



<http://www.ijssit.com>

**FACTORS AFFECTING SERVICE DELIVERY AMONG WATER COMPANIES IN  
KENYA: A CASE OF GUSII WATER AND SANITATION COMPANY, KISII TOWN,  
KENYA**

<sup>1\*</sup> **Enock Bosire Moku**  
[bosireno@gmail.com](mailto:bosireno@gmail.com)

<sup>2\*\*</sup> **Dr. Ngacho  
Christopher (PhD)**  
[cngacho@yahoo.com](mailto:cngacho@yahoo.com)

<sup>3\*\*\*</sup> **Dr. Elijah Maronga  
(PhD)**  
[emaronga@yahoo.com](mailto:emaronga@yahoo.com)

<sup>4\*\*\*\*</sup> **Yusuf Motari**  
[ymotari@gmail.com](mailto:ymotari@gmail.com)

<sup>1\*2\*\*3\*\*\*4\*\*\*\*</sup> *School of Business and Economics, Kisii University*

**Abstract**

*The purpose of this study was to assess the factors affecting service delivery among water companies in Kisii town. In order to achieve this, the study examined the effect of water infrastructure on service delivery. The study adopted descriptive research design. The target population was 310 households from Milimani, Mwembe, Jogoo and 21 senior employees of GWASCO, where a census of all the employees was conducted. Stratified random sampling was used to pick a sample of 174 households connected to GWASCO water and 21 senior employees of GWASCO, where all the employees were used making a total sample of 195 respondents. Primary data was collected by use of questionnaires. Analysis was carried out by descriptive and inferential statistical tools such as frequencies, minimum, maximum, means, standard deviation as well as correlation analysis. The analyzed data was summarized and the findings were reported. Data was presented in form of tables and frequency tables. The study revealed that; availability of collection basins for harvesting water during high rainfall season and enough water distribution systems had a significant correlation to reservation and storage of water. Therefore water infrastructure as captured by water distribution systems, water collection basins and effective land management practices by GWASCO forms the basis for its ability to effectively supply water to its clients in the right quality and quantity. The study recommended that it is important for the company to come up with mechanisms of timely maintenance, replacement of worn out and leaking water pipes so as to improve on service delivery.*

**Keywords:** *Water Infrastructure, Service Delivery, Gusii Water and Sanitation Company*

## 1. INTRODUCTION

Service delivery is a common phrase used to describe provision of utilities to citizens including land, water, electricity, and housing. On the other hand, water supply companies have a mandate to ensure effective and efficient water service delivery in the right quantity and quality at any given time to their customers (Tifow, 2014). However, challenges recently encountered in most countries in the world in terms of social and economic development is increasingly related to water. The increase of the proportion of people who do not access clean water and also basic sanitation is one of the international goals which were declared by the United Nations. While access to sufficient and clean drinking water may be taken for granted in the developed countries and for the case of developing countries in the world, the access to clean water is extremely severe leading to more than five million people dying from water related diseases and the other one billion die due to inaccessibility of water as a basic need (WHO, 2011).

In many cases, water is not available at the locations and times where and when it is most needed. For instance, people who do not access safe water in urban areas is rising worldwide especially in developing countries due to rapid urbanization, much of which occurs in Peri-urban and slum areas, however, Kenya's goal as enshrined in vision 2030 for water and sanitation is to ensure access to improved sanitation, availability and access to clean and safe drinking water (Ntlhoi, 2016).

The current situation indicates that, water resources in Kenya are threatened by contamination, exhaustion and declining water sources. To demonstrate commitment to provide effective services, a number of legislation enacted

in Kenya provide a legal framework to facilitate achievement of this goal, for instance, the water Act of 2002 allowed privatization of water provision whereby private companies were mandated by the Act to offer the services. This led to decentralization of water provision services to even local areas where all this was entrusted to Water Service Providers (WSPs). This led to the birth of Gusii Water and Sanitation Company (GWASCO) in the year 2006 and was registered under CAP 46 of the Kenyan Law as supplementary company of Kisii Municipality. The core objective of the company is the provision of commercial water services with an aim of generating sufficient revenue to sustain its operations. The company offers services such as bulk water sales, treatment of water, sampling and analysis of water for quality assurance, water quality tests in the laboratories for private water services, daily audit on pressure of water in order to ensure water availability and reliability to customers service lines, leak repairs, replacing of water pipe, accounts opening for new customers and also notification on water interruptions. The major objective of the services is to achieve clean high-quality water, affordable prices to all clients, consultancy services and quick address to the needs and complaints of the clients, convenient and reliable water supply. Currently the company seems to be overwhelmed in its service delivery efforts as evidenced by the area of coverage and the population it serves (Onsomu, 2013).

