extent of customer's satisfactions with water reliability found out that 8.97 % (7) of the respondents were strongly supporting the current water reliability level, 28.21 % (22) just agreed, 16.66 % (13) of them were neutral, that was they neither agreed nor disagreed. At the same time 38.46 % (30) of the group did not agree, where as 7.70 % (6) of the respondents strongly did not agree with water reliability. The 37.18% approval rate for water reliability has indicated that DUWASA customers were not happy with the current rate of water reliability. Table 16 below summarizes findings on water reliability.

Table 16:Reliability of Water Supply

Responses	Frequency	Percent(%)
Stronly agree	7	8.97
Agree	22	28.21
Neither agree nor disagree	13	16.66
Disagree	30	38.46
Strongly disagree	6	7.70
Total	78	100.00

Source: Field data, 2013

4.4.1.4 Reliability of the Sewerage Services

This study's assessment, of sewerage services in Table 17 below has indicated that 3.85 % (3) respondents strongly agreed, 20.51 % (16) agreed, 29.49 % (23) neither agreed nor disagreed. The results also have indicated that 38.46 % (30) of respondents disagreed and 7.69 % (6) were strongly not satisfied with reliability of the sewerage services. DUWASA customers seem to be least satisfied with this service.

Table 17:Reliability of Sewerage Services

Responses	Frequency	Percent(%)
Strongly agree	3	3.85
Agree	16	20.51
Neither agree nor disagree	23	29.49
Disagree	30	38.46
Strongly disagree	6	7.69
Total	78	100.0

Source: Field data, 2013

4.4.1.5 Fairness of Water Tariffs

The researcher wanted to know the extent of customer satisfactions with water tariffs. The results on fairness of water tarrifs in Table 18 below has indicated that 8.97% (7) of the customers strongly supported the current water tariffs, 21.79 % (17) just agreed, where as 41.03% (32) of the them were in between of agreeing or not agreeing and last, 20.51% (16) disagreed while 7.7% (6) were strongly not supporting the current water

tariffs. These results have shown that only small percentages (30.76%) of DUWASA customers were happy with the current water tariffs.

Table 18: Fairness of Water Tariffs

Responses	Frequency	Percent(%)
Strongly agree	7	8.97
Agree	17	21.79
Neither agree nor disagree	32	41.03
Disagree	16	20.51
Strongly disagree	6	7.70
Total	78	100.0

Source:Field data, 2013

4.4.1.6 Fairness of Sewerage Services Tariffs

The study's assessment similarly on fairness of sewerage services tariffs has revealed the following results: 2.56% (2) of the respondents strongly supported the current sewerage disposal tariffs, 11.54 % (9) just agreed, 41.04% (32) neither agreed nor disagreed, 34.62%(27) disagreed and 10.25%(8) strongly disagreed with sewerage services tariffs. These results were as summarized in Table 19 below. This was another area of customer's dissatisfactions with DUWASA services as only 14.1% were happy with the tariffs.

Table 19: Fairness of Sewerage Tariffs

Responses	Frequency	Percent(%)
Strongly agree	2	2.56
Agree	9	11.54
Neither agree nor disagree	32	41.03
Disagree	27	34.62
Strongly Disagree	8	10.25
Total	78	100.0

Source: Field data, 2013

4.4.1.7 Water Colour Clearness and Safety

The study wanted to assess the extent of water colour clearness factor from the views of customers. The results in Table 20 below have shown that 10.26 % (8) of the surveyed customers strongly agreed, 52.57 % (41) just agreed, 21.79 % (17) of them neither agreed nor disagreed with the level of water colour and safety. At the same time 14.10 % (11) disagreed and only 1.28 % (1) strongly disagreed. Most (62.83%) of DUWASA customers were satisfied with the water colour clearness and safety.

Table 20:Water Clearness and Safety

Response	Frequency	Percent(%)
Strongly agree	8	10.26
Agree	41	52.57
Neither agree nor disagree	17	21.79
Disagree	11	14.10
Strongly disagree	1	1.28
Total	78	100.00

Source:Field data, 2013

4.4.1.8 Water Colour and Taste

Another customer satisfaction factor that was assessed by the researcher was water colour and taste. The results in Table 21 below has indicated that, 23.08 % (18) of respondents strongly agreed with the water colour and taste, 44.87 % (35) were just satisfied and 21.80 % (17) neither agreed nor disagreed with, 7.69% (6) did not accept and 2.56 % (2) of them strongly did not accept. The majority, 67.95% of DUWASA customers were satisfied with the water colour and taste.

Table 21:Water Colour and Taste

Response	Frequency	Percent(%)
Strongly agree	18	23.08
Agree	35	44.87
Neither agree nor disagree	17	21.80
Disagree	6	7.69
Strongly disagree	2	2.56
Total	78	100.00

Source:Field data, 2013

4.4.1.9 Meter Reading and Billing Accuracy

Customer's views on the extent of customer's satisfaction on meter reading and billing accuracy in Table 22 below has indicated that 11.54% (9) respondents strongly agreed with the accuracy of the bills supplied to them; 29.49% (23) were just satisfied; 34.62% (27) neither agreed nor disagreed; 21.79% (17) did not agree and 2.56% (2) strongly believed that the bills were inaccurate. This was another factor which has received low rating (41.03%) by customers.

