CHALLENGES FACING WATER SERVICE PROVIDERS IN KENYA IN ACCESSING THE OUTPUT BASED AID-COMMERCIAL FINANCING

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the proposal contains no material previously published or written by another person except where due reference is made in the thesis itself.

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DEDICATION

I dedicate this thesis to my family and friends for their support encouragement and prayers.

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ABSTRACT

Water is an essential component in the development of any economy. Although the Kenyan government has made some strides towards water supply and sanitation coverage within the country, recent statistics by the water services regulatory board reveal that water supply and sanitation service provision still remains scanty due to insufficient finances. Water Service Providers (WSPs) are confronted with numerous hurdles which stifle their ability to sustainably fulfill their legal obligation of providing water and sanitation services without relying on aid support from government or non-governmental organizations. This paper examined the challenges that water service providers in Kenya face in accessing commercial financing from commercial banks. The specific objectives were to identify the current sources of financing within the water and sanitation sector, to determine the challenges facing water service providers in Kenya in accessing the output based aid-commercial financing, and to rank the challenges from the most prevalent to the least prevalent. A positivism research philosophy and an exploratory research design was used for this study. Kenya was the unit of analysis. To achieve the objectives, the study used primary data. Questionnaires were administered to the commercial/finance managers of the water service providers. The collected data was analyzed using SPSS. The target population of the study comprised of the water service providers in Kenya. The study used a non-probability sampling technique of purposive sampling where the sample was known and a simple random sampling. The sample constituted 8 water service providers which applied for and accessed the facility, 6 water service providers which applied for but did not access the facility and 56 WSPs which did not apply for the loan at all. From the findings, this study aimed at coming up with recommendations and solutions that water service providers need to implement for them to access the output based aid-commercial financing. Empirical data analysis used correlation. The study established that consumer tariffs were the main sources of infrastructure financing for water service providers. The study also established economic efficiency challenges was the most prevalent and persistent followed by corporate governance challenges then lastly information asymmetry. Under Corporate governance, the PPMC analysis showed a high positive relationship between proper financial management and ease of access to OBA financing ($r = 0.5$; $p = 0.000$; $n = 62$). Further, the analysis revealed the existence of a moderate positive relationship between level of utility oversight and supervision and ease of access to OBA financing ($r = 0.3$; $p = 0.16$; $n = 62$). The analysis also shows low positive relationship between availability of information and control system and ease of access to OBA financing ($r=0.2$; $p = 0.11$; $n = 62$). Under Economic Efficiency, the PPMC analysis indicated that there was a high positive relationship between revenue collection efficiency and access to OBA ($r=0.508$; $p = 0.00$; $n = 62$). It showed operational efficiency has a moderate positive effect on access to OBA ($r= 0.309$; $p=0.015$; $n =62$). Under Information Asymmetry, the PPMC analysis indicate that there was a low positive relationship between knowledge of OBA financing and access to OBA ($r = 0.220$; $p = 0.085$; $n =62$). The findings also reveal a low positive relationship between knowledge on fees and commissions and access to OBA ($r = 0.188$; $p = 0.144$; $n =62$). The analysis also shows a low positive relationship between knowledge on the interest rate of loans and collateral requirements and access to OBA ($r = 0.136$; $p = 0.292$; $n = 62$).

Keywords: *Water service providers (WSPs), Output-Based Aid, Results-Based Financing, commercial finance, water sector, water supply.*

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ABBREVIATIONS AND ACRONYMS

AFDB	African Development Bank
CLTS	Community Led Total Sanitation
GPRBA	Global Partnership for Results-Based Aid
GPOBA	Global Partnership on Output-Based Aid
KNBS	Kenya National Bureau of Statistics
OBA	Output-Based Aid
ODF	Open Defecation Free
OECD	Organization for Economic Co-operation and Development
RBF	Results Based Financing
WASH	Water, Sanitation and Hygiene
WASREB	Water Services Regulatory Board
WSP	Water Service Providers
WSTF	Water Sector Trust fund

DEFINITION OF KEY TERMS

Commercial Finance – This refer to finance that is payable according to the market and comprises of equity to debt from small personal microfinance loans to big global capital market bonds. Moreover, project finance, bond finance, or equity finance is also included as forms of commercial finance used to support conventional forms of finance.

Corporate Governance- refers to the system of rules and guidelines and practices that guide the daily operations of an organization.

Information Asymmetry- This refers to the un-equilibrium that occurs among two parties that are negotiation in their knowledge of pertinent details and factors.

Operational Efficiency- Operational efficiency is the degree to which revenues generated meet the cost of running a utility.

Output Based Aid subsidy- Output Based Aid subsidies are subsidies paid to service providers depending on measurable and effective results, whereby they are incentivized to achieve results.

Revenue Efficiency- Revenue Efficiency is the ratio of the total collection to the total billing done over the same period expressed as a percentage (Total collected/Total billed*100). It is used to determine how efficient the revenue management system of a utility is.

CHAPTER ONE

INTRODUCTION

This chapter presents the background of the study, statement of the problem, objectives of the study, significance of the study, scope of the study and limitation of the study.

1.1 Background of the Study

Water and Sanitation are important agendas for nations worldwide. An ideal environment is one with easily accessible clean water. However, due to poor WASH (water, sanitation and hygiene) infrastructure, scores of people world over die from illnesses related with insufficient water supply, poor sanitation and low hygiene. Poor sanitation and water pollution results to 1.5 million of child preventable deaths annually making these as the largest contributor to infant mortality along malnutrition and malaria (OECD, 2011). Poor water supply, poor water quality and inadequate sanitation also adversely affect food security, educational choices and livelihood opportunities for families across different countries (WASREB, 2019).

1.1.1 Water and Sanitation sector in Kenya

One of the key pillars for Kenya's development is the access to clean water and improved sanitation services by the citizenry. As of 2019, water coverage under regulation in Kenya was at 57% countrywide and sanitation coverage was at 16% against a target of universal access by 2030. Clean water and sanitation provision in Kenya continues to be low despite the amount of money invested in it. The WASREB 2019 impact report depicts a persistent stagnating trend of water supply and sanitation coverage for the past 10 years (WASREB, 2019). The report further points out that nearly 40% of the people living in urban areas reside in low income areas where WASH infrastructure is largely missing and where removal of human waste and other effluent is problematic.