### Statement of the Problem

Most people do not have access to clean water and the challenge persists all over the world. The study conducted by Samantha (2011) found that there are about 40 million people living in Kenya, of whom about 17 million (43 percent) do not access clean and safe drinking water. An observation by

the WHO (2011) corroborates these findings by confirming that as a result of poor water infrastructure, most Kenyans living in the informal urban areas access polluted water which causes cholera epidemic and multiple other diseases. These water challenges are not only confined to Kenya as most countries all over the world struggle to build water infrastructure for sustainable water supply. Gusii Water and Sanitation Company (GWASCO) being one of the Water Service Providers in Kenya is also bedeviled with these challenges in its efforts to ensure efficient water supply.

### **Objectives of the Study**

The objective of the study was to assess the effect of water infrastructure on service delivery by GWASCO in Kisii town.

### **Scope and Justification of the Study**

The study focused on the effect of water infrastructure on service delivery by Gusii Water and Sanitation Company (GWASCO) in Kisii town. The water supply company covers an area of 1974 km<sup>2</sup> and serves a population of 1.6 million people. Data was collected from the Company employees and its clients within Kisii Town. Consequently, water is an essential and crucial necessity for both domestic and industrial use and also service delivery forms the basis of customer satisfaction.

## **2. LITERATURE REVIEW**

### **Water Supply in Kenya**

Water supply system investments in Kenya has for a long time avoided those areas settled by the poor in urban centers as much focus is on the middle to high income areas for quick returns. Water supplies to peri-urban areas where settlement is not formal is plagued with many problems such as unplanned nature of settlement, hence inadequate

infrastructure including roads, water, sanitation, sewerage, drainage, and electricity situation that characterizes very low levels of public services and as a result clean water, adequate sanitation, and hygiene are visibly substandard or non-existing altogether. The continuing expansion of settlements demand of water emanates from relatively high population growth. Lack of adequate rainfall has contributed to inability to get enough food thus leading to eruptions of violence in Kenya. In many areas, the problem of water shortage has been contributed by the government's lack of investment in water, especially in remote areas. The majority of poor Kenyans in urban centers usually access only polluted water, which has caused cholera epidemics and other opportunistic diseases which have a negative impact to their health and livelihood (Kianna, 2014).

Bellaubi & Visscher (2010) in their study on enhancing integrity to improve service delivery in water supply service provision in both Kenya and Ghana observed that deep seated challenges exist in water supply in both countries. They observed that water crises in 2009, 2006, and 2000 have not yet catalyzed government and service providers to act together to address long-term challenges, and with uneven distribution of water resources and a high level of aridity (80 percent of Kenya's land area is arid or semi-arid) the problem of raw water availability was likely to increase. The study revealed that by 2006 only 42% of Kenya had supply of water while 31% had sanitation and sewerage coverage both in metropolitan and remote areas against a target of 76% in both areas.

### **Service Quality**

According to Paulo et al (2013), Parasuraman's SURVEQUAL model in quality service delivery aims at measuring the degree of satisfaction of the organization's service to its customers. The model

is based on the analysis of expectations and perceptions of the customers in relation to the services offered by the organization and this is based on the five critical dimensions which include; tangibility, reliability, responsiveness, assurance and empathy. From the difference between what is expected by the user and the service offered, gaps or shortcomings are derived that may be the main obstacle for users to perceive the provision of such services with quality. According to Richard et al (2013); viability of an organization requires an organization to be service-oriented which in turn leads to achievement of two important outcomes that is operational efficiency and customer service excellence. Organizations which are customer focused adopt structures, strategies and priorities which facilitate greater understanding and responsiveness to customer needs. In the rural areas, for instance, service delivery demands are mainly centered on availability, acceptability, accessibility and affordability. According to Zama (2013), in a study on the service delivery by the water sector in South Africa with a focus on Dipaleseng Municipality, the study observed that supply or lack of services affected people's quality of life.