Table 22: Accuracy of Meter Reading and Billing

Response	Frequency	Percent(%)
Strongly Agree	9	11.54
Agree	23	29.49
Neither agree nor disagree	27	34.62
Disagree	17	21.79
Strongly Disagree	2	2.56
Total	78	100.0

Source: Field data, 2013

4.4.1.10 Timeliness of Bill Preparation and Delivery

Another factor assessed by this study was the timeliness of bill preparation and delivery to customers. The results on the extent of customers' satisfaction with timeliness of bill preparation and delivery in Table 23 below have shown that 17.95 % (14) of respondents strongly agreed with the speed of preparing and delivering the bills to customers, 48.72% (38) agreed, 12.82% (10) neither agreed nor disagreed. On the other hand 17.95 % (14) disagreed and 2.56 % (2) strongly were not satisfied. Majority, 66.67% of customers were satisfied with timeliness of bill preparation and delivery.

Table 23: Timeliness of Bill Delivery

Responses	Frequency	Percent(%)
Strongly agree	14	17.95
Agree	38	48.72
Neither agree nor disagree	10	12.82
Disagree	14	17.95
Strongly Disagree	2	2.56
Total	78	100.0

Source, Field data 2013

4.4.1.11 Helpfulness, Knowledge and Courtesy of DUWASA Staff

The study wanted to assess the extent of customer's satisfactions on, helpfulness, knowledge, courtesy and hospitality of DUWASA staff when served customers. The study's results in Table 24 below have shown that 11.54 % (9) of the respondents were strongly satisfied and 41.03 % (32) were satisfied. In addition almost 1 in 4 respondents (25.64%) neither agreed nor disagreed. The other results were such that 17.95 % (14) disagreed and 3.84% (3) were strongly not satisfied. Overall results on this factor indicated that customers were moderate (52.57%) satisfied with helpfulness, knowledge, courtesy and hospitality of DUWASA staff.

Table 24: Helpfulness, Knowledge and Courtesy of DUWASA Staff

Responses	Frequency	Percent(%)
Strongly Agree	9	11.54
Agree	32	41.03
Neither agree nor disagree	20	25.64
Disagree	14	17.95
Strongly Disagree	3	3.84
Total	78	100.0

Source: Field data, 2013

4.4.1.12 Handling of Customers' Complaints

The study also wanted to assess the extent of customers satisfaction on handling of customers complaints. The results in Table 25 below have shown that 5.13% (4) of respondents strongly agreed with the way DUWASA handled customer's complaints; 29.49% (23) agreed and 37.18% (29) neither agreed nor disagreed; 24.36% (19) did not agree where as only 3.84% (3) of respondents strongly were unhappy with the extent of customer complaints handling at DUWASA. These results have indicated that customers

were not satisfied by the way their complaints were handled. Only 34.62% were satisfied with customers complaints handling.

Table 25: Complaints Handling

Responses	Frequency	Percent(%)
Strongly Agree	4	5.13
Agree	23	29.49
Neither agree nor disagree	29	37.18
Disagree	19	24.36
Strongly Disagree	3	3.84
Total	78	100.0

Source: Field data, 2013

4.4.1.13 Flexibility and Easiness of Bill Payments

The researcher was also interested in assessing the flexibility and easiness of bill payments. The results in Table 26 below on the extent of customer's satisfactions with the flexibility and easiness of bill payments indicated that 16.66 % (13) of respondents strongly agreed with the flexibility and easiness of bill payments at the authority; 46.16% (36) were satisfied and 30.77% (24) neither agreed nor disagreed; 3.85% (3) disagreed; 2.56% (2) strongly did not. These result indicated that majority (62.82%) of customers were satisfied with the current DUWASA' mode of bill payment.

Table 26: Flexibility and Easiness of Bill Payment

Responses	Frequency	Percent(%)
Strongly Agree	13	16.66
Agree	36	46.16
Neither agree nor disagree	24	30.77
Disagree	3	3.85
Strongly Disagree	2	2.56
Total	78	100.0

Source, Field data, 2013

4.4.2 Contribution of Measures to DUWASA Performance

This study assessed the extent at which the measures implemented have contributed to the performance of DUWASA. Through focus group discussions all Management and staff who participated in this study agreed that the measures have led to some achievement. Therefore this section presents the respective results found out by this study on the contribution of customer satisfactions measures to DUWASA performance.

4.4.2.1 Revenue Collection

This study has found out that one of the measures performance contributions was the growth of revenue collection. Using the same water and sewerage charges rate, revenue collection has grown up from 2,795,171,000 TSH, in 2008, to 5,892,363,000 TSH, in 2012 (GAG report, 2009, 2010, and 2012). This increase corresponds to 210.81% within a period of 5 years only (Figure 4). Discussion with staff has revealed that, about 90% to 95% of the bills distributed to customers were paid in thus fostering growth in revenue collection. The results agree with those of Anderson and Srinivasan (2003) who conducted a survey in the banking sector to determine what drives profitability in banks. They concluded that quality services leads to satisfied customers who then uses much of the services and hence enhancing profit (revenue).