The 2019 national census exercise conducted by the Kenya National Bureau of Statistics indicate that out of the 7,379,282 people living in the rural areas with conventional households, 11.5% still use bushes or defecate openly as a mode of human waste disposal and 0.8% of the 4,663,734 people living in the urban areas use bushes as a mode of human waste disposal. This increases prevalence of diseases such as diarrhea, amoeba, typhoid and cholera. Conventional households in this case described an individual of group of persons who live in a compound or homestead but

not in the same housing unit and have similar cooking arrangements and answer to a common household (KNBS, 2019). Many Community Led Total Sanitation (CLTS) campaigns, however, have been carried out by various governmental and non-governmental organisations to sensitize people on dangers of open defecation with some counties like Siaya and Busia being declared ODF (Open Defecation Free) by the Ministry of Health (KIWASH USAID, 2017).

Water and sanitation services is provided for in Chapter Four (Bill of Rights) of the Constitution of Kenya 2010. Section 43 (1d) of the constitution of Kenya states that "every person has the right to clean and safe water in adequate quantities". In addition, section 22 gives provision to individual(s) to institute legal proceedings if the right is denied, infringed, violated or threatened. In July, 2010, the United Nations (UN) declared the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights. The Water Act (2016) delegates the mandate for water and sanitation service provision as well as the development of county water works to county governments (GOK, 2016). To exercise this mandate, counties can establish (and merge) water service providers (WSPs). These are owned by the county government and are commercially managed and licensed by the Water Services Regulatory Board (WASREB). The financing of projects is now largely executed through WSPs as agents of county governments. As devolution is progressing, the sector is still in a transition period. There are 94 registered water service providers across the 47 counties providing water and sanitation services within the area specified in their licenses.

Most WSPs in Kenya face a myriad of challenges in service provision which vary spatially from one WSP to another which hinder their ability to be self-reliant while sustainably fulfilling their mandate. The challenges vary with the geographical location of the water company. The main ones that cut across most WSPs experience low collection of revenue, high maintenance and operation costs, low quality services, low metering of connections, governance constraints, high non-revenue water, and inadequate funding. To achieve the Vision 2030 target of universal access to water and sanitation is dependent on resolving these barriers facing WSPs along with stakeholders to expand and rehabilitate the current water infrastructure to the marginalized. The main challenge of these water service providers has been access to financing impeding their service delivery to the people (WASREB, 2019).

1.1.2 Financing in the Water and Sanitation Sector

The financing and development of water infrastructure is foundational to achieving the SDG 6. The investments needed to deliver sustainable water and sanitation services, specifically, operation and maintenance of the infrastructure, coverage expansion and service delivery upgrade that meets the existing environmental and social expectations are huge. The advantage of these investments for the community is equitably substantial with one dollar of investment in water and sanitation saving up to 4 to 12 dollars in avoided health care costs alone (OECD, 2011). Yet, most water companies are underfunded with dire consequences for the population, especially the poor. The provision of sustainable drinking water supply and sanitations services (WSS) called for adequate strategic financial planning to ensure that future and current financial resources meet the needs of investments and costs of maintaining and operating services.

To achieve the Sustainable Development Goals (SDG6), water infrastructure financial needs globally are projected to range from 6.7 trillion USD by 2030 to 22.6 trillion USD by 2050 (Trémolet & Trémolet, 2019) and the estimated investment to achieve the SDG 6 targets requires a 'threefold increase in existing levels of investment (SIWI, 2018)'. (African Development Bank, 2018). Studies have provided evidence to the lack of direction and effort towards attaining sanitation and water targets as captured in SDG 6. The African water infrastructure landscape is also afflicted by inadequate investment finance into the sector.

According to a 2017 study conducted by the African Development Bank, the continent's overall infrastructure needs amount to 130–170 billion USD per annum as at 2018: and with the commitments made by governments, private investors, multilateral development banks, there still exists a financing gap of 67.6–107.5 billion USD. Further, of the 75 billion USD commitments to Africa's infrastructure between 2012 and 2016, water and sanitation received just 17 per cent (African Development Bank, 2018). Commitments to the water sector did increase substantially from 7.5 billion USD in 2015 to 10.5 billion USD in 2016, with the majority of the water sector commitments coming from African governments who allocated 4.4 billion USD (Yaari et al., 2019). In Kenya, the available government spending on water supply is Ksh592.4 billion (USD5.6 billion) in comparison to the anticipated cost for Ksh1.7 trillion (USD17 billion) indicating a financing gap of Ksh1.2 trillion (USD11.4 billion) (WASH-FIN) KENYA, 2019). The Kenya National Water Master Plan 2030 approximates that an investment of Kshs 100 billion per annum

is required in order to realize the universal access by 2030 (Government of Kenya, 2013). The strategic actions recommended to attain these targets are: improving fund mobilization, securing high fund effectiveness and self-financing of the sector (WASREB, 2019).

The level of financing within the WSPs is crucial in understanding the financing issue within the sector. According to a study conducted by Mati and Mugo (2017) Kenya needs a comprehensible and coordinated water and sanitation plan. Through the Vision 2030, the country requires an estimated Ksh 1.7 trillion investment. Information from Kenya National Water Master plan 2030 points out that the Kenya government allocation is around Ksh 592.4 billion or 6 USD billion. This figure represents a USD 12 billion shortfall within the sector. Another survey conducted by Water (2017) conforms to the findings of 2018 findings of Mati and Mugo. According to the survey, the annual budget allocation for the sector is just a quarter of the needed investment needs of Kshs 120 billion.