### **Water Infrastructure and Service Delivery**

World wide, aging of water infrastructure is rapidly failing due to lack of using smart network modelling technology that leads to effective management of critical water infrastructure which ensures maintenance of the desired level of service delivery. (Boulos, 2017)

In Kenya, the success or failure of water supply highly depends on the existing water infrastructure. There exists poor water infrastructure in various parts of the country, some of the existing infrastructure was built during colonial period and therefore cannot meet the

current needs. Antonio (2005) amplifies this in his research on European response to the challenges of water and sanitation in developing countries by noting that the failure of the water and sanitation management systems is attributed to the archaic infrastructure which is still being utilized in the water sector. Most cities and towns in developing countries have not been able to replace most of the aging water pumps, pipes and motors, which have been in operation without adequate maintenance even after their lifespan lapsed. The consequences of the aging infrastructure and lack of maintenance is apparent in the malfunctioning of the water distribution and sewage systems, as demonstrated by the broken sewage pipe and tank as well as overflow in the streets. In the cities, there are more of such broken sewage pipes, with overflow of sludge onto streets in residential areas, which cause respiratory complications, especially in densely populated informal settlements. As a result, the city water systems are decrepit and will continuously collapse which translates into water shortage.

According to Kibwage et al., (2010), in a study on Access to Safe Water and Household Water-User Preference in Obunga Slums of Kisumu Municipality targeting a population of 2,507 households divided into four administrative units observed that one of the key challenges to the developing countries is the increasing population which in turn leads to inaccessibility of clean water and yet billions of dollars have been invested in pursuit of the universal service goal which is equally still elusive. The researcher adopted cross sectional survey where purposive sampling was used to sample 367 households, it clearly portrayed that there was need for water supply and accessibility of services to be privatized in Kisumu Municipality. The study further showed that the proportion of households

with access to piped water within a radius of 200m was 77.1%, those who met the basic water requirement were represented by 65.6% and the household who accessed the minimum recommended amount of water that is 50l/c/d was represented by 25%. It was also established that reduced access to water services is highly associated with low income of households and low investment in water infrastructure. On the other hand the researcher found that expanded access to safe water services could only be achieved if only much investment could be made to rehabilitation of water infrastructures and extension of existing water network. In addition, upgrading of the water treatment plants could also reduce the cost of maintenance and unaccounted for water hence making better use of large water volumes. The researcher further recommended that for better management and efficient service delivery, organizations should provide demand driven services which aim at changing customer needs into services hence increased customer satisfaction (Kibwage et al., 2010).

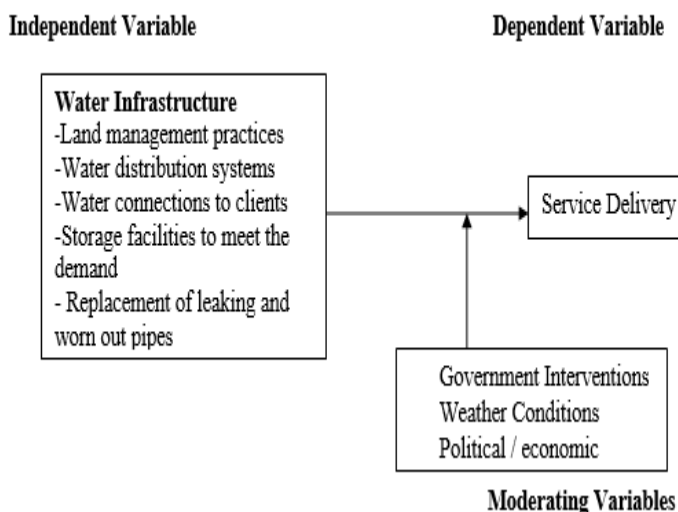
include the various Water Infrastructure factors that affect service delivery by the water companies.

### 3. RESEARCH METHODOLOGY

The study adopted descriptive design, because it allowed collection of information about people’s, opinions and thoughts which generalized the entire population. The target population was 310 households from Kisii Town which were connected to GWASCO water and 21 senior employees of GWASCO. This study adopted two sample frames as a mechanism of addressing the validity of a research study. The first sample frame was a census of all the senior employees of GWASCO. The second sample frame constituted of GWASCO clients. The clients were sampled from three different regions served by GWASCO (Mlimani, Mwembe and Jogoo). Yamane’s formula as cited by (Polania, 2013), was applied to the potential households, it yielded a sample size of 174. Stratified Simple random sampling was used to select respondents from each region. Inclusive of a sample of 21 respondents from GWASCO senior staff, the total sample for the study was 195.

The raw data after collection was cleaned and then coded. The researcher scored the questionnaires and proceeded to enter the data into the Statistical Program for Social Sciences (SPSS). Data analysis was undertaken using descriptive statistical tools such as means, minimum, maximum and standard deviation. Inferential statistical tool used was correlation analysis for determining the relationship between variables. The analyzed data was summarized and findings were reported as a description of the total population of the study. Data was presented in form of tables and frequency tables.

