Effects of Customer Satisfaction on Water Utility Business Performance: A Case Study of Mbinga Urban Water Supply and Sanitation Authority

Tweve Leticia

St. Augustine University of Tanzania, School of Postgraduate Studies, Dar es Salaam Centre, Tanzania

Abstract— Customer satisfaction is critical in determining why businesses succeed or fail, as well as why they perform at different levels. Yet, the performance of at Mbinga Urban Water Supply and Sanitation Authority (MBIUWASA) for such a long time became very poor due to different problems such as dissatisfaction of customers making them delay paying their bills on time in lieu of unreliable services. This study analysed the effects of customer satisfaction on water utility business performance at Mbinga Urban Water Supply and Sanitation Authority (MBIUWASA). Specifically, the study aimed at examining the influence of customer satisfaction on return on asset (RoA), the relationship between customer satisfaction and return on equity (RoE) and the impact of customer satisfaction on return of investment (RoI). Case study research design was used along with mixed approach. A sample size of 50 customers and MBIUWASA staff was utilized. Simple random sampling was used to select respondents as to get views from them. Tools used included questionnaire, in-depth interview and documentary review. Quantitative and qualitative data were analysed descriptively along with the use of content analysis. Moreover, regression analysis was used to capture the relationship between variables. The study revealed that MBIUWASA customers are not satisfied with the service provided leading to poor performance. The regression analysis indicates that the coefficient of correlation R was 0.840 an indication of positive relationship between variables. Coefficient of adjusted determination R^2 was 0.706 which changes to 70.6% an indication of changes of dependent variable (RoA, RoE and RoI) that can be explained by customer satisfaction. The residual of 29.4% can be explained by other variables beyond the scope of the current study. The study concluded that MBIUWASA needs to find out ways of investing much on water sources to be able to supply water to the large number of customers while adhering to quality service provision.

Keywords— Customer Satisfaction, Business Performance, Water Utility, Return on Asset, Return on Equity, Return on Investment

I. INTRODUCTION

Access to safe and clean water has been essentially a universal human right from the time where human existence depends on the availability of water (Johnson and Karley, 2018). It is stated that, there is a direct relationship between livelihood and well-being of human beings alongside the supply of clean water (Leninkumar, 2017). Moreover, satisfaction on water service provision to people is an overall attitude or behaviour towards the client

on the service provider and an emotional response to the difference in the achievement of a desire, need or goal between what they expect and what they receive (Chen, 2018).Customer satisfaction is one of the important issue for the successful organisation or company in the future and getting the goals on targets prepared through strategy planning and SWOT (strength, weaknesses, opportunity and threat) analysis when the organisation has the plan for the sale's size and calculate it between today and

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yesterday(Ashraf, 2017).Customer satisfaction on water utility provides a platform for authorities to enhance relationships with their customers thus enabling the authorities to achieve their objectives for long-term success (Leninkumar, 2017).

Customer satisfaction in water supply plays avariety of critical functions in the long-term viability and profitability of businesses where, customers are likely to be satisfied when the products and services are offered by competent staff with quality and affordable price as well as delivered on time and speed (Lakau, 2017). According to Balaj(2015) satisfied customers are most likely to become loyal something that can be translated into higher profit organizations. As such, the relationship between customer satisfaction and repurchase intentions has been examined with results implying that satisfied customers are more likely to repurchase while enabling organisations to attain their return on asset, return on equity and return of investment (Chen, 2018).

Moreover, WHO (2017) stated that despite the importance of providing safe and reliable drinking water for poverty reduction and social development, relatively little is known regarding influence of customer satisfaction on return on asset, equity and investment respectively in developing countries, particularly in Sub-Saharan Africa. Since then, access to reliable, clean andsafe water has remained a global challenge among public water supply utilities especially in developing countries. It is globally estimated that more than 884 million people have no access to improved water, virtually all of them come from developing countries and 84% of them live in rural area (WHO, 2017).

A study conducted by Kayanga (2017) on bill payment behaviour in urban water services using empirical data from Uganda obtained through a cross-sectional survey in eleven major towns of Uganda established that customer perceptions influence bill payment behaviour of water utility customers. The findings further indicated that the cost of water services was expensive and unfair to low-income earners. Therefore, in order to improve cost recovery, utility managers have to work towards improving customer satisfaction and perceived amount of money for the services rendered.