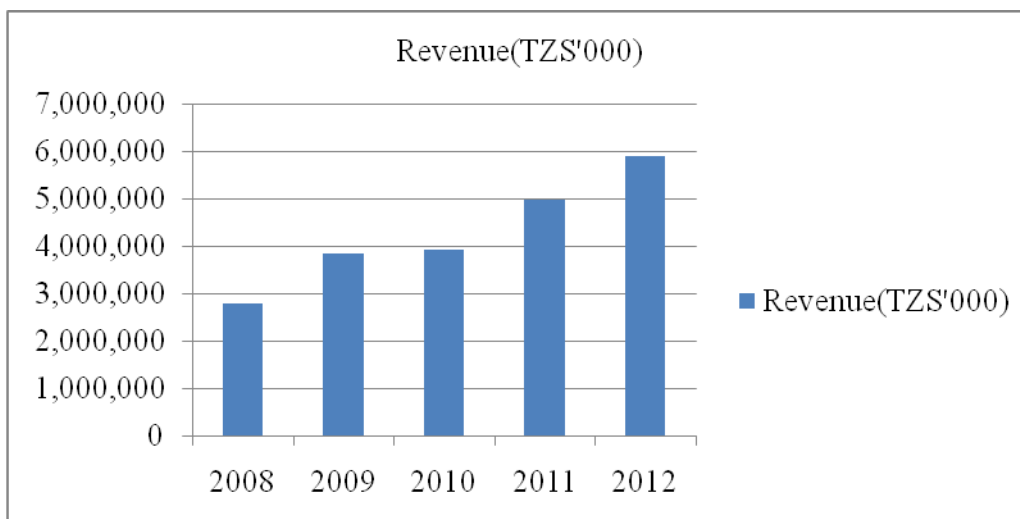


Figure 4:Revenue Collection Trend (2008-2012)

Source: Field data, 2013

4.4.2.2 Customers willingness to Pay

This study also wanted to assess whether the measures implemented at the authority had an influence on customer willingness to pay. The above fact was attested from customers using the Question “Do you pay for your services willingly?” The results have indicated that, 93.6 % (73) of customers respondents agreed that they payed for their services willingly. This implies that, most of the customers were satisfied with the services provided by the authority and were willingly payed for the services offered to them. Refer to Table 27 below.

4.4.2.3 Extent of Bill Payments

The study also was interested in identifying the extent of bill payments as an outcome of customers satisfaction measures. The results have shown that 92.3 % (72), replied affirmative to the question “Do you pay your bills full and quickly”. This also has indicated that measures had positive results to the organization. These results also are in agreement with those of Kenneth et al, (2005) who ascertain that willingness to pay are

enhanced when most of the service attributes satisfies customers. Refer to Table 27 below.

Table 27: Assessment of Willingness to Pay and Bill Payments

Variables	Yes		No		Total
	Frequency	Percent(%)	Frequency	Percent(%)	
Willingness to Pay	73	93.6	5	6.4	78
Bill Payments	72	92.3	6	7.7	78

Source: Field data, 2013

4.4.2.4 Willingness to Protect DUWASA Property

The researcher has found out that, the concerted efforts that were made to satisfy customers had paid well in the area of DUWASA's property protection and reduction of theft. Education and communication measures had helped in understanding that water was a compulsory good in life. One way to avoid and create an environment of continuous water supply and sewerage services was to protect DUWASA properties. To attest for the above fact the researcher found out that 93.6% of the respondents said that they properly kept the authority's properties. Refer to Table 28 below.

4.4.2.5 Sabotage Reporting

The study has found out that 89.6% of the respondents said that they reported sabotage in timely manner. These results also were clear indications of success of the measures implemented for customer satisfactions. Refer to Table 28 below.

4.4.2.6 Customers Loyalty

Customers were asked whether they could willingly recommend the services provided by the authority to another person. The results have shown that 96.2 % (75) of 78 respondents agreed that, they could recommend the authority's services to another person. These results were also a clear indication that loyalty of customers towards

DUWASA services were of high extent. These results confirms with the findings of the the study of Anderson and Sullivan (1993), Andreassen and Lindestad (1998), Lin and Wang (2006) who concluded that customer satisfaction brings customer loyalty. Refer to Table 28 below.

Table 28:Willingness to Protect DUWASA Property and Loyalty

Variables	Yes		No		Total
	Frequency	Percent	Frequency	Percent	
Property Protection	73	93.60	5	6.40	78
Sabotage Reporting	69	88.46	9	11.54	78
Ability to Recommend	75	96.20	3	3.80	78

Source: Field data, 2013

4.4.2.7 Other Contributions

Through focus group discussions with DUWASA staff, the study has found that, complaints lodged at the authority were decreasing as time goes on. As a result the number of customers who were paying their bills without complaints had increased. Focus group discussions also has revealed that another positive and beneficial outcome of the measures of customer’s satisfaction was the change in the traditional belief that water was a God’s given gift to human being. Most of the authority’s customers clearly understood that water was a product like other products. There were costs involved in production, distribution, investment and other running cost, thus the cost recovery was necessary for sustainability of this important service in human life.

4.5 Challenges Emanating from the Extent of Customer’s Satisfaction and from DUWASA Staff Members

The study wanted to assess the challenges faced by the authority. It had a special interest in understanding the challenges facing staisfactions measures as well as challenges generated as per customers extent of satisfactions with DUWASA services. Therefore

this section presents challenges faced by the authority as mentioned by staff members, documentary review and focus group discussions. Moreover this section presents challenges emanated from the extent of customer's satisfactions with DUWASA services. Below were the findings of this study.

4.5.1 Challenges Emanating from the Extent of Customers Satisfaction

This section has presented the analysed areas that needed to be taken care by the authority as an outcome of customer's views. These challenges were as emanated from customers extent of satisfactions. It was the outcome of the examined respondents opinion on the factors that affected water and sewerage users satisfactions.