The main challenge for developing countries like Kenya is to close this financing gap, and create the enabling environment to attract public and private investment to the sector amidst dwindling donor funding. Creating an enabling environment involves clearly defining the functions and responsibilities of each stakeholder, it also involves promoting transparent governance structures, strengthening service providers, progressively implementing regulatory regimes and tariffs, and guaranteeing equitable service provision for all consumers. Applying creative and innovative financing mechanisms and integrated thinking to overcome key water challenges has become essential in establishing an enabling environment and consequently providing resources that close the financing gap in water infrastructure. Traditionally, most of the investment funding in the water sector has been through budgetary allocations, Geographic earmarking, equalization funds, decentralized funds, (of donor funded projects), WSS development funds; and tariffs/contributions from customers. Historically, donor funding has been observed to cover more than half of the total funding as sources from Government budgetary resources has been seen as insufficient and poorly targeted (Bender & Njaggah. 2015); (Wasreb, 2015) also reiterates the same. Governments and donor agencies have, therefore, come up with other different innovative ways of financing water and sanitation projects in order to complement existing funding that comes from traditional sources of transfers, tariffs and taxes.

			management. The study documents the widespread promotion and adoption of these reforms, and conclude that decentralization made it difficult to insulate service provision in practice. The study argues that studying how institutional reforms interact with one another can help explain reform consequences.	
Kanda, Odiero, Lutta and Ong'or (2018)	Challenges Facing Small and Medium Water Service Providers in Kenya: A Case of Amatsi Water Services Company, Vihiga County	Case Study	The main problems affecting small and medium WSPs include high non-revenue water, low metering of connections, low revenue collection efficiency, high operation and maintenance costs, governance challenges, insufficient funding and low quality of service	Water service providers in Kenya are categorized into very large, large, medium and small WSPs. Therefore, the case study of Amatsi water services company which is a medium WSP was not a holistic representation of the vast landscape of the water service

				provision in Kenya. The study only captured challenges affecting medium WSPs leaving out other categories of WSPs with challenges varying in nature. The study also did not look at the impact of these challenges on access to Commercial financing.
Kihara (2016)	Managing water service providers in Kenya, "A Case for Good Corporate Governance"	comparative analysis	Key contributors to inefficiency in the water sector is the fact that the legal framework creates corporate governance frameworks whose mandate overlaps and often conflict leading to confusion and duplicity of roles.	The study looked at extent to which the corporate governance systems of water service providers in Kenya are effectively addressing the challenges posed by limited water resources. The study however did not look at how these corporate

				governance systems affected water utilities in accessing credit financing.
Mensah, Azinga, Akwele and Sodji (2015)	Challenges faced by small and medium-size enterprises in accessing credit facilities from financial institutions: An empirical assessment incorporating the perceptions of both borrowers and financiers	Survey method Pearson correlation test, simple linear regression analysis and the arithmetic mean	Some of the challenges identified perceived to be common between borrowers and lenders included high inflation; lack of adequate capital; high interest rate in the capital market, and exchange rate fluctuation. There was a strong positive relationship between challenges perceived by borrowers and challenges perceived by bankers.	The study focused on small and medium enterprises in Ghana whose business environment were distinct from the ones in Kenya. The study also failed to assess how corporate governance, Economic Efficiency and Information Asymmetry challenges in the SMEs affect Commercial financing.
Ndegwa, 2016	The Impact of Non-revenue water on water Utilities and their	Customer survey	The purpose of this study was to find out how Non-Revenue Water (NRW) affects water utilities and their	The study showed that Non-Revenue Water (NRW) experienced by the Nairobi City Water

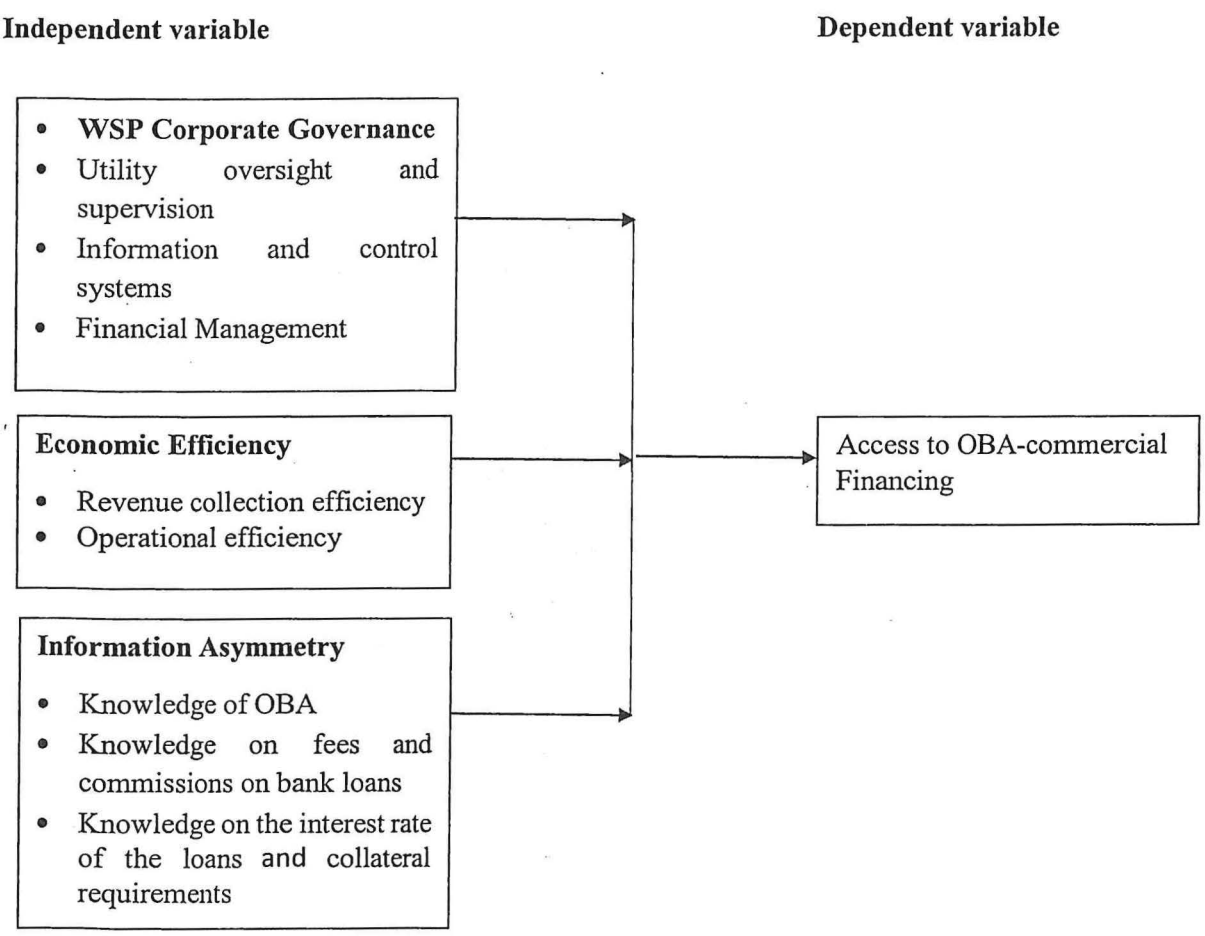
	customers: A study of Nairobi city water and sewerage company		customers, by studying the case of the Nairobi City Water and Sewerage Company (NCWSC). NRW led to losses affected the NCWSC by denying it a significant portion of the revenue it should earn from the sale of water. It also prevented it from adequately serving its customers' water needs, and subsequently leading to loss of reputation and goodwill The losses also affected the customers. This was because water losses led to rises in price of water as the water utility tried to recover the lost revenue by charging a premium on the on the paying customers.	and Sewerage Company had an impact on both the NCWSC and its customers. The study showed that NCWSC suffered mainly financially and reputation-wise due to NRW it however did not show how this affected access to commercial financing.
Waari and Mwangi (2015)	Factors influencing access to finance by	Descriptive survey design	The study revealed that information asymmetry, business risks and transactional	The study focused on MSMEs in Meru county and was faced with the