The water sector status report (2019) indicates that, water supply and sanitation in Tanzania is characterized by decreasing access to improved water sources (especially in urban areas) where steady access to some form of sanitation (around 83% since the 2010) are accompanied with intermittent water supply and generally low quality of service. As per Lyimo and Theobard (2022) many utilities are barely able to cover their operation and maintenance

costs through revenues due to low tariffs and poor efficiency. According to WHO(2015) water legislation was one of the instruments used to streamline social behaviour towards water resources management. Within the context of its poverty reduction efforts, many governments have made commendable strides in developing the water and sanitation sector. In 2002 the National Water Policy (NWP) was formulated in Tanzania with a mission of integrating sustainable management, development and use of water resources(Lyimo and Theobard, 2022).

Customer satisfaction tends to be a subject of extraordinary interest to associations including those in public sector such as MBIUWASA. Moreover, the challenges of water supply in Mbinga District are not only adequacy but it has many complicated physical, technical, social, economic and environmental aspects. Despite of the efforts done by MBIUWASA to enhance the situation, its customers still whine that the quality of the services offered is very poor and yet insufficient. Yet, the spatial and seasonal patterns of the service have other problems such as some settlements have sufficient supplies while others have to wait for days and weeks. The bore holes yield also shows fluctuation from time to time, especially during the dry season where the decrease and drying patterns are observed. The management puts much emphasis on revenue collection whilst the organization has a mission "my customer, my employer" but its fulfillment and implementation is very poor leading to poor performance of the water utility. Yet there are no studies done to analyse the effects of customer satisfaction on water utility business performance in MBIUWASA. Therefore, this study is an attempt to fill the knowledge gap regarding the effects of customer satisfaction on RoA, the relationship between customer satisfaction and RoE, and the impact of customer satisfaction on RoI at MBIUWASA.

II. LITERATURE REVIEW

Business researchers highlight unsatisfactory customers' cases on public services that are due to poor customer care among the government staff and lack of regular government support to improve infrastructure and services. Customer satisfaction is the extent of which service perceived matches the customer expectation; and a customer is said to be satisfied if the service received is equal or slightly above what is expected to be received while a satisfied customer will keep buying a business service or product all the time (Leninkumar, 2017).

Brown and Johnson (2015) conducted a study that focused on the influence of customer satisfaction on return on investment in America. Customer satisfaction was one of

the frequently measured marketing constructs within major organizations and regularly collecting data on the extent to which their customers were satisfied. This level of interest was perhaps unsurprising given that it was a basic principle of marketing that business performance was enhanced by satisfying customers.

Johnson& Karley (2018) in their study analyzed the customer satisfaction as influenced by service quality in Liberia taking Liberia Revenue Authority as a case study. The researchers needed to evaluate how customers perceive the services and the extent on which customer satisfaction is influenced by service quality. A qualitative data was collected through unstructured interview. The results revealed that customer satisfaction was much influenced by price, responsiveness, empathy and assurance. The researchers concluded that the introduction of digital system of collecting taxes would increase revenue collection to boost the organisations and country economy in general.

Odulele (2015) conducted a study on the challenges facing customer satisfaction on water utility in Nigeria. Customer satisfaction was a good measure of the quality of service rendered by an enterprise; hence the perception of residential customers' satisfaction with public water provision in Ojota was explored and obtained from the administration of a set of structured questionnaires to 400 households and by using the systematic sampling technique. Data was analyzed using percentages and a customer satisfaction index (CSI) model. The results revealed that the calculated CSI was 2.54 points on a 5-point scale, which means that public water provision in Ojota was perceived as fairly satisfactory by the residential customers. In addition, it was found that only 12.21% of the customers were willing to pay for water bills, based on their overall perception of the services of the Lagos Water Corporation (LWC) showing that the service at LWC to its customers was inadequate. It was recommended that the LWC should undertake a general overhaul of its operations and improve on customer services, which may improve customers' willingness to pay for water bills and help the utility to improve on cost recovery and sustain adequate services to its customers.