4.5.1.1 Adequacy of Sewerage services

The results from the respondents in Table 29 below indicated that 44.87% (35) disagree with the adequacy of sewerage services. The extent of dissatisfaction was large as compared to the extent of satisfaction where only 23.08% (18) agree and 32.05% (25) were neutral. These results clearly indicated that majority customers were not satisfied with the current level of sewerage services adequacy. Therefore this was a clear indicator to the authority to improve sewerage services adequacy.

Table 29:Unsatisfactory Adequacy of Sewerage Services

Responses	Frequeancy	Percent(%)
Agree	18	23.08
Neutral	25	32.05
Disagree	35	44.87
Total	78	100.00

Source:Field data, 2013

4.5.1.2 Reliability of Water Supply

Another challenges faced the authority was the reliability of water supply. The study's results in Table 30 below has found out that 37.18% (29) of them agreed with water reliability and the percentage of those who disagreed being 46.15%(36). By comparison the percentage of those who disagreed were much more than those who agreed with water reliabilty. 16.17% (13) were neutral. This also was another sign of customers unsatisfactory with water reliability. This signified that the authority needed to put more efforts to improve water reliability.

Table 30:Unreliability of Water Supply

Responses	Frequency	Percent
Agree	19	24.36
Neutral	23	29.49
Disagree	36	46.15
Total	78	100.00

Source: Field data, 2013

4.5.1.3 Unreliability of Sewerage Services

The results in Table 31 below has indicated that only 24.36% (19) of customers respondents were satisfied with sewerage services reliability where as 46.15% (36) disagreed and 29.49% (23) were neutral.These results indicated that customers were

unsatisfied with reliability of sewerage services. The authority needed to do every thing that was possible to strengthen sewerage services reliability.

Table 31:Unreliability of Sewerage Services

Responses	Frequency	Percent(%)
Agree	19	24.36
Neutral	23	29.49
Disagree	36	46.15
Total	78	100.00

Source:Field data, 2013

4.5.1.4 Unfairness of Sewerage Tariff

The results in Table 32 below, similarly have indicated that the majority of customers were dissatisfied with the tariff imposed on sewerage services. It indicated that 28.21% (22) disagreed with sewerage tariff and 41.03% (32) were neutral. Only 30.76% (24) agreed. This was also a clear indication to the authority to see on how to compromise sewerage tariff with its customers.

Table 32:Unfair Sewerage Tariffs

Responses	Frequency	Percent(%)
Agree	24	30.77
Neutral	32	41.03
Disagree	22	28.21
Total	78	100.00

Source:Field data, 2013

4.5.1.5 Unsatisfactory Water Tariffs

As indicated in Table 33 below, the study has found out that most respondents were not satisfied with water tariffs. The respondents who either strongly agreed or just agreed 30.77% (24) with water tariffs was less than those who either strongly disagreed or just

disagreed plus those that expressed neutral opinion(69.23)%. This was because a customer being neutral signified that currently s/he was not satisfied and if the authority did nothing to turn him into a satisfied condition, this customer would be added to the number of dissatisfied customers.

Table 33:General Opinion on Water Tariffs

Responses	Frequency	Percent(%)
Satisfied	24	30.77
Neutral	32	41.03
Dissatisfied	22	28.20
Total	78	100.00

Source: Field data, 2013

4.5.1.6 Inaccuracy of Meter Reading and Billing

Combined results in Table 34 below have indicated that 41.03% (32) of respondents were satisfied with this factor. 34.62% (27) neutral and 24.35% (19) of respondents were dissatisfied with the accuracy of meter reading and billing. The overall percentage of neutral and dissatisfied customer indicated that the authority faced the challenges of its accuracy in meter reading and billing.

Table 34: Customers Views on Accuracy of Meter Reading and Billing

Responses	Frequency	Percent(%)
Satisfied	32	41.03
Neutral	27	34.62
Dissatisfied	19	24.35
Total	78	100.00

Source:Field data, 2013

4.5.1.7 Complaints Handling

Overall results have shown in Table 35 below on DUWASA customer's complaints handling showed that 34.62% (27) of respondents were satisfied where as 37.18% (29) were neutral and 28.12% (22) were dissatisfied. These results indicate that the number of customers who were not satisfied on how DUWASA handled customers complaints was large. These results suggested to the authority to counteract this challenge.

Table 35: General View on Complaints Handling

Responses	Frequency	Percent(%)
Satisfied	27	34.62
Neutral	29	37.18
Dissatisfied	22	28.12
Total	78	100.00

Source:Field data, 2013

4.5.2 Challenges Mentioned by the Authority Workers

This section presents the findings on the challenges faced customers satisfactions measures and the authority as mentined from the focus group discussions, documentary review and face to face conversations.

4.5.2.1 Production to Meet Demand

A rise in population in Dodoma, posed a challange to the Authority. Establishment of new colleges, government and private institutions resulted in an expected population increase in the municipal. Thus creating an abrupt demand of water and sewerage services. A notable example was as indicated in Table 36 and Figure 5 below. In the year 2008 for example, the deficit in water supply was only about 10%. But in 2009 the deficit rose to 22%. From 2009 to 2011 there was a slight decrease and constant water supply deficit of about 22%. However due to an abrupt increase in population in Dodoma municipal, it could clearly be realized that water deficit rose from nearly 22% to nearly 49% in 2012.

