

**ZAWA EFFICIENCY IN WATER SERVICE DELIVERY; A CROSS SECTIONAL STUDY IN ZANZIBAR.**

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**ABSTRACT.**

**Background:**

This study aims to examine ZAWA efficiency in water service delivery in Zanzibar.

**Methodology:**

It used a cross-sectional study of how and to what extent the quality of service can be influenced by recipient participation in service provision. It used checklist questions and structured questionnaires to collect the required information from institutions and respondent households respectively these data were analyzed using an Excel computer program.

**Results:**

From the study results majority (61%) of respondents, it was evident that ZAWA customers were mainly participating in service provision by paying their monthly water bills that help to sustain service provision with the majority of them receiving water as per their daily requirements. The majority of ZAWA customers were satisfied with the quantity of water as per their daily demand and therefore were more likely to willingly pay their monthly water bill. In addition, a good proportion of customers had a good relationship with the service provider and therefore they can be categorized as loyal customers.

**Conclusion:**

As regards the quality of water service offered by ZAWA as depicted by satisfaction with the quantity of water as per daily demand of the respective respondent households; it can be concluded that a high proportion of customers were receiving water from ZAWA to quantity that meet their daily demand.

**Recommendation:**

Thus, it is recommended that ZAWA conduct rigorous mass sensitization campaigns to get more people to understand the importance of paying their monthly water bills for the sustainability of water supply services in Zanzibar. However, this should go together with increasing service coverage and efficiency in water service delivery, good management of water resources, and supply networks.

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**Keywords:** *ZAWA efficiency, Water service delivery, Zanzibar*

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**BACKGROUND OF THE STUDY.**

Water is part of the life-support systems therefore; its importance is beyond doubt. In the last two decades, the concern related to the management of this resource has been the subject of several global conferences and several water organizations have emerged. In March 1998 the final declaration of the International Conference on Water and Sustainable Development recognized that a quarter of the world population did not have access to safe drinking water (UNEP, 2019).

Despite the good intentions of the government and donor agencies, most of the constructed water tanks and boreholes 1970s and 2000s failed to achieve sustainability. The problem of water scarcity is still evident in many parts

of Zanzibar (Lee 2017). This was due to several factors, among them being the practice of Supply Driven Implementation Approach (SDIA). In this approach, the government became the sole initiator, planner, and provider of water service interventions. Furthermore, the system was so centralized in such a way that decisions made on water service allocations were externally oriented. In Zanzibar all water works belonged to the central government, however, the outcome of this trend of the affair is due to a lack of commitment to recipients, as far as issues of water services were concerned (Fosto et al,2019), Therefore, water scheme operations and maintenance were seriously affected. Therefore, this research was set to examine ZAWA efficiency in water service delivery in Zanzibar.

**METHODOLOGY.**

**Research design.**

The study was cross-sectional and used quantitative approaches. The quantitative approach was used with simple measures such as percentages of responses on recipients' participation recipients on the quality of water

service delivery in Zanzibar also tables and graphs were used to show the results.

**Study Sample and Sampling Technique.**

The study population consisted of a population size of 100 respondents who were clients/consumers from each village, Health Officers, ZAWA Officers, Water District Officers, etc., and finally, Water Regional officers.

**Table 1: Study Sample.**

Category	Frequency	Sampling technique
Clients/consumers	89	Simple Random Sampling
Healthy officer	2	Purposive
ZAWA officers	4	Purposive
Water officers	2	Purposive
Water regional officers	3	Purposive
Total	100	

Source: ZAWA

**Sampling Technique.**

Savin-Baden and Major, (2019) noted that a sampling technique is a process of selecting a sample to be representative of the whole population. Sample technique is a technique or a procedure that the study adopted in selecting items for a sample (Bartlett *et al.*, 2021). This study employed both simple random and purposive sampling to get representatives of the population. Simple random sampling was used to identify consumers from each village while purposive sampling was used to select key informants from ZAWA Officers.

**Secondary Data.**

Data that have already been collected and analyzed by others, mostly found in books, newspapers, journals, magazines, and the internet are also used in this study. This helped the study is not confronted with the problems that may usually be associated with the collection of original data.

**Sample Size.**

Due to the number of populations in the study area, the sample was interviewers in this study eighty (80).

**Primary Data.**

So, this study used primary data to assure the accuracy of this research. Primary data can be collected in several ways like interviews, questionnaires, observation, surveys as well as focus group discussions. That is to say, primary data was collected by the study of him or herself in the field. The respondents asked questions while the study collected the responses on what was asked, which can be verbal or written. In this study, the study asked questions related to the "recipient participation of water quality service delivery" in improving water supply services and respondents provided answers according to what was asked.