A study conducted by Lyimo and Theobard (2022) at Arusha Urban Water Supply and Sanitation Authority established sustainable access to safe drinking water and basic sanitation for urban population. This study sought to examine the influence of customer relationship management on customer satisfaction in AUWSA. Findings unveiled that information technology promotes effective customer service delivery, reduces customer complaints, paper work and incidence of wrong entries in the operational activities of AUWSA. Also, the findings revealed that staff competence guides management in improving customer services and incorporating specific core competencies in selection process while helping the employees to provide quality services. Moreover, the findings depicted that management plays a vital role in business operations efficiency and this enhances customer services and the organization's management structure is centred on promoting customer satisfaction with services offered. The researcher recommends that a study should be carried out to establish the influence of customer relationship management on customer satisfaction in the other service industries in Tanzania.

Customer dissatisfaction on government services was also highlighted by Kiangi (2015) who studied electrical billing system and took TANESCO Ilala as a case study. A data for descriptive research were gathered using questionnaires and analysis were data by SPSS. Results revealed the availability of two types of payment systems that were prepaid and payment after use. In one way or another, both types of customers lament on high bills, others were not satisfied with payment due to difficulties on network issues and others lamented that they have to travel over long distances to TANESCO offices to look for solution related to billing payment system. It was recommended that more efforts are needed to solve customer related issues such as minimizing bills cost.

2.1 Conceptual Framework
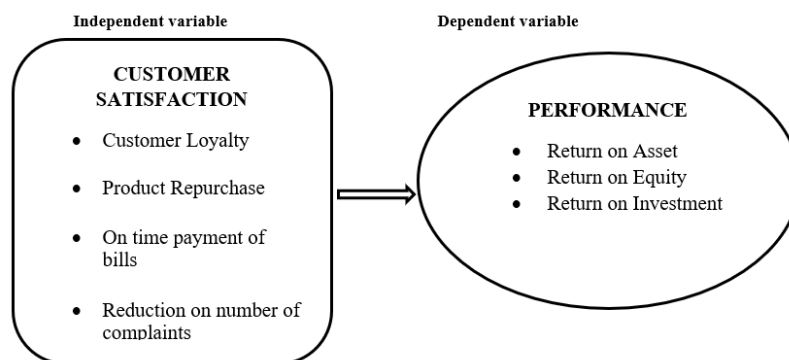
Fig.1:Conceptual framework indicating proxies of Customer Satisfaction and Business Performance

2.2 Operationalization of Study Variables

2.2.1 Return on Asset (RoA)

Return on assets (RoA) is a financial ratio that shows the percentage of profit a company earns in relation to its overall resources. It is commonly defined as net income divided by total assets. The formula for RoA = Net Income / Total Assets. Net income is derived from the income statement of the company and is the profit after taxes. The assets are read from the balance sheet and include cash and cash-equivalent items such as receivables, inventories, land, capital equipment as depreciated, and the value of intellectual property such as patents. The RoA provides information about how much profits are generated on average by each unit of assets. Therefore, the RoA is an indicator on how efficiently a bank is being run (Petersen& Schoeman, 2008).

2.2.2 Return on Equity (RoE)

Return on equity (RoE) is a ratio that provides investors with insight into how efficiently a company (or more specifically its management team) is handling the money that shareholders have contributed to it. RoE = Net profit after taxes equity capital. In other words, it measures the profitability of a corporation in relation to stockholders' equity. The higher the RoE, the more efficient a company's management isat generating income and growth from its equity financing. From this relationship it follows that the lower the equity capital, the higher the RoE, therefore the owners of the bank (equity holders) may not want to hold too much equity capital (Johnson & Karley, 2018).

2.2.3 Return on Investment (RoI)

RoI is an organisation's generated transactions. RoI can be used as a rudimentary gauge of an investment's profitability. Return on investment (RoI) is calculated by dividing the profit earned on an investment by the cost of that investment. For instance, an investment with a profit of $100 and a cost of $100 would have a RoI of 1, or 100% when expressed as a percentage. The calculation itself is not too complicated, and it is relatively easy to interpret for its wide range of applications. If an investment's RoI is net positive, it is probably worthwhile (Lakau, 2017). Moreover, RoI fails to reflect the time value of money, and it can be difficult to meaningfully compare RoIs because some investments will take longer to generate a profit than others. For this reason, professional investors tend to use other metrics, such as net present value (NPV) or the internal rate of return (IRR) rather than intangible assets.

2.2.4 Customer Satisfaction

Customer satisfaction is defined as a measurement that determines how happy customers are with a company's products, services and capabilities. Customer satisfaction information can be obtained through surveys and ratings to help a company or organisation determine how to best improve or change its products and services. An organization's main focus must be to satisfy its customers. This applies to industrial firms, retail and wholesale businesses, government bodies, service companies, nonprofit organizations, and every subgroup within an organization (Ashraf, 2017).