The reseacher has found out that, low investment wchich led to scarcity of resources for expanding clean water and sewerage networks was another challenge to the authority. These resources include both human and materials such as finance. New investment were needed for establishing and running various projects for provision of better services. Resource scarcity also resulted in difficult work environment and unsatisfied compensation schemes. This posed a problem of not satisfying internal customers who were responsible for satisfying external customers.

Table 36: Demand and Actual Water Production from 2008 to 2012

Year	Demand(M ³)	Actual (M ³)	Deficit (M ³)	Deficit(%)
2008	9199920	8250500	949420	10.32
2009	11803320	9160300	2643020	22.39
2010	12600000	9737350	2862650	22.72
2011	12600000	9838581	2761419	21.92
2012	19710000	10148142	9561858	48.51

Source: CAG report (2008,2009,2010,2011,2012)

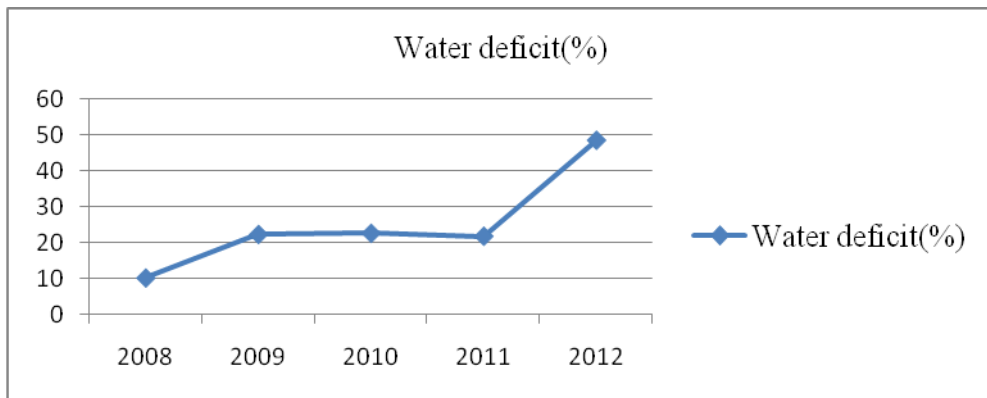


Figure 5: Percentage Water Production Deficit from 2008 to 2012

Source: Field data, 2013

4.5.2.2 Leakage

The researcher has found out that leakage was a big challenge to DUWASA. Leakage occurred in various forms including pipe burst due to old distribution of pipelines, vandalism of infrastructure due to the booming business of used iron materials and water theft. This posed a serious problems to DUWASA. Leakage set back the measures and efforts for achievement of customers satisfactions. A good example was by considering Table 37, Figure 6 below. Leakage had been at an average rate of about 42% for the years 2008-2011. The only exception was in 2012, when there were a drop to 36.9%. This means that, for every 10 litres of water supplied , 4 litres were lost. This implied that the

authority lost a lot of revenue necessary for provision of good services in form of leakage.

The researcher has also learned that, some customers did not use water supplied to them properly. For example some of the habits that were discouraged as poor use of water include, washing a single tea spoon on an open water tap stream, using domestic water for gardening, washing domestic utensils directly from the water taps and any other such similar water use. This resulted in loss and wastage of water. Consequently resulted in a high water bill to customers but also loss of income to the authority since various group of customers had varying tariffs rates.

Moreover the researcher has also found out that some leakage was caused by aging of pipe network due to soil acidity. The acidic soil resulted in corrosion and lasting of the pipes. The aged pipe necessitated pipe changes. Thus frequent and high maintenance costed the authority.

Table 37: Water Sales Against Leakage from 2008 to 2012

Year	Actual (M³)	Sales(M³)	Leakage(M³)	Leakage (%)
2008	8250500	4941650	3308850	40.11
2009	9160300	5099487	4060813	44.33
2010	9737350	5587822	4149528	42.61
2011	9838581	5850016	3988565	40.54
2012	10148142	6406915	3741227	36.86

Source:CAG report (2008,2009,2010,2011,2012)

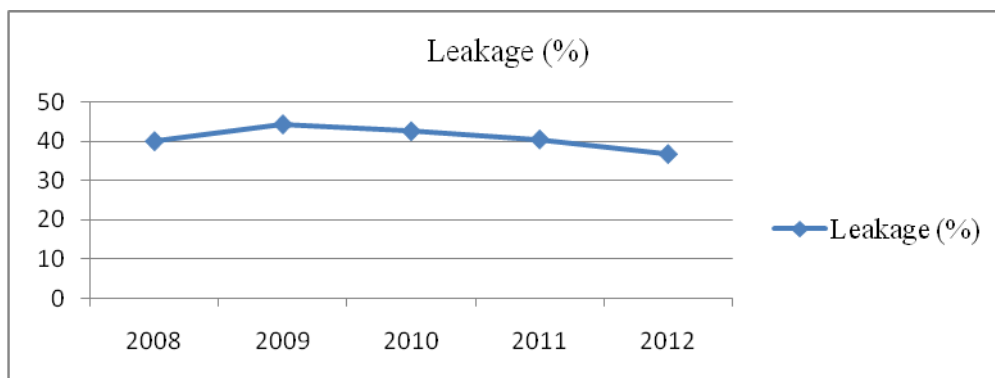


Figure 6: Percentage Non Revenue Water from 2008 to 2012

Source: Field data, 2013

4.5.2.3 Sustainability of the Services

The researcher has found out that sustainability of net income generation was still a challenge. A notable example was by considering financial results of years 2008 to 2012, shown in Table 38 below. In the year 2008, 2009 and 2010, financial results indicated a net loss. However, in the year 2011 and 2012, the financial results indicated a positive net income. There was unstable net income. To sum up, this was a challenge to the authority. It needed to put in place measures that would make net income growing and stable for sustainability of the services and the authority.