**Data Source Collection.**

The study used both primary as well as secondary data to accomplish the task of collecting relevant information. The method applied was documentary review and reports review for secondary data and primary data observation and a questionnaire was employed in collecting the data.

**Data collection instruments.**

These are fresh and direct information from sources (using survey methods) like Observation, Questionnaires, and interviews. These kinds of data can be qualitative or quantitative.

### **Field Observation.**

There were field observations with informal discussions with recipients at their various water sites and assets. This method of data collection was applied for a clear and critical observation of ZAWA activities like digging, pipelines, and connecting water lines. Information flow, and recipient responses. The study took time to spy the site areas around three wards and see the activities around, it also involved taking some pictures and recording different data, like the number of recipients participating in activities per day.

### **Questionnaires.**

Questions were distributed to a targeted population who were more concerned with cite/field activities. There were two types of questions in the questionnaire, close-ended and open-ended questions. Close-ended questions will implore specific information and open-ended questions allow views and explanations from service recipients' respondents. The questionnaire enabled the study to get information on ZAWA's daily activities and the level of the recipient's participation. This instrument was used because respondents have adequate time to give well-thought answers and respondents who are not easily approachable can also be reached conveniently.

### **Focus Group Discussion.**

A focus group is a group of interacting individuals having some common interest's characteristics. It is brought together by a moderator, who uses the group and its interaction as a way to gain information about specific or focused issues (Kothari 2014). Normally the focus group discussion consists of 5-8 people who are unfamiliar to each other. They are only selected because they have certain characteristics in common that relate to the topic of the focus group. To get unbiased information, two groups were formed with a separate sex to enable members to be free to provide accurate information. It was conducted several times with a similar type of respondents to identify trends and patterns in perception.

### **Interview.**

An interview is a conversation between studies with his/her respondents; it is particularly useful for getting the story behind the participant's experiences. The interviewer can pursue in-depth information about the topic. The advantage of using interviews is that it is quite flexible and adaptable and can be used by many people. Through interviews, the study learned more about respondents through facial expressions and body language which in one

way or another correspond to the responses they provided. In this study, the interview was used on key informants.

### **Data analysis and interpretation.**

Quantitative data were used. Quantitative data from direct respondents also was analyzed by using Microsoft Excel to obtain tables, graphs, and computations. Data was developed, to substantiate descriptive qualitative information that was obtained through respondents.

### **Testing Validity and Reliability.**

#### **Validity.**

Internal Validity in this research was achieved through proper identification of the research problem, building a theoretical 54 perspectives on the various motivation programs, as well as using secondary information. External Validity was achieved through proper identification of the research problem, following the scientific research process, and the use of different research methods. Construct validity is concerned with the validity of relationships between theoretical constructs variables operationalization and the conclusions to be drawn. (Kothari, 2014). To achieve this, a systematic research process was adopted from designing the research problem and undertaking the research process.

#### **Reliability.**

Reliability means the consistency with which repeated measures produce the same result across time and observers. It denotes how consistent a research producer or instrument is Reliability is also concerned with the question of whether the results of a study are repeatable. Therefore, it implies the stability or dependability of an instrument or procedure to obtain information. Furthermore, the stability and equivalence aspect of the reliability of this research study was achieved by carefully replicating the research methods. This was conducted by pre-testing different data collection methods such as questionnaires and interviews.

### **RESULTS.**

#### **Respondent Profile.**

To get a clear picture of the respondents, it was important to find out from the respondents their age, gender, and educational level. These specific characteristics would affect their perception and hence participation in the study, because individual responses or perceptions on some issues may be influenced by these parameters. The data involves

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respondents' gender; age and level of education as presented:

were found to be between 18 and 25 years old. On the other hand, 25 percent of the respondents were found to be in the age range of 25 to 45 years. The same proportion was also found for the respondents aged between 46 to 60 years. This implies that the majority of respondents were the working age and therefore capable of meeting their financial obligations of sharing the cost of water service delivery.

**Age of the Respondents.**

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It was critical to know the age distribution of the respondents to determine whether they were still productive or not. Table 2 illustrates the age distribution of the respondents; whereby 30 percent of the respondents

**Table 2: Distribution of respondents by age categories.**

S/N	Age	Frequency	Percentage
1	18- 25 years	30	30.3
2	26-45 years	25	25.3
3	46-60 years	25	25.3
Total		80	100

Source: Fieldwork, 2022

**Gender of Respondent.**

The respondent's gender sought to know and understand the composition of respondents in terms of gender.