2.2.5 Business Performance

Business performance on water sector is defined as the ability of the water utility to effectively manage its financial obligations and measured by two variables such as collection ratio (CR) and payment time (PT) (Chen, 2018). These performance indicators are related to the billing and collections function of water utilities and are important because they determine the level and timing of cash holdings. These indicators therefore affect a utility's ability to meet its financial obligations (Emmanuel, 2013). Indicators of business performance are like payment time (PT) and how long it will take for the customer to make payment to the utility after the bill has been issued and so measures the speed with which utilities collect their bills. For water utilities, higher CR and lower PT values indicate better performance (Kotane& Kuzmina, 2012).

III. METHODOLOGY

The study was conducted at Mbinga District at Mbinga Urban Water Supply and Sanitation Authority (MBIUWASA). A case study research design was adopted along with mixed approaches where questionnaires, in-depth interview and documentary review aided as tools to collect data. The logic behind selecting this research design lies on the following grounds: First, the examination of data was conducted within the context of its use that was, within the location in which the activity takes place, in this study the data was expected to help to get a close in-depth and first-hand understanding of the situation(Gilbert, 2008). Therefore, in this study the researcher expected detailed information on analyzing the effects of customer satisfaction on water utility business performance. Thus, both qualitative and quantitative data were used. A sample size of 50 respondents was used that included employees working with MBIUWASA and customers sampled through simple random and purposive sampling techniques. Quantitative and qualitative data were analysed descriptively along with the use of content

analysis respectively. Moreover, regression analysis was used to capture the relationship between variables.

IV. RESULTS AND DISCUSSION OF FINDINGS

The results and discussion of findings focus on analysing the effects of customer satisfaction on water utility business performance at MBIUWASA. Specifically, the results and findings provide the answers to the examination of the influence of customer satisfaction on RoA, assessment of the relationship between customer satisfaction on RoE and the assessment of the impact of customer satisfaction on RoI at MBIUWASA as hereunder.

4.1 Influence of Customer Satisfaction on Return on Asset

The first objective examined the influence of customer satisfaction on RoA. Questionnaires were self-administered while in-depth interview being held among respondents. The results in Table 1.1 illustrate as follows.

Table 1.1: Influence of Customer Satisfaction on RoA

		Strongly agree	Agree	Neutral	disagree	Strongly disagree	Mean
Make it easy for customers to contact the organization for assistance	Frequency	0	0	0	0	50	
	Percent	0%	0%	0%	0%	100%	1.12
Communicate and engage proactively with customers	Frequency	0	0	2	20	28	
	Percent	0%	0%	4%	40%	56%	2.00
Maintain a focus on delivery and logistics	Frequency	22	14	8	5	1	
	Percent	44%	28%	16%	10%	2%	2.38
Customers are respected and treated equally	Frequency	14	12	10	8	6	
	Percent	28%	24%	20%	16%	12%	2.61

Source: Field data, 2022

The results in Table 1.1 reveal that 100% of respondents strongly disagreed that MBIUWASA could not make it easy for its customers to contact the organisation for assistance in case of lack of service or the other something that resulted into poor collection of water bills as a source of income thereby diminishing its profitability and the ability to serve its customers. This stance resulted into dissatisfaction among customers. The affirmations above concur with Chen (2018) who reported that, when an organisation misses contact with its customers, the possibility to earn income becomes minimal and customers are able find alternatives services thereof.

The in-depth interview with key informant revealed the following;

> *There has been a communication breakdown between MBIUWASA and its customers when service provision has to prevail. This situation results into non service provision without information, thus causing unnecessary challenges that discourage customers in accessing the service. In lieu of that, MBIUWASA's return on asset become jeopardized (KI, 1)*

The implication of the findings above shows that if water is provided well to the customers and if they can solve customers' complains on time MBIUWASA can be able to increase the number of customers who would pay for their bills on time to add assets and enable operations in an easy way. Therefore, with easy contact and assistance to customers, MBIUWASA would be in position to earn income and operate well while attaining its goals.