	micro, small and medium enterprises in Meru county, Kenya		costs influence access to finance. The transactional cost emerged as the most critical factor or the most significant predictor to access to finance.	challenge of generalizing the research findings to all regions in Kenya. The study therefore failed to capture the challenges arising as a result of different geographical locations of SMEs.

2.5 Conceptual Framework

Figure 2.6 shows the graphical presentation of the relationships between the study variables. The independent variables for the study are corporate governance, economic efficiency and information asymmetry, while the dependent variable is access to OBA-commercial Financing

Figure 2.2 Conceptual Framework



2.6 Operationalization of the Variables

Table 3.1: Operationalisation of Variables

Variable	Indicator	Measurement Proxy	Source
Corporate Governance	• Utility oversight and supervision • Information and control systems • Financial Management	• Presence of board committees • Presence of a risk management framework • Segregation of duties • Presence of a functional board of directors • Availability of audited financial statements • Presence of an independent audit function • Presence of a qualified finance manager • Budgets approved by the board • Availability of a valid tariff • Budgets prepared based on approved tariffs	WASREB
Economic Efficiency	• Revenue collection efficiency	• Collection efficiency (Total billing/Total collection*100)	WASREB
	• Operational efficiency	• Operation and maintenance cost coverage (Total operating revenues/Total operating expenditures*100)	
Information Asymmetry	• Knowledge of OBA financing • Knowledge on fees and commissions on bank loans • Knowledge on the interest rate of the loans	• WSPs knowledge on OBA, fees and commissions payable and interest rates of OBA financing	

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This study was conducted to source knowledge about challenges facing water service providers in Kenya in accessing commercial financing. Research first touched on the research philosophy which the researcher had taken and the subsequent choice of the quantitative approach. The next part discussed the rationale behind the choice of the research design with further details about the population and sampling. The chapter also provided an overview of the data collection methods for the research as well as means used to analyze the data. The section concluded with research quality and ethical issues in research.

3.2 Research Philosophy

Saunders, Lewis, and Thornhill (2009) define research philosophy as the creation of a background to research, knowledge generated, and the nature of this knowledge. Elaborating further on research philosophy, Henn, Weinstein, and Foard (2005) describe it as a paradigm which refers to the way, pattern, or approach that a research is conducted. In undertaking research, it is recommended to account for the various research paradigms that describe the truth, nature of reality, beliefs, and personal values of the researcher. These factors can contribute to the conduct of the research as well as the outcome and conclusions of the study. By considering the research philosophy to use, a researcher is able to identify, comprehend, and reduce research bias (Henn et al., 2005).

The positivist research philosophy was used for this study as it aimed to be objective in collecting and interpreting the findings of the study. According to Saunders et al. (2009), a positivist approach places the researcher as the objective analyst in assessing the information gathered. The study relied on objective data analysis and collection to arrive at accurate results, the positivist approach was matched for this investigation. The main principle of positivist approach is that observation of causal effects can be used to explain social phenomenon. Additionally, Mugenda and Mugenda (2003) posits that positivist researchers explain, control, predict, observe, and describe phenomenon without interfering with the subject under investigation.

Guided by the positivism paradigm, this study aimed at generating both qualitative and quantitative data that helped address the research questions. The study thus used quantitative methods of data collection along with quantitative method which consisted of using a questionnaire and content analysis to achieve in-depth data which is favored by the positivist. Data analysis was conducted objectively as rooted for in the positivist philosophy.

3.3 Research Design

Research design is the plan by which the researcher provides answers to the research questions as (Kumar, 2011) narrates. Burn and Groves (2001) states that a plan that leads a researcher in planning and executing a research to achieve the desired goals is referred to as a research design. The study took an exploratory approach to try and describe the challenges the water service providers in Kenya face in accessing OBA-commercial financing.

3.4 Population

A population is the composition of members of a collection who have similar features from which units of analysis or individuals are selected to be included in a study (Fox & Bayat, 2007). The target population of this study comprised of 85 licensed water service providers in Kenya under regulation by the water Services Regulatory Board (WASREB). It is from this target population that the researcher carried out the sampling.

3.5 Sampling design and Sample Size

3.5.1 Sampling design

Sampling is the technique or procedure of selecting a part of a population to be included in a research (Ogula, 2005). It is the action of choosing a specific amount of members of a population in a research in a means that units chosen are representative of the population. The sampling design used was purposive sampling and simple random sampling. According to Lavrakas, (2008) purposive sampling (also known as judgment, selective or subjective sampling) is a non-probability sampling method in which the researcher relies on his or her own judgment when choosing members of population to participate in the study. Purposive sampling is done when units recruited into a sample is based on the judgment of the researcher based on their expertise in knowing about the population. The first step is making a decision as to what features that are captured in a sample. This is followed by identifying the different features that are of paramount importance to a study (Battaglia, 2008). Using sound judgment, a researcher can be able to achieve

a representative sample which saves money and time. Simple random sampling occurs where every member of the target population is selected based on chance and every unit has an equal opportunity to be recruited into the sample.