**Table 3: Distribution of respondents by gender.**

S/N	Gender	Frequency	Percentage
1	Females	49	61
2	Males	31	39
Total		80	100

Source: study 2022

As depicted in Table 3, a majority (61%) of respondents, were females. Whereas, their male counterparts were found to be nearly 49 percent. The findings indicate that, as many women have multiple household roles and care works. Females are primarily responsible for fetching water for household uses. Therefore, it is more likely to find them actively participating in water service delivery activities than male members of the household.

**Respondents' Education.**

The level of education determines one's reasoning capacity and conceptual ability. This contributes to an individual's ability to be more effective in his/her activities.

**Table 4: Responses on the Education level of respondents.**

S/N	Education	Frequency	Percentage
1	Secondary	42	52.5
2	College	15	18.75
3	University	23	28.75
Total		80	100

Source: Field data (2022)

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The study results depicted in Table (4) indicate that respondents who attained secondary education were almost half of the total number of respondents, while those with college and university education constituted nearly 19 and 29 percent respectively. The higher proportion of respondents can be explained by the fact that secondary education level is compulsory in Zanzibar. Thus, it is impressively, the majority of the respondents are found to be educated which makes it easy for the government to implement and convince recipients to adopt a cost-sharing approach.

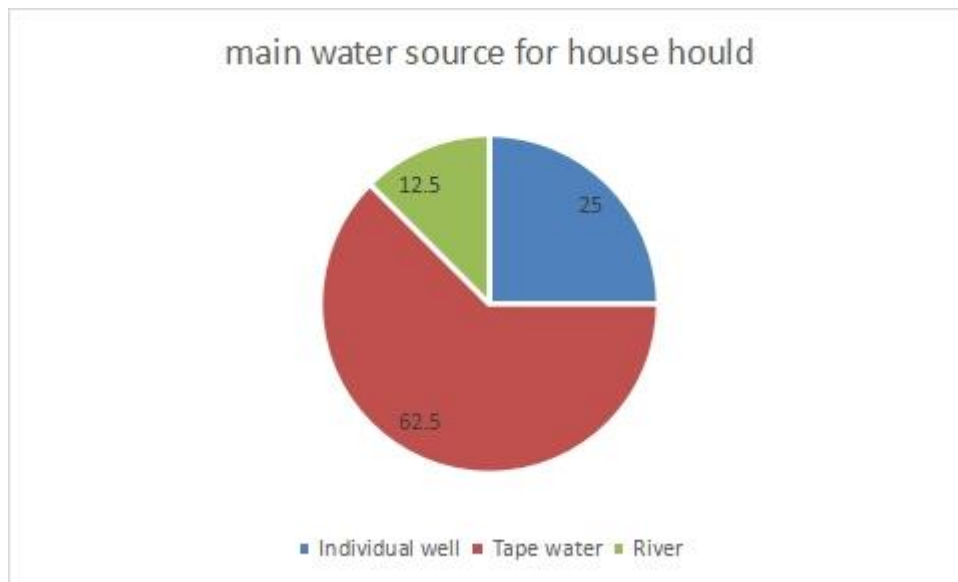
**The main water source for household use.**

Both constituencies reported having three main sources of water for domestic use; these were individual shallow wells, tap water, and river 25%, 62.5%, and 12.5% respectively as shown in Table 5. The study revealed that the majority (62.5%) of the households use tape water from ZAWA supply lines as the main source of water for their daily household uses. This finding signifies there is a great business opportunity for ZAWA to grow and scale up the operation.

**Table 5: Responses on the main water source for household use.**

S/N	Water sources	Number of Respondent	Percentage
1	Individual well	20	25
2	Tape water	50	62.5
3	River	10	12.5
Total		80	100