Table 38: Financial Results from 2008 to 2012

Year	Liquidity(TSH)	Net income(TSH)
2008	1,072,264,000	(724207000)
2009	2,395,973.000	(70,970,000)
2010	1,218,004,000	(543,964,000)
2011	4,235,032,000	324,622,866
2012	1,538,514,000	73,608,993

Source: CAG report 2008, 2009, 2010, and 2011 2012

Other challenges found by this study as per focus group discussions include the following.

Unreliable Power Supply

The researcher through a focus group discussion has found out that power was the heart of water production and distribution. Power was used in pumping water from the bore holes to surface water storage tanks. Water pumping consumed high amount of power. However, the tariff for a single power unit remained high as compared to the price of a single water unit. Despite that power supply was unreliable. Consequently, power caused a rise of production cost thus reduced efforts for good, cheap and affordable services.

Poor Bill Payments

The study has found out that, customers that were government institutions posed a big challenge in paying and settling their accounts. Government institutions used huge amounts of water and sewerage services. Yet they delayed in settling their accounts when due. This resulted in delaying revenue collection. The overall effect was a delay on the implementation of important projects, necessary for achieving customers satisfactions and for sustainability of services.

The study also found out that, low income people was a challenge in bill payments. Low income people claimed that, tariff rates imposed by DUWASA were high and not fair at all. Therefore customers with such beliefs caused delays in bill payments.

Insufficient Training and Development Programmes

Training and development programmes were necessary for ensuring that the organization had the necessary skills needed at the right time. Training and development programmes did not only give employees the necessary skills but also raised employee's morale and motivations. Currently the authority had a rate of 3 employees under going for external

training per year. This number was low as compared to its total employee force of about 230. Despite the internal training conducted at the authority, some employees lack the necessary skills required for improving their performances.

4.6. Conclusion

This chapter have presented and discussed the results on an assessment of customer satisfactions with water and sewerage services. It has discussed the profile of respondents who participated in this study as well as presenting the answers to the research questions of this study. In particular it has presented the various measures implemented to achieve customer satisfaction and its respective performances contribution to DUWASA. The extent of customer satisfaction with customers satisfying factors have also been discussed. Finally, the chapter winds up by presenting the challeges facing implementation of customer satisfactions measures.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter is about the description of the summary findings that were discussed in the previous chapters. It is also about the provision of conclusions as well as the policy recommendations of the main issues emerged in this study.

5.2 Summary of the Findings

This study has aimed at assessing customers satisfactions with water and sewerage services with DUWASA as the case study. The summary findings are as presented below.

This study wanted to know the measures put in place by DUWASA for achieving customers satisfactions. The results has indicated that, the following measures were being implemented for achieving customer's satisfactions, which are: controlling the quality and adequacy of water supplied to customers, control of the pressure and leakages; setting fair water and sewerage disposal tariffs; provision of sewerage disposal services; toll free calls and 24 hours emergency services; employee's training; establishment of customer service centre and public relations unit; provision of client services charter; providing customers education, communication and a managing of demand.

The study also has assessed the contribution of customer's satisfaction measures to DUWASA performance. Focus group discussion and documentary review has revealed the following with regards to DUWASA performance achievements: an improvement in revenue collection, reduced customers complaints, strengthening customer willingness to pay, change in the traditional and behaviour regarding water as a God's gift to human being, instead of regarding it as any product that incurs cost in its production. Other

performance outcome which were found out linked to customers satisfaction were the following: prompt payment of bills; willingness to protect DUWASA properties; reporting of sabotage of DUWASA infrastructures to DUWASA staff; and readiness to recommend to other the good qualities of DUWASA services.

The study was also interested in assessing the extent to which the measures implemented have led to customer satisfaction by assessing the factors that influence customer's satisfaction with water and sewerage services. On the whole majority of customers were satisfied with DUWASA services. An aspect that made them satisfied include: adequacy of pressure and water supply; adequacy of sewerage services; reliability of water supply; reliability of sewerage services; fairness of water tariffs; fairness of sewerage tariffs; water clearness and safety; water colour and taste; accuracy of meter reading and billing; timeliness on bill delivery; helpfulness, knowledge and courtesy of DUWASA staff; DUWASA's complaints handling and flexibility and easiness of payment bills.

The study also wanted to assess the challenges facing implementation of customer satisfaction measures. The researcher was interested in understanding the challenges as emanating from the extent of customer satisfaction and from DUWASA staff members. The study has revealed out the following challenges emanating from the extent of customer satisfaction: provision of sewerage services; water supply reliability; reliability of sewerage services; fairness of sewerage tariffs; and complaints handling by DUWASA.

Moreover the study wanted to assess the challenges as per worker's opinions. The following challenges were mentioned as to face the authority: production not to meet demand due to rapid population growth and expansion of Dodoma municipal as well as low investments; leakage due to old pipeline networks, vandalism of infrastructures,

water theft, early aging caused by soil acidity and improper use of water; unreliable and high power tariffs; poor bill payment by government institutions and low income people; insufficient training and development programmes and finally unstable net income generation by DUWASA.