On the other hand, the results in Table 1.1 show that 56% of respondents strongly disagreed while 40% of respondents disagreed that there has not been an avenue for MBIUWASA to communicate and engage proactively with customers something that resulted into poor customer service. It was found that, has there been good communication that is accompanied with proactive customer engagement at MBIUWASA, customers would be in position to accommodate the service in a good manner. The statement above is in agreement with Lyimo and Theobard (2022) who reported that in most cases, the water authorities in Tanzania have poorly serving their customers without enhancing their customer relation base something that result into inability to efficiently collect

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water tariffs among customers thereby affecting their RoA to cover their operations and maintenance activities. Moreover, 4% of respondents were neutral on the matter.

One of the key informants was of the following view;

> *There has been poor communication between MBIUWASA and its customers something that leads to non-proactive engagement when challenges encounter customers. In such situations, customers become frustrated by missing services. In lieu of that customer dissatisfaction on the service prevail (KI, 2)*

Furthermore, the results in Table 1.1 show that 44% of respondents strongly agreed while 28% of respondents agreed that there have been traces at MBIUWASA to maintain a focus on delivery and logistics to enable customer obtain the services as needed although such initiatives have been encountering setbacks in terms of inadequate funding. The statement above concurs with Odulele (2015) who asserted that inadequate funding has been a challenge among water supply authorities something that become unable to fulfill their obligations thus rendering poor services to customers. This has resulted into customers' dissatisfaction that leads to earning little in terms of asset accumulation. Yet, 16% of respondents were neutral on the matter; 10% were in disagreement and 2% strongly agreed that MBIUWASA does not maintain a focus on delivery and logistics towards customer satisfaction.

One of the key informants was of the following view;

> *Although, MBIUWASA has been focusing on delivery and logistics enhancement towards*

provision of adequate services; such strategies are not attained due to poor customer focus (KI, 3)

The statement above concurs with Lakau (2017) who stated that with customer dissatisfaction in service provision, the organisation cannot maintain its profitability in terms of RoA as the expectations of the customers are not met.

Finally, the results in Table 1.1 show that 28% of respondents strongly agreed while 24% of respondents agreed that at MBIUWASA customers are respected and equally treated towards service provision something that aim at maintaining customer superiority. The findings revealed that although that notion has been stated, its fulfillment has been a challenge. Yet, 20% of respondents were undecided, 16% of respondents disagreed while 12% of respondents strongly disagreed on the matter. The statements above are in concurrence with Leninkumar (2017) who reported that with good and reliable supply of water, enhancement of human livelihood and wellbeing is attained and vice versa. What was found at MBIUWASA is that the respect and treatment observed became pseudo thus not reflecting the reality in order to achieve RoA that could enable it fulfill its obligations towards customer satisfaction.

4.2 Relationship between Customer Satisfaction and Return on Equity

The second objective assessed the relationship between customer satisfaction on RoE. Questionnaires were self-administered while in-depth interview being held among respondents. The results in Table 1.2 illustrate as follows.

Table 1.2: Relationship between Customer satisfaction and RoE

		Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Inadequate financing from the water sector	Frequency	22	12	7	6	3	
	Percent	44%	24%	14%	12%	6%	3.31
The sources of water connections within households are quite low.	Frequency	17	16	10	5	2	
	Percent	34%	32%	20%	10%	4%	2.19

Source: Field data, 2022

The results in Table 1.2 show that 44% of respondents strongly agreed while 24% of respondents agreed that MBIUWASA could not achieve customer satisfaction and RoE due to inadequate financing from the water sector. This inadequacy emanates from the reliance of external support from the government or donors to support water supply projects as water sector continued to experience

low levels of sustainability and stagnation in levels of access to water for domestic use in rural areas. Moreover, 14% of respondents were undecided, 12% disagreed and 6% strongly disagreed on the matter. This is in line with Kayanga (2017) who asserted that with poor rural dwellers economic purchasing power, bill payment has been an obstacle towards accessing water services. Thus,

authorities serving such people have been in difficulties to enhance service and attain customer service satisfaction something that render these authorities achieve less in terms of return on equity because their net profit after taxes have been low to enable the facilitation and provision of quality water services.

One of the key informants was of the following view.

> *MBIUWASA has fewer water users who are able to pay for the bills. Also, it has been relying on external support that is in many cases been inadequate to enable the facilitation of water operations. Therefore, to have a good return on equity and satisfy customers has been difficult to achieve (KI, 4)*

On the other hand, the results in Table 1.2 show that 34% of respondents strongly agreed while 32% of respondents agreed that the sources of water connections within the households served by MBIUWASA are quite low. This situation makes the authority to serve the customers in difficulties resulting into dissatisfaction. Yet, 20% of respondents were undecided, 10% disagreed while 4% of respondents strongly disagreed on the matter. The disagreement emanate from the inadequate connection equipment and materials needed to connect many customers for the service provision.