Figure 1 Conceptual Framework of the Study



The conceptual framework comprises of the independent, dependent variables and the intervening variables. The independent variables

#### 4. FINDINGS AND DISCUSSIONS

##### Response rate

The researcher managed to successfully administer 163 questionnaires out of the target sample of 195 respondents which translated to 83.5% which is equally reliable to the study.

##### Gender of the Respondents on service delivery

It was clearly indicated that most of the respondents were male as indicated by (57.7%) and the rest were female as evidenced by (42.3%). This clearly revealed that most of the respondents were male since most assets where water connection was done including water meters was in their ownership as reflected by deep seated gender disparity in Africa. This observation reveals that since the area of study is an urban setup, most male respondents were not staying with their female counterpart. However, the survey of SDC (2003) indicated that gender perspective in understanding usage of water in households indicated that women involvement in usage of water is likely to ensure greater water sustainability and resource efficiency and can therefore increase the number of beneficiaries. Women in most cases are the primary users of water in domestic consumption and sanitation; they also take the primary role in educating children on water usage and conservation. In this study therefore, the disparity in the gender indicates there is a high possibility of wastage in the consumption of water in the area of the Kisii town.

##### Water Infrastructure on GWASCO Service Delivery

Table 1 shows the analyzed data in relation to the effect of water infrastructure on Gusii Water and Sanitation Company. The study presented the findings on descriptive statistics from the data

collected as shown. The water infrastructure variables examined in the study included storage of water, land management practices, water treatment plant, water distribution system, replacement of worn out pipes and connection to new water. The finding of the study indicated that water harvesting had a mean of 4.3846, land management practices had 3.7692, water storage facilities had 3.4615, sufficient water treatment plant had 3.3846, efficient water distribution systems at 2.9231, Timely replacement of leaking and worn out pipes had a mean 2.6154 while new water connections for clients had a mean of 1.3077. From this findings, responses obtained indicates that efficiency of water harvesting was viewed as a strong indicator on satisfaction of GWASCO clients' service delivery while, the rate of water connection had the least effect on service delivery by the company.

**Table 1 Response by GWASCO Staff on Water Infrastructure and Service Delivery**

Water infrastructure indicators	Min	Max	Mean	Std. Deviation
Continuous water supply	3.00	5.00	4.3846	.86972
Land management practices	2.00	5.00	3.7692	1.16575
Storage facilities to meet the demand	1.00	5.00	3.4615	1.12660
Sufficient water treatment plants.	2.00	5.00	3.3846	1.04391
Efficient water distribution systems	1.00	5.00	2.9231	1.03775
Timely replacement of leaking pipes.	1.00	5.00	2.6154	1.19293
New water connections for clients	1.00	2.00	1.3077	.48038
<b>Overall</b>			<b>3.120871</b>	

The analysis of the result by the standard deviation show that the dispersion of the responses was however uniformly distributed among the variables examined which implies that respondents did not have strongly divergent views on the indicators measured by the study. In comparison with similar studies, Kibwage et al., (2010) concurs with the findings of this study to the extent that service delivery is greatly affected by availability of adequate water infrastructure. In the

researcher’s study on access to water in Kisumu municipality it was observed that expanded access to safe water services could only be achieved only if much investment could be made to the rehabilitation of water infrastructure and extension of the existing network.

**Relationship between Water infrastructure and Service Delivery**

**Table 2 Water infrastructure and Service Delivery**  
Correlations of water infrastructure factors on service delivery

	Enough reservoirs and storage of water	Water treatment plants	Enough Water distribution systems	Availability of collection basins for harvesting water	Land management practices	New water connections for clients	Timely replacement of leaking and worn out pipes
Enough reservoirs and storage of water	1	.262	.532	.569*	.278	.486	-.043
Pearson Correlation Sig. (2-tailed)		.388	.061	.042	.357	.092	.889
water treatment plants	.262	1	.491	.650*	.764**	.243	.329
Pearson Correlation Sig. (2-tailed)	.388		.088	.016	.002	.424	.272
Enough water distribution systems	.532	.491	1	.405	.329	.386	.041
Pearson Correlation Sig. (2-tailed)	.061	.088		.170	.273	.193	.893
Availability of collection basins for harvesting water	.569*	.650*	.405	1	.670*	.491	-.006
Pearson Correlation Sig. (2-tailed)	.042	.016	.170		.012	.088	.984
Land management practices	.278	.764**	.329	.670*	1	.286	.111
Pearson Correlation Sig. (2-tailed)	.357	.002	.273	.012		.343	.719
New connections for clients	.486	.243	.386	.491	.286	1	.515
Pearson Correlation Sig. (2-tailed)	.092	.424	.193	.088	.343		.072
Timely replacement of leaking and worn out pipes	-.043	.329	.041	-.006	.111	.515	1
Pearson Correlation Sig. (2-tailed)	.889	.272	.893	.984	.719	.072	