5.3 Conclusion

This study was aimed at assessing customer satisfaction with water and sewerage services. The study was specifically targeted at understanding the measures implemented for achieving customer satisfaction. The study has found out that DUWASA has set a number of measures for achieving customer's satisfactions as stipulated and discussed in chapter four.

Moreover the study had a target of assessing the extent measures led to customer satisfaction with DUWASA services. The study has found out that majority of customers were satisfied with DUWASA services and ready to advocate the services to other new customers. The measures implemented also were found to have contributions to the performance of the authority as evidenced in chapter four.

Finally, the study had a target of assessing the challenges faced by the implementation of customer satisfaction measures. The main challenges found out were low water production, smaller sewerage network coverage and water leakages as full discussed and detailed in chapter four.

5.4 Recommendations

The study has assessed customer satisfaction with water and sewerage services. The study has found out a number of challenges that need to be worked upon for improvements, quality and sustainability of water and sanitation services.

Even though, the authority was doing what it could to cover large area of water and sewerage networks and providing quality and adequate services, its financial and technological capacity as compared to the population growth in Dodoma municipality was still low. To solve these challenges, an immediate government intervention was needed to counteract low investment, poor bill payment of its institutions, unreliable power and insufficient training and development programmes. This would strengthen the capacity of the authority to provide quality and adequate services .

- The authority was providing education and communications to its customers using various methods. However, there were still many customers who did not receive these education and communications programmes. For that reason, further enhanced, stronger education and communication programmes should be reengineered to enable many customers access it. This would provide many advantage to the authority and its customers.
- The authority need to put special efforts to expand its sewerage networks to cover the whole metropolitan area of Dodom town.
- As at its current rate, non revenue water was a big challenges that requires much more concerted efforts to reduce and eliminate it.

5.5 Area for Further Research

This study has dealt with an assesement of customers satisfaction with water and sewerage services. It has directed its efforts at understanding the measures and contribution of customers satisfaction as well as the challenges faced implementation of customer satisfaction measureas. However, this study could not cover all areas. A good example of such areas is the impact of population growth on revenue expansion, sustainable services and customers satisfactions. This area is important, since population

growth is only viewed as a challenge and not an opportunity. Population growth may result in an increase of customer base and hence expansion and growth of income of the authority.

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APPENDICES

Appendix 1: Questionnaire for DUWASA Management and Staffs

The objective of this questionnaire is to assess customers satisfaction with water and sewerage services. It is true that satisfied customers are the source of DUWASA performance improvement. I would like to request you as DUWASA employee to participate in this important fact finding research by answering all questions to the best of your knowledge. The informations generated in this research remains anonymous, confidential and for academic purpose only.

Section A: Personal Information

1. Department.....

2. Designation.....

3. Gender: Male[] Female[]

4. Level of education attained:

University[] Diploma[] Certificate[] Secondary[] Primary[]

5. Working experience: 1 – 5 years [] 6 – 10 years [] 11 and above[]

Section B: General Informations

6. On your experience, what are measures implemented to achieve customer satisfaction? (please mention)

7. In your opinion, does the measures implemented contributes to the performance of DUWASA? Yes[] No[]

8. If Yes in 7 above, what are the contributions of these measures?

9. From your experience, what are the challenges facing implementation of customer satisfaction measures? (please specify)

10. Imagine yourself as an ordinary DUWASA customer. How would you rate services provided by DUWASA? (Please tick)

Very	Fairly	Satisfactory	Unsatisfactory	Extremely
Satisfactory[]	Satisfactory[]	[]	[]	Unsatisfactory[]

Appendix 2: Questionnaire for DUWASA Customers

The objective of this questionnaire is to find out the extent at which DUWASA satisfies its customers. It is true that satisfied customers are the source of DUWASA performance improvement. I would like to request you to participate in this important fact finding research by answering all the questions to the best of your knowledge. The informations generated in this research remains anonymous, confidential and for academic purpose only.

Section A: Personal Information

1. **Street/ward:**.....

2. **Ocupation**.....

3. **Gender:** Male[] Female[]

4. **Level of Education attained:**

University[] Diploma[] Certificate[] Secondary[] Primary[]

5. **Time using DUWASA services:**

1 – 5 years [] 6 – 10 years[] 11 and above[]

Section B: General Informations

6. What are the things you consider to cause your satisfaction with DUWASA services? (Please choose and tick)

i. Adequate pressure and water supply

1.Strongly agree 2.Agree 3.Neither agree nor disagree 4.Disagree5.Strongly disagree

ii. Adequate sewerage services

1.Strongly agree 2.Agree 3.Neither agree nor disagree 4.Disagree
5.Strongly disagree

iii. 24 hours water supply

1.Strongly agree 2.Agree 3.Neither agree nor disagree 4.Disagree 5.Strongly disagree

iv. Reliable sewerage services

1.Strongly agree 2.Agree 3.Neither agree nor disagree 4.Disagree
5.Strongly disagree

v. Fair water tariff

1.Strongly Agree 2.Agree 3.Neither Agree nor Disagree 4.Disagree 5.
Strongly disagree

Vi . Fair sewerage tariff

1.Strongly Agree 2.Agree 3.Neither Agree nor Disagree 4.Disagree 5.
Strongly disagree

vii. Clean and safe water supply

1.Strongly Agree 2.Agree 3.Neither Agree nor Disagree 4.Disagree
5.Strongly disagree

viii. Clear water colour and test

1.Strongly Agree 2.Agree 3.Neither Agree nor Disagree 4.Disagree 5.