Purposive sampling was used to select the water service providers that applied for the facility. Simple random sampling was used in selecting the water service providers that did not apply for the output based aid-commercial financing. The Microsoft Excel software program was used to generate random numbers from the target population using the Random Number Generation function. The selected numbers matched the WSPs represented by its finance manager or commercial manager.

3.5.2 Sample Size

The part of the target population selected to be interviewed in a research is referred to as the sample size (Gunpinar & Gunpinar, 2018). The study used a simplified formula by Yamane (1967) in the determination of the sample size for the research. The sample size was determined at 95% confidence level and an error of 0.05. The mathematical sampling approach used was stated as:

$$n = \frac{N}{1 + N(e)^2}$$

Where,

n = sample size

N = target population

e is the acceptable margin of error i.e. for 95% confidence e=0.05

$$n = \frac{85}{1+85(0.05)^2}$$

n = 70

Representation of the Sampling Matrix

Population Description	Target Population	Sample Size
WSPs sampled randomly	71	56
WSPs sampled purposively	14	14
Total	**85**	**70**

A sample of 70 WSPs was studied for the purpose of this research. Out of which 14 water service providers were sampled purposively i.e. 8 WSPs which applied and got the funding and 6 WSPs which applied and never got the funding. 56 WSPs were sampled randomly.

3.6 Data Collection Methods

This research mostly dwelt on primary data collection methods through structured questionnaires. The questionnaires had both open and closed questions. The questionnaire had four sections which interrogated the four objectives under study. Questionnaires were administered to finance managers or commercial managers of the sampled water service providers

3.7 Research Quality

To ensure that the research maintained high quality, the researcher was independent and did not alter any variables within the study.

3.7.1 Validity

Bridget and Lewin (2005) defines validity to be the degree by which the tool used for research measures accurately what it is intended to measure. The validity of the tool was ascertained by first going through the tool and comparing it with the set objectives to ensure it answered the study questions and addressed the objectives. Secondly, an expert (supervisor) was consulted to examine the relevance of the data collection tool in fulfilling the objectives of the study.

The extent to which information collected using an instrument is accurate and meaningful in explaining a concept is referred to as validity (Mugenda & Mugenda, 2003). In making sure that the data collected was reliable and accurate, the researcher engaged the supervisor on the content and construct validity of the instrument. Additionally, the researcher used constructs from previous studies to enhance the validity of the instruments. The researcher also applied input from the defense panel on the validity of the instrument before the data collection exercise.

3.7.2 Reliability

Kothari (2008) defined reliability as the extent to which an instrument is able to provide consistent and stable outputs. Mugenda & Mugenda (2003) defined reliability as the measure of the extent that an instrument gives the similar outputs after repeated administration of the instrument. To determine the reliability of the instrument, there was a need to test reliability of the instrument.

3.8 Data Analysis and Presentation

Data was cleaned and analyzed using Statistical Package for Social Scientist (SPSS). Prior to data analysis, completed questionnaires were coded and entered into SPSS. The process of data cleaning involved checking and confirming if there were any outliers by conducting exploratory data analysis techniques. Descriptive statistical analysis was the first phase of the analysis in which means and standard deviation were used to check on the distribution of data. Descriptive statistics was used to determine the various challenges that water service providers in Kenya face in accessing the OBA-Commercial financing and the mean score were utilized to measure the degree respondents perceived a variable to be a challenge. Content analysis was used to group the challenges into broad themes of Corporate Governance challenges, Economic Efficiency challenges and Information Asymmetry challenges in light of the second objective. The researcher also used the correlation analysis in establishing relationships between variables.

3.9 Ethical Issues in Research

In upholding ethical considerations, the study adopted three principles of ethical research of respect, justice, and beneficence and this was achieved by acquiring ethical clearance from the Strathmore University Institutional Ethics Review Committee (SU-IERC). This was followed by acquiring a research permit from the National Commission for Science Technology and Innovations (NACOSTI). The researcher provided information to the respondent before any administration of the questionnaire to seek their verbal consent to interview them. The data was handled with confidentiality and privacy as each participant was interviewed alone and they were not asked for any personal identification information when providing the information. The researcher also guaranteed respondents that the data was only for academic uses only and the information would only be used for this study and will be under password protection for the soft information and under lock and key for the hard copy data. Khan (2011) advocates that research studies are only effective if they are created originally and authentically. This study did not indicate

any cases of plagiarism, in a bid to ensure it contributes authentic and original knowledge on the topic of study.

CHAPTER FOUR

DATA ANALYSIS RESULTS AND DISCUSSION

4.1 Introduction

This chapter contains the findings of the research study based on the analysis of primary data collected using the research instruments described in chapter three. The analysis of the data was conducted in accordance with the study objectives where crucial inspection was conducted to establish any patterns; with further interpretations being made as well as drawing of conclusions. Specifically, measures of dispersion as well as central tendency were used to give more information on the characteristics of the respondents. Additionally, correlation statistics was used to give a clearer view of both the direction and strength of the relationship between the variables used in the study. The primary objective of this study was to examine the challenges faced by Water Service Providers in Kenya in accessing financing; specifically, the Output Based Aid-Commercial financing. Before conducting data analysis, the data was subjected to screening to inspect any missing variables, availability of any possible outliers as well as data entry errors within the data set. A prefatory examination indicated that eight questionnaires had more than 80% of information missing thereby rendering them unsuitable for further analysis thus they were ruled out. The questionnaires with adequate data for the research were utilized for filling using SPSS.

4.2 Response Rate

Out of the 70 questionnaires submitted to the water utilities, 62 questionnaires were correctly filled and returned representing a response rate of 88.5% as shown in Table 4.1. According to Nulty (2008), a response rate of 50% and above is adequate when conducting research. Out of the 62 questionnaires that were returned by the WSPs, 8 respondents had successfully applied for and gotten the loan while 6 had applied for funding unsuccessfully; they did not get the loan.