Availability of collection basins for harvesting water during high rainfall season and enough water distribution systems had a significant correlation to reservation and storage of water by GWASCO with p-value of 0.569 and 0.532 respectively, similarly effective land management practices and availability of collection basins for harvesting water had a strong relationship with

establishment and management of water treatment plants with p-values of 0.764 and 0.650 respectively. Therefore, water infrastructure as captured by water distribution systems, water collection basins and effective land management practices by GWASCO forms the basis for its ability to effectively supply water to its clients in the right quality and quantity. These findings collaborate with the study by Kibwage (2010) on access to safe water and household water preference in Kisumu Municipality where it was established that water service quality can be achieved by investment on and rehabilitation of water infrastructure.

**5. CONCLUSIONS**

This study focused on assessing the factors that affect service delivery among water companies by focusing on GWASCO. The study analyzed the relationship between the independent variable such as water infrastructure to the service delivery by GWASCO. The study observed that availability of water infrastructure influences to a great extent service delivery of the water Company. Even with this in mind, the study noted inadequate water infrastructure and poor water network. The study noted that water company strives to improve on water distribution systems, establish water collection basins and develop effective land management practices all of which forms the basis for its ability to effectively supply water to its clients in the right quality and quantity.

**Recommendations of the study**

The findings revealed that timely replacement of worn out and leaking water pipes had a negative correlation significant to service delivery by GWASCO. Therefore, there is need for the company to come up mechanisms of timely maintenance and replacement of worn out and leaking water pipes so as to improve on service

delivery. The study concurred with the study of Boulos (2017) who found that for maintenance and improvement of the desired level of service

delivery, timely replacement of aging and failing water pipes is vital.

## REFERENCES

- Antonio, G. F. (2005). The European response to the challenges of Water and Sanitation in Developing Countries. TRIBUNE, the document of European Commission.
- Bellaubi, F., & Visscher, J. T. (2010). Enhancing integrity to improve service delivery in water supply service provision. *IRC Conference Paper*.
- Boulos P., (2017) Optimal Scheduling of Pipe Replacement. *Journal of American Water Work Association*. 109(1).
- Kianna B., (2014) A Clean 5 Gallons a Day Keeps the Doctor Away: The Water Crisis in Kenya and Rwanda. *Global E-Journal*, Vol. 5, No.2.
- Kibwage J.K (2010) Access to Safe Water And Household Water-User Preference in Obunga Slums of Kisumu Municipality, Kenya.
- Le Gouais, A. & Wach, E. (2013) A Qualitative Analysis of rural Water sector Policy documents . *Water Alternatives*.
- Lilian Nyaboke Onsomu (2013). Factors Influencing the Financial Viability of a Water Service Provider in Kenya. A case of Gusii Water and Sanitation Company. *International Journal of Arts and Commerce*. 2(9)
- Ntlhoi Motsamai (2016) Policy for Ensuring Access to Water and Sanitation for all by the year 2030. *National Assembly of Lesotho at the 47<sup>th</sup> Commonwealth Parliamentary Association Balaclava, Mauritius*.
- Paulo S. (2013). The use of the quality model of Parasuraman, Zeithaml and Berry in health centres.
- Polania GFK., (2013), *Analysis of Sample Size in Consumer Surveys*: Poland Richard F., Moriarty, P.; Smits, S.; Butterworth, J. and. 2013. Trends in rural water supply: Towards a service delivery approach. *Water Alternatives*. 6(3): 329-349.
- Samantha, M. (2011). The Water Crisis in Kenya: Causes, Effects and Solutions. *Global Majority E-Journal*
- SDC (2003). Water and Gender. Mainstreaming gender equality in water, hygiene and Sanitation interventions.
- Tifow, A. A. (2014). *Factors influencing sustainability of rural water supplies in Kenya: Case of UNICEF supported rural water projects in Lake Victoria south and Lake Victoria north water services board regions*. Doctoral dissertation.
- World Health Organization. (2011). *Guidelines for drinking-water quality*. Geneva: World Health Organization.
- Zama S., (2013) Service delivery: focus on Dipaleseng Loca Municipality: Mpumalanga. *Commonwealth Journal of local Governance*