One of the key informants was of the following view;

> *The problem of MBIUWASA is that it cannot count on equity at the end of year due to water tariffs non-payment. This is occurring and rising over time while making it unable to purchase materials and equipment which could be used to*

> *reengineer water systems like changing outdated pipelines as needed (KI, 5)*

The above affirmations concur with Johnson and Karley (2018) who asserted that access to clean water as a human right goes with the authority's ability to satisfy customers who are able to pay for the services rendered thereby attaining return on equity as well. Whereas service provision is expected to be paid for rates that ensure full cost recovery, consideration must be made for provision of water services to the poor at rates they can afford. Therefore, it was found that according to the service providers, current tariff rates are low and thus not enough to earn enough revenue for development and maintenance of effective urban water supply systems. This proves that, there is great relationship between customer satisfaction and return on equity of MBIUWASA. The implication for this is that the authority needs to conditions which can make customers fit their tariffs through controlling the quality and adequacy of water supplied to customers, control of the pressure and leakages; setting fair water supply including provision of all services and enhancing customers' education, communication and managing water demands.

4.3 Impact of Customer Satisfaction on Return on Investment

The last objective assessed the impact of customer satisfaction on RoI. Questionnaires were self-administered while in-depth interview being held among respondents. The results in Table 1.3 illustrate as follows.

Table 1.3: Impact of Customer Satisfaction on RoI

		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean
Overall service quality has been enhanced	Frequency	20	20	10	0	0	
	Percent	40%	40%	20%	0%	0%	2.22
Time taken to solve customer's queries is too long	Frequency	19	11	9	9	2	
	Percent	36%	22%	18%	18%	4%	3.94
Knowledge of customer service has not improved	Frequency	50	0	0	0	0	
	Percent	100%	0%	0%	0%	0%	4.82

Source: Field data, 2022

The results in Table 1.3 show that 40% of respondents strongly agreed while 40% of respondents agreed that the overall service quality at MBIUWASA has been enhanced something that reflects the thirst for customers served to

enable the achievement of the return on investment that needs to be attained. Moreover, 20% of respondents were undecided on the matter. The results imply that the water services committed by MBIUWASA aim at ensuring

customer's satisfaction through services rendered such as meter accuracy, meter reading and billing, all time emergency services and call center and customer education. The statement above is in agreement with Brown and Johnson (2015) who reported that customer satisfaction is related to return on investment due to customers' ability to manage the service rendered something that may aid an authority to recover its investment funds.

One of the key informants was of the following view;

> *In order for MBIUWASA to achieve its profitability, investing on new distribution lines has been vital. Moreover, MBIUWASA has invested in building new water tanks, buying pumps for supporting water pressure and formulation new sources of for the satisfaction of its customers (KI, 6)*

On the other hand, the results in Table 1.3 show that 36% of respondents strongly agreed while 22% of respondents agreed that at MBIUWASA the time taken to solve customers' queries is too long. This has been associated with the non-attendance of customers in time and the inability to solve the alarming challenges promptly. The statement above concurs with Kayanga (2022) who stated that when a water supply authority does not attend its customers in time causes dissatisfaction of service among customers thereby enabling the authority to have little performance. Moreover, 18% of respondents were undecided on the matter while the other 18% of respondents were in disagreement with 4% strongly

disagreeing. Those who disagreed were in opinion that, there have been initiatives to enhance the services something that provide an avenue for better performance in the future.

Furthermore, the results in Table 1.3 show that 100% of respondents strongly agreed that the knowledge of customer service at MBIUWASA has not improved. This implies that much effort has not been put to enable employees accommodate customers' queries in a proactive manner while adhering to guidelines towards quality services. The statement above concurs with Lakau (2017) who stated that when organisations lack customer service knowledge, the usage of resources and institutional capacities are found to be lackly utilised causing little copping with shocks in the provision of water.One of the key informants had the following view:

> *There has been little association between the perceived service quality and return on investment at MBIUWASA leading to poor customer satisfaction thus a need for improvement is vital in making new investments for more quality service provision (KI, 7).*

4.4 Multiple Regression Analysis Results

The regression analysis findings ought to indicate its R Square variable implying that, independent variables explain the percentage of the model variations. The results indicate that, the model was statistically significant at ($p<0.05$). Table 1.4 shows the analysis.