Table 4.1 Response Rate

Questionnaires	Frequency	Percentage
Returned	62	88.5
Not returned	8	11.5
Total	70	100

4.3 Background Information

The research sought to find some background data on WSPs which was crucial for this study. The information included the size of the Water Service Provider and if they accessed OBA financing or not.

4.3.1 Size of the Water Service Provider

The respondents were requested to categorize their firm as very large, large, medium or small according to WASREB categorization. Size in this context is measured by the total connections of both water and sewerage. Very large WSPs have greater than or equal to 35,000 connections. Large WSPs have 10,000-34,999 connections. Medium WSPs have 5,000-9,999 connections. Small WSPs have less than 5,000 connections. The number of connections indicates the potential revenue base of the company. This is vital since the size of the firm is crucial in attracting financing. Larger firms tend to have larger revenue streams. The results are shown in figure 4.2

Table 4.2: Size of WSP

Size of the WSP	Total WSPs		Sampled WSPs		Returned Questionnaires	
	No.	%	No.	%	No.	%
Very Large	16	19%	10	16%	10	16%
Large	35	41%	28	45%	28	45%
Medium	18	21%	12	19%	12	19%
Small	16	19%	12	19%	12	19%
Total	85	100%	70	100%	62	100%

The findings of this study portrayed that 16% of the sampled water service providers fell under the very large category, 45% were categorized as large, 19% were medium WSPs while 19% represented the small WSPs.

4.3.2 Respondent Loan Access

The WSPs were requested to indicate their ability to access OBA-Commercial financing. The findings of these study reveal that 14 (23%) of WSPs applied for OBA financing while 48 (77%) did not apply. Of those that applied, only 8 successfully obtained the funds. 4 WSPs (50%) that

successfully obtained funding were categorized as very large water service providers. The remaining 50% was shared between 2 large and 2 medium WSPs.

Table 4.3 OBA-Commercial Finance Access

Size of the WSP	Accessed OBA	
	Freq.	%
Very Large	4	50%
Large	2	25%
Medium	2	25%
Small	0	0%
Total	8	100%

Smaller businesses tend to find it relatively difficult to obtain financing as compared to larger firms. The firms face higher costs in tackling information asymmetry with financiers. Further, the transaction costs which is a function for scale tends to be higher for smaller firms. As larger firms are characterized with diversification, they are less likely to fail hence easier to source funding and negotiate better terms.

4.4 Perceived ease of access to OBA-Commercial Financing

In this study, ease of access to OBA-Commercial financing by WSPs was identified as the dependent variable. The measurement of the variable was in terms of how different water service providers perceived the access of OBA-commercial financing to be. This was indicated on a 5-point accessibility rating scale as a list. The feedback was displayed on table 4.3

Table 4.4: perceived ease of access to OBA from the commercial lenders

Perceived ease of access	Frequency	Percentage
Not accessible	16	26%
Difficult to Access	25	40%
Not Sure	14	23%
Easily accessible	6	10%
Very easy to access	1	2%
TOTAL	62	100%

The findings of the study showed different perceptions regarding the ease of access to OBA financing. 16 (26%) thought it was not accessible at all, 25 (40%) felt it was difficult to access OBA, 14 (23%) were not sure, 6 (10%) thought it was easy to access OBA, while only 1 (2%) thought it was very easy to access OBA.

4.5 Current Sources of Infrastructure Funding Within Water and Sanitation Sector in Kenya

The first objective of this research was to establish the prevailing sources of infrastructure financing among the WSPs in Kenya. Therefore, the study requested the respondents to identify how they sourced funds to finance their infrastructure. The findings of that are summarized in figure 4.4 below

Table 4.5 Sources of finance for infrastructure in the water and sanitation sector in Kenya

	Very Large	Large	Medium	Small	Total	
	Freq.	Freq.	Freq.	Freq.	Freq.	%
County Government subsidies	1	3	2	7	13	21%
Consumer/Tariffs Contribution	7	20	8	1	36	58%
Donors	0	1	1	4	6	10%
Commercial Financing	2	4	1	0	7	11%
Total	10	28	12	12	62	100%

According to data obtained from the respondents, 36 (58%) of players within the water and sanitation sector in Kenya sourced financing for their infrastructure from consumer/ tariffs contributions. 13 (21%) indicated that they had accessed funding for their projects from county funds while 6 (10%) and 7 (11%) of the respondents indicated that their sources of finance primarily emanated from donors and the commercial financing respectively. Most of the very

large, large and medium water companies obtained their financing from tariffs. Small water companies mostly obtained their financing from the county government.

4.6 Challenges Perceived by Water Service Providers in Accessing OBA Financing

The second objective was to identify some of the prevailing challenges affecting the access to OBA-Commercial financing. Content analysis was conducted to analyze the responses from the water service providers based on the challenges they face in accessing the financing. The challenges were categorized in broad themes of corporate governance challenges, economic efficiency challenges and information asymmetry challenges which were discussed in detail below:

4.6.1 Corporate Governance and Access to OBA-Commercial Financing

To determine the level of corporate governance, the respondents were requested to indicate if their organizations had utility oversight and supervision, solid information and control systems and if they had proper financial management. Their responses are as shown in tables 4.5, 4.6, 4.7 respectively below

4.6.1.1 Utility oversight and Supervision

This parameter looks at the appointment of the board of directors and their role giving oversight to the water utility. Their responses were either yes or no. The findings based on the yes responses are illustrated in table 4.6 below

Table 4.6 Utility oversight and Supervision

Utility oversight & supervision	Very Large Freq.	Large Freq.	Medium Freq.	Small Freq.	Total Freq.	%
Functional Board of directors	10	28	9	7	54	87%
Presence of board committees for thematic areas	10	28	9	7	54	87%

Board involvement in organizational strategic plan	10	28	9	7	54	87%
Presence of an organizational constitution	10	28	12	7	57	92%
Board meets at least once per quarter	10	28	9	7	54	87%
Valid tariffs	10	28	6	4	48	77%

The findings indicated that 87% of the respondents had a functional board of directors, board committees for thematic areas, that their board was involved in coming up with organizational strategic plan, their board normally met at least once per quarter. 92% indicated that they had had an organizational constitution and 77% indicated that they had valid tariffs.

The responses collected indicated that a majority of the water service providers showed compliance in utility oversight and supervision components as per the regulator requirements.