Strongly disagree

ix. Accurate meter reading

1.Strongly Agree 2.Agree 3.Neither Agree nor Disagree 4.Disagree 5.

Strongly disagree

x. Quick bill preparation and delivery

1.Strongly Agree 2.Agree 3.Neither Agree nor Disagree 4.Disagree

5.Strongly disagree

xi. Helpfulness, knowledge, courtesy and hospitality of staff

1.Strongly Agree 2.Agree 3.Neither Agree nor Disagree 4.Disagree

5.Strongly disagree

xii. Quick customer complianments handling

1.Strongly Agree 2.Agree 3.Neither Agree nor Disagree 4.Disagree

5.Strongly disagree

xiii. Flexible and in queue bill payments

1.Strongly Agree 2.Agree 3.Neither Agree nor Disagree 4.Disagree

5.Strongly disagree

7. Considering DUWASA services, what is your comments on the following. (Please select)

- i. Do you pay for your services willingly? Yes[] No[]
- ii. Do you pay your bills full and quickly Yes[] No[]
- iii. Do you proper keep DUWASA properties? Yes[] No[]
- iv. Do you timely report infrastructure sabotage,water theft and leakage? Yes[] No[]

9. How would you **rate the services** provided by DUWASA? (please tick)

Very Satisfactory [] Fairly Satisfactory [] Satisfactory [] Unsatisfactory [] Extremely dissatisfactory []

10. If your asked to **recommend** water and sewerage services provided by DUWASA to another person, would you do that? (please tick) **Yes** [] **No** []

Appendix 3: Semi-Structured Questionnaire for Managing Director

I am a researcher from the University of Dodoma, conducting a research titled; “An assessment of customers satisfaction with water and sewerage services.” DUWASA is my case study. I would like to learn from your experience on this study’s topic. The information generated from this study is purely for academic purpose. Confidentiality and anonymity will be observed. Kindly I request your help in fulfilling the objectives of this study by responding to the following questions.

1. Would you please, tell me your experience in managing, water and sewerage services Authorities?

Prompt:

- In the water industry in general
- In the specific water authority

2. Will you please, tell me your education level

- Degree level
- Master level
- Any other level, please specify

3. What are the measures implemented by your organization to achieve customer satisfaction?

Prompt:

- Measures and mechanism implemented to achieve customer satisfaction

4. Do you recognise any contributions of the measures implemented to achieve customer satisfaction on DUWASA performance?

Prompt: Yes or No

5. If Yes. What are the contributions of these measures on the performance of DUWASA?

- On revenue collection
- On customer willingness to pay
- On safe keeping of DUWASA infrastructures
- On customer reporting of water leakage
- On customer loyalty and good word of mouth
- Any other contributions

6. In your capacity as Managing director, does DUWASA cover all Operations and Administrations cost from fees and charges paid by customers? Prompt: Yes or No

- If Yes, what is the contribution of customer satisfaction?
- And what is the extent and mechanism put in place for customer satisfaction contribution to full cost recovery?

7. What are the challenges facing implementation of the measures to achieve customer satisfaction?

Appendix 4:DUWASA Notes to Customers with Unsettled Bills



MAMLAKA YA MAJISAFI NA USAFI WA MAZINGIRA MJINI DODOMA (DUWASA)

Simu: 026 - 2324245

Tovuti: www.duwasa.or.tz

S.L.P. 431

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DODOMA

TAASISI ZENYE MADENI SUGU YA BILI ZA MAJI MJINI DODOMA

Ifuatayo ni orodha ya Taasisi zenye malimbikizo ya madeni ya bili za maji hadi kuishia tarehe 31/10/2012. Malimbikikizo hayo ya madeni ya maji yanazorotesha ustawi wa huduma ya maji mjini Dodoma. Hivyo, Taasisi hizi zinahimizwa kulipa madeni yao haraka iwezekanavyo, vinginevyo zitasitishiwa huduma ya maji mjini Dodoma.

Na.	Jina la Taasisi	Wastani wa Ankara kwa Mwezi (Mil. TSH)	Jumla ya Deni lililolimbikizwa (Mil. TSH)	Wastani wa Umri wa Deni lililolimbiki zwa
1	Jeshi la Polisi	10,500,000.0	141,472,124.4	Miezi 13
2	Jeshi la Magereza	6,100,000.0	67,792,511.3	Miezi 11
4	Jeshi la Wananchi	1,800,000.0	10,576,860.5	Miezi 9
5	Hospitali ya Mkoa	3,800,000.0	48,567,934.8	Miezi 11

6	Baadhi ya Nyumba za Viongozi wa Serikali	4,300,000.0	21,456,789.1	Miezi 5
7	Ikulu ya Makamu wa Rais	1,900,000.0	11,246,471.2	Miezi 6
8	Wizara ya Kilimo na Chakula	450,000.0	4,040,154.0	Miezi 12
9	Shirika la Reli Tanzania	3,100,000.0	15,214,076.4	Miezi 5
	Jumla Kuu	31,950,000.0	320,366,921.7	

Source: DUWASA website-November 2012