Sources: Survey data



**Figure 1: Source of water for household use.**

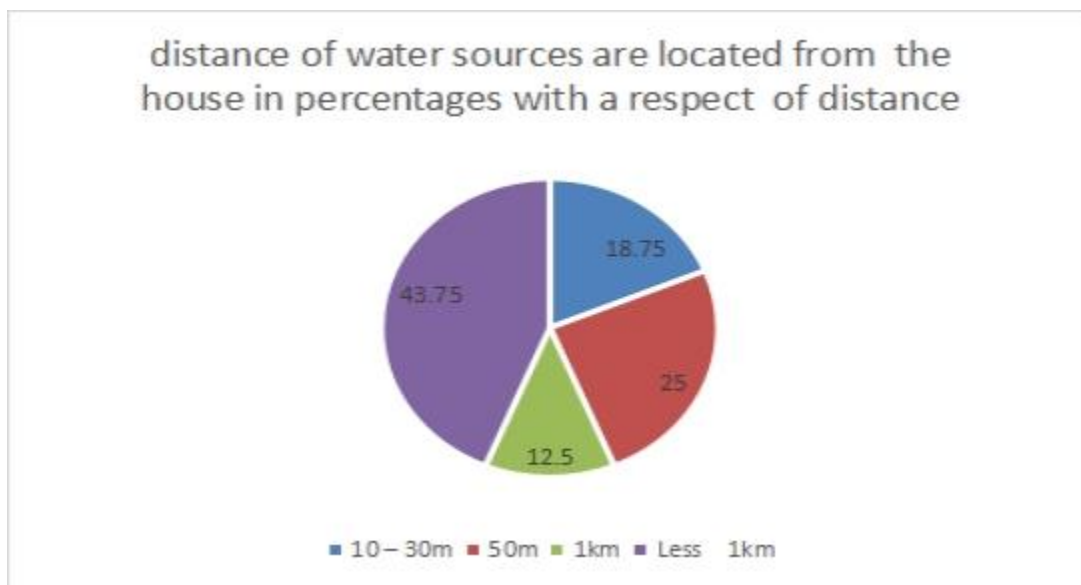
Distance of water sources located from the household. The respondents were asked to give their views on walking and looking for water. As revealed in Table 5, the respondents showed that 10 – 30m, 50m, 1km, and less than 1m km were 18.75% 25%, 12.5 %, and 43.75%, respectively. From these results it can be implied that the

majority of the respondents were not involved in walking long distances looking for water mostly less than 1km, water services are supposed to be fixed inside the house to reduce the burden of unpaid care work for females whom they appear to be the majority involved on searching water for household purposes.

**Table 6: Responses on distance water sources are located from the house in m/km.**

S/N	Distance	Number of Respondent	Percentage
1	10 – 30m	15	18.75
2	50m	20	25
3	1km	10	12.5
4	Less 1km	35	43.75
Total		80	100

Sources: Survey data



**Figure 2: Distance of water sources located from the house in percentages concerning distance.**

**Availability of water demand in the area.**

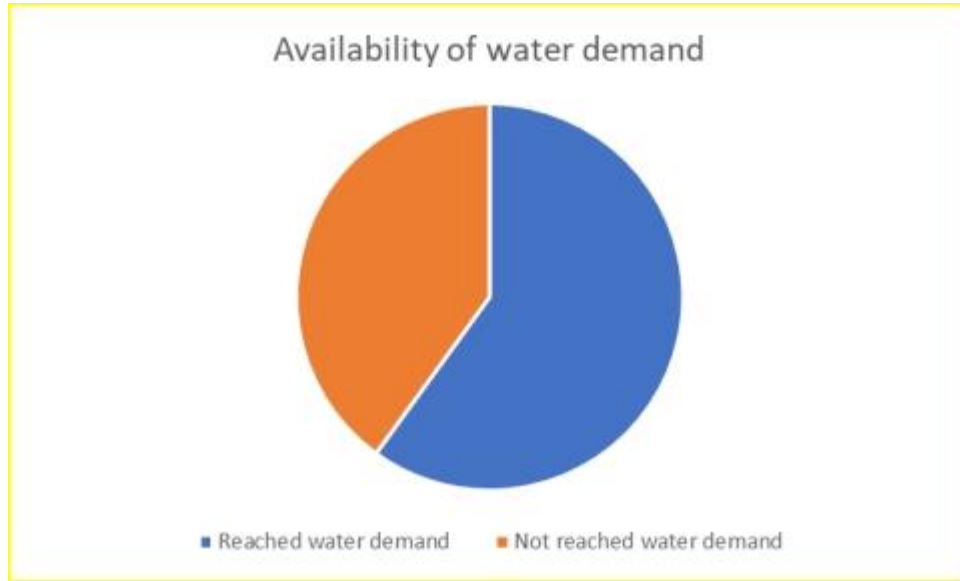
The study results in Figure 3 indicate that some respondents reported encountering water scarcity in their households due to population growth, settlement expansion, and decreasing water levels from the sources,

especially during the dry season. However, the majority of respondents (60%) confess to receiving water supplied by the Zanzibar Water Authority (ZAWA) that meets their daily needs and demands. Whereas, 40 percent of respondents reported receiving less water as compared to the daily requirement (Table 7).