4.6.1.2 Information and Control Systems

This parameter reviews transparency levels in compliance as well as operational functions to set organizational systems. To test information and control systems, the respondents were asked whether their organization had in place systems to help in risk management. Their responses were either yes or no. The findings based on the yes responses are illustrated in table 4.7 below

Table 4.7 Information and Control Systems

Information and control systems	Very Large Freq.	Large Freq.	Medium Freq.	Small Freq.	Total Freq.	%
A robust risk management framework	10	26	6	3	45	73%

An independent internal audit function	10	26	6	2	44	71%
Standard operating procedures for each activity	10	26	6	1	43	69%
Proper filing system	10	26	6	5	47	76%

The findings of the study indicated that 73% of the respondents had a risk management framework, 71% had an independent internal audit function, 69% had a standard operating procedures for each activity (SOP) and 76% had a proper filing system.

This meant that a majority of WSPs had in place mechanisms of identifying and controlling risks that the organization might face.

4.6.1.3 Financial Management

Financial management checks whether the utility is compliant to financial regulations. To measure the level of financial management amongst the WSPs, the study requested the respondents to indicate whether they kept proper financial records, had a competent finance manager and if their budget was prepared based on approved tariffs. Their responses were either yes or no. The findings based on the yes responses are illustrated in the table 4.8 below.

Table 4.8 Financial Management

Financial Management	Very Large Freq.	Large Freq.	Medium Freq.	Small Freq.	Total Freq.	%
Budget approved by the board	10	28	9	7	54	87%

Budget prepared based on approved tariffs	10	28	9	7	54	87%
Proper financial records	10	28	10	10	58	94%
A competent and qualified finance manager (CPA-K)	9	25	8	4	46	74%

The findings indicated that 54 (87%) of the respondents indicated that used a budget approved by the board and that they prepared budget based on approved tariffs, 58 (94%) indicated that kept had proper financial records, and 46 (74%) indicated that they had a competent and qualified finance manager (CPA-K).

4.6.1.4 WSPs perception on Corporate Governance to access OBA financing

The WSPs were requested to express their level of agreement on different aspects of corporate governance and their contribution to accessing OBA on a five-point Likert type scale that ranged from Strongly Agree (5), to Strongly Disagree (1). The respective responses were then analyzed using statistical measures of central tendency such as means and standard deviations as indicated in table 4.8 below

Table 4.8 WSPs Perception On Corporate Governance

	N	Minimum	Maximum	Mean	Std. Deviation
Level of utility oversight and supervision has an effect on ease to access OBA financing	62	3.00	5.00	4.4677	.69466
Availability of information and control system has an effect on ease to access OBA financing	62	3.00	5.00	4.3548	.60318
Proper financial management has an effect on ease to access OBA financing	62	3.00	5.00	4.5000	.56540
Valid N (list wise)	62				

The table above, the respondents strongly agreed that proper financial management has an effect on ease to access OBA financing (M=4.5, SD=0.57), they also agreed that utility oversight and supervision has an effect on ease to access OBA-Commercial financing (M = 4.47, SD= 0.69). They further agreed that availability of information and control system has an effect on ease to access OBA financing (M= 4.35, SD=0.60).

4.6.1.5 Effect of Corporate Governance on access to OBA-Commercial financing

The overall score in access to OBA financing was arrived at by computing an average of the scores from the agreement with various challenges affecting WSPs like corporate governance and perceived ease of access. These scores were used to calculate Pearson's Product Moment Correlation to establish the dependence level between the variables.

Table 4.9 Correlation between corporate governance and access to OBA-Commercial financing

		Level of utility oversight and supervision has an effect on ease to access OBA financing	Availability of information and control system has an effect on ease to access OBA financing	Proper financial management has an effect on ease to access OBA financing	Perceived ease of access to OBA
Level of utility oversight and supervision has an effect on ease to access OBA financing	Pearson Correlation	1	.145	.104	.304*
	Sig. (2-tailed)		.260	.420	.016
	N	62	62	62	62
Availability of information and control system has an effect on ease to access OBA financing	Pearson Correlation	.145	1	.048	.207
	Sig. (2-tailed)	.260		.711	.107
	N	62	62	62	62
Proper financial management has an effect on ease to access OBA financing	Pearson Correlation	.104	.048	1	.503**
	Sig. (2-tailed)	.420	.711		.000
	N	62	62	62	62
Perceived ease of access to OBA	Pearson Correlation	.304*	.207	.503**	1
	Sig. (2-tailed)	.016	.107	.000	
	N	62	62	62	62

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

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

PPMC analysis shows a high positive relationship between proper financial management and ease of access to OBA financing ($r = 0.5$; $p = 0.000$; $n = 62$). Further, the analysis revealed the existence of a moderate positive relationship between level of utility oversight and supervision and ease of access to OBA financing ($r = 0.3$; $p = 0.16$; $n = 62$). The analysis also shows low positive relationship between availability of information and control system and ease of access to OBA financing ($r=0.2$; $p = 0.11$; $n = 62$). The findings can generally be interpreted to mean that proper financial management within the WSP is the most crucial aspect towards securing OBA financing. Other factors such level of utility oversight and supervision have shown that, a slight decrease on these aspects would moderately affect their accessibility to OBA financing. On availability of information and control system, the findings reveal that a change on this aspect would affect WSP accessibility to source financing at a lower degree.

The findings of the study would imply that to a larger extent, proper financial management is highly required by OBA financiers in order to advance loans as audit reports portray the financial health of the WSP. In a situation where lenders are not certain about the credit worthiness of the firm or its cash flow, it raises uncertainty on the ability of the WSP to service the loan. Given that a firm's ability to service its loan depends on its crucial cost drivers within its operations, the ability to secure OBA financing would hence depend on the ability of the WSP to ensure that there is a solid information and control system. The findings may also mean that utility oversight and supervision still offer a challenge to the WSPs as maintaining a quality board of directors is vital in ensuring oversight, vision and maintaining the efficiency and autonomy of the WSP which can have implications on the performance of a firm.