Table 1.4: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig
1	.840[a]	.706	.687	0.241	0.000

The regression analysis indicates that the coefficient of correlation R was 0.840an indication of positive relationship between variables. Coefficient of adjusted determination R^2 was 0.706 which changes to 70.6% an indication of changes of dependent variable (RoA, RoE and RoI) that can be explained by customer satisfaction.

The residual of 29.4% can be explained by other variables beyond the scope of the current study. This is in concurrence with Davis et al (2016) who reported that changes in RoA, RoE and RoI is the outcome of customer satisfaction.

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Table 1.5:Regressions Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.167	0.108		10.765	0.000
	Return on Assets	0.174	0.027	0.592	6.547	0.000
	Return of Equity	-0.088	0.029	-0.313	-3.059	0.004
	Return on Investment	0.145	0.032	0.445	4.538	0.000

Regression coefficients on Table 1.5 suggest that, all variables were significant predictors ($p<0.05$) of the model. This informs that one unit increase of customer satisfaction explains **0.174** increase in RoA. A decrease in one unit of customer satisfaction suggests -**0.088** unit decrease in RoE. Also, one unit increase of customer satisfaction explains **0.145**increase in RoI at MBIUWASA performance.

The following regression model was used

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Then;

$Y = \beta_0 + RA\beta_1 + RE\beta_2 + RI \beta_3 + \varepsilon$

Whereby: Y = Performance of MBIUWASA

β_0 = Constant

β_1 = regression coefficient of RoA

β_2 = regression coefficient of RoE

β_3 = regression coefficient of RoI

RA = Return on Assets

RE = Return on Equity

RI = Return on Investment

ε = error term

Hence,

$Y = 1.167 + 0.174\beta_1 + (-) 0.088 \beta_2 + 0.145 \beta_3 + \varepsilon$

V.   CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Based on study findings objective one examined the influence of customer satisfaction on RoA, objective two assessed the relationship between customer satisfaction on RoE and objective three assessed the impact of customer satisfaction of RoI. It was found that customer satisfaction has a significant effect on RoA, RoE and RoI at MBIUWASA.

The results show that MBIUWASA has done little to influence customer satisfaction towards achieving RoA something that would enable it fulfill its obligations. It was found that MBIUWASA could not make it easy for customers to contact it and obtain assistance; enhance communication and proactive engagement to customers, could not at a higher level maintain focus on delivery and logistics for the enhancement of services while the respect and treatment shown could not bring about spillover effects on customers' satisfaction something that resulted into poor bills payment and service provision; thus non-attainment of return on asset.

On the other hand, the results show that there has been inadequate financing from the water sector something that resulted into inadequate fulfillment of customers' needs from the fact that, the customers' ability to pay water bills has been questionable. Yet, the sources of water connections to households served by MBIUWASA seemed to be quite low to enable quality service provision.

Similarly, the results show the overall service quality enhancement although the time taken to solve customers' queries has been too long. Moreover, knowledge of customer service has not improved from the fact that employees have been reluctant to adhere to customer service guideline while working in a style of business as usual something that necessitate poor return on investment. Therefore, findings show that while Tanzania is endowed with enormous natural water resources, access to clean and safe water remains a great challenge while suggesting performance achievements to be obtained through improvement in revenue collection, reduced customer's complaints, strengthening customer willingness to pay, change in the traditional behaviour regarding water as a God's gift to human being, instead of regarding it as any product that incurs cost in its production.

5.2 Recommendations

To the authority; from an economic perspective, there is a need to couple data and information on water resources and their use with indicators of growth in various economic sectors in order to assess its role and contribution in terms of economic development, and to garner a better understanding of its consequences on the resource and different user.

To the society; in the context of sustainable development, where water is often a key driver – and a potential limiting factor – for economic growth, human well-being and environmental health, protecting water sources and the community is advised for taking care of water sources while not undermining water infrastructure, as it is too costly to get it destroyed.

Recommendations for further research; as the study focused on analyzing the effects of customer satisfaction on water utility business performance at MBIUWASA;

It is advised that studies be done of the effects of customer satisfaction on water supply authorities' performance in other authorities in rural areas.

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