**Table 7: Responses on Availability of water demand of area.**

S/N	Demand of Area	Number of Respondents	Percentage
1	Reached water demand	48	60
2	Not reached water demand	32	40
Total		80	100.00

Sources: Survey data



**Figure 3: The availability and water demand.**

**ZAWA efficiency in water service delivery.**

The study findings show that there was good efficiency in water service delivery in the study area was 27.5%. Likewise, 31.25% responded to having bad efficiency in water service delivery and 27.5% responded to good

efficiency in water service delivery as shown in Table 8: This implies that ZAWA should improve efficiency in water service delivery by overcoming leakage to the water supply network and water resource management to sustain efficiency in water service delivery.

**Table 8: Efficiency in water service delivery.**

S/N	Efficiency in water service delivery.	Number of Respondents	Percentage
1	Good efficiency in water service delivery	22	27.5
2	Bad efficiency in water service delivery.	25	31.25
3	Moderate efficiency in water service delivery.	33	41.25
Total		80	100

Sources: Survey data



**Figure 4: Shows efficiency in water service delivery.**

**DISCUSSION.**

**Monthly Payment of Water bill by Household in regards to ZAWA efficiency.**

The research findings also implied that many households paying for water services greater than 4000Tsh have water meters which is 28.75% and those who were paying 4000Tsh haven't installed water meters which is 71.75%.

According to data from the Household Budget Surveys 2000/2001 and 2007, access to an improved water source in mainland Tanzania even decreased from 55% in 2000 to 52% in 2007. Using a narrow definition, in 2007 around 34% of households had access to piped water, as opposed to 40% in 2000. However, using a broader definition of access that also includes standpipes and protected springs, there has been a slight increase in the proportion of households reporting a drinking water source within one kilometer. Estimates from the Joint Monitoring Programmer for Water Supply and Sanitation (JMP) show a different trend. They show a slight decline in access from 55% in 1990 to 53% in 2017.

According to these figures, access in rural areas stagnated, while in urban areas it decreased from 94% to 79% over the same period. The JMP estimates rely on extrapolations using, among others, data from the Household Budget Survey of 2000/2001 and 2007, the Census of 2002, and the Demographic and Health Surveys of 1999, 2005 and 2010.

The rapid growth of Zanzibar town and the worsening economic situation have a significant strain on all social services and infrastructure. This includes the provision of water services to the town's inhabitants. The situation of water supply in Zanzibar is very similar to that of other developing countries. Water services management in Zanzibar situated today is in crisis (Lee 2017). The situation can be described as an example of the common conflicts within the urban water supply sector in many developing countries.

**LIMITATIONS TO THE STUDY.**

- Most of the interviewees live in different areas, so it was not easy to do interviews at one point for a large group of respondents.
- Shortage of resources like transport means for reaching households during data collection.
- Long procedure for getting permission from the district and Shehia /villagers leaders to conduct interviews.

**CONCLUSION.**

Monthly Payment of Water bill by Household in regards to ZAWA efficiency.

As regards the quality of water service offered by ZAWA as depicted by satisfaction with the quantity of water as per daily demand of the respective respondent households; it can be concluded that a high proportion of customers were receiving water from ZAWA to quantity that meet their daily demand. It should be noted that households that regularly receive water are more likely to willingly pay their monthly water bill than the ones who don't receive it regularly.

**RECOMMENDATIONS.**

It is recommended that ZAWA should make a deliberate effort to get more customers to voluntarily pay their monthly pay water bills. To start with, ZAWA could widen the coverage of their service and increase efficiency in water service delivery by overcoming leakages in water supply networks with good water resource management. It also explores other sources of fresh water particularly rainwater harvesting to enhance domestic water supply. Thereafter conduct rigorous mass sensitization campaigns to get more people to understand the importance of meeting their financial obligations for sustainability of water supply services in Zanzibar.

**ACKNOWLEDGMENT.**

With much respect, I would like to express my cordial thanks to all the people who in one way or another helped in making this research a success. It is not possible however to mention them all, but some of them played exceptionally great roles in the completion of this work and therefore it would not be wise not to mention them.

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**ABBREVIATIONS.**

- JMP:** Joint Monitoring Program
- UNEP:** United Nations Environment Program.
- ZAWA:** Zanzibar Water Authority
- SDIA:** Supply-Driven Implementation Approach.



**SOURCE OF FUNDING.**

The study was not funded.

**CONFLICT OF INTEREST.**

The author had no conflict of interest.

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