4.6.2 Economic Efficiency and Access to OBA-Commercial Financing

The other independent variable was Economic efficiency. To determine the effect of WSPs Economic efficiency on access to OBA, the Revenue collection efficiency and Operational efficiency was calculated from the data the respondents gave as per the WASREB guidelines.

4.6.2.1 Revenue Collection efficiency

Revenue Collection Efficiency is defined as the ratio of the total collection to the total billing done over the same period expressed as a percentage (Total collected/Total billed*100) as defined by the regulator. It is used to determine how efficient the revenue management system of a utility is. The amount of revenue collected by a utility and not the amounts billed is what directly impacts

its ability to fund its activities. For a utility to have efficient revenue collection, the following levels of efficiencies have been defined by WASREB:

Revenue collection efficiency	Sector Benchmarks
>95%	Good
95-85%	Acceptable
<85%	Not Acceptable

Source: WASREB

Table 5.1 Revenue Collection efficiency

Revenue Collection Efficiency	Very Large	Large	Medium	Small	Total	
	Freq.	Freq.	Freq.	Freq.	Freq.	%
>95%	2	10	2	4	18	29%
95-85%	6	13	4	6	29	47%
<85%	2	5	6	2	15	24%
Total	10	28	12	12	62	100%

According to the findings of the study, 29% of the respondents had above 95% revenue collection efficiency which according to sector benchmarks is good, 47% had between 85% and 95% efficiency, which is acceptable, whereas 24% had below 85% revenue collection efficiency which is unacceptable according to the sector benchmarks.

4.6.2.2 Operational Efficiency

Operational efficiency on the other hand is the degree to which revenues generated meet the cost of running a utility (Total operating revenues/Total operating expenditures*100) according to Wasreb. O+M Cost Coverage is important to the performance of a utility as it is a first step towards full cost coverage. Operational efficiency guarantees financial sustainability of a utility in the long term. At over 150%, the performance of a water service provider in terms of cost coverage is classified as good. This means that it is able to cover its O+M costs, service loans and renew its assets. Performance of between 101% to 149% is considered acceptable. A performance of 100%

is considered not acceptable, this means that the utility's funds does not cover the operation and maintenance cost of the utility. WSPs in such instances would need subsidies from the county government or funds from donors to fully cover their costs.

% O+M Cost Coverage	Cost Components	Sector Benchmarks
≥150%	Full Cost Recovery	Good
101-149%	O+M Cost + Debt Service + Minor Investments	Acceptable
100%	O+M Cost	Not Acceptable

Source: WASREB

Table 5.2 Operational efficiency

Operational Efficiency	Very Large	Large	Medium	Small	Total	
	Freq.	Freq.	Freq.	Freq.	Freq.	%
≥150%	0	0	0	1	1	1%
101-149%	8	15	4	4	31	50%
100%	2	13	8	7	30	49%
Total	10	28	12	12	62	100%

The study found that 1 (1%) of the respondents had above 150% operational efficiency which measures as good performance, 31 (50%) had between 101 and 149% operational efficiency which measures as acceptable performance, whereas 30 (49%) had below 100% operational efficiency which measures as unacceptable performance according to the sector benchmarks.

4.6.2.3 WSPs perception on Economic efficiency on access to OBA-Commercial financing

The WSPs were requested to indicate on a five-point Likert type scale, that ranges from Strongly Agree (5), to Strongly Disagree (1), their level of agreement of different aspects of economic efficiency and their contribution to accessing OBA. Their responses were analyzed using means and standard deviations as indicated in table 5.3 below

Table 5.3 WSPs Perception On Economic Efficiency

	N	Minimum	Maximum	Mean	Std. Deviation
Revenue collection efficiency has effect on access to OBA	62	2.00	5.00	4.3065	.58921
Operational efficiency has effect on access to OBA	62	2.00	5.00	4.1290	.85859
Valid N (listwise)	62				

The table shows that the respondents expressed strong agreement to the argument that Revenue collection efficiency has effect on access to OBA (M=4.3, SD= 0.59). They further agreed that operational efficiency had effect on access to OBA (M= 4.1, SD=0.86).

4.6.2.4 Effect of Economic Efficiency on access to OBA-Commercial financing

The overall score for access to OBA financing was obtained by calculating the average of the scores from the agreement with the two aspects of economic efficiency various the perceived ease of access to OBA-commercial financing. These scores were used to calculate the Pearson's Product Moment Correlation in order to determine the magnitude as well as direction of correlation between the variables and the findings presented in Table 5.4

Table 5.4 Correlation between economic efficiency on access to OBA financing

		Revenue collection efficiency has effect on access to OBA	Operational efficiency has effect on access to OBA	Perceived ease of access to OBA
Revenue collection efficiency has effect on access to OBA	Pearson Correlation	1	.309*	.508**
	Sig. (2-tailed)		.014	.000
	N	62	62	62
Operational efficiency has effect on access to OBA	Pearson Correlation	.309*	1	.309*
	Sig. (2-tailed)	.014		.015
	N	62	62	62
Perceived ease of access to OBA	Pearson Correlation	.508**	.309*	1
	Sig. (2-tailed)	.000	.015	
	N	62	62	62

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

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

The PPMC analysis indicated that there was a high positive relationship between revenue collection efficiency and access to OBA (r=0.508; p = 0.00; n = 62). It showed operational efficiency has a moderate positive effect on access to OBA (r= 0.309; p=0.015; n =62).

These findings above can generally be interpreted to mean that as the level of revenue collection among WSPs increases, the ability of WSPs to access OBA financing tends to highly increase and vice versa. The results also depict as operational efficiency by WSPs improve, the ease of access to OBA financing tends to increase at a moderate rate.

4.6.3 Information Asymmetry and Access to OBA-Commercial Financing

In regards to information asymmetry, respondents were requested to indicate whether they had any knowledge of OBA financing, fees and commissions on bank loans and also whether they had knowledge on interest rate of loans and collateral requirements. Their responses were either yes or no. The findings based on the yes responses are illustrated in table 5.5 below.

Table 5.5 Information asymmetry

Information Asymmetry	Very Large Freq.	Large Freq.	Medium Freq.	Small Freq.	Total Freq.	%
Knowledge of OBA financing	10	28	9	7	53	85%
Knowledge of fees and commissions	10	28	9	7	53	85%
Knowledge of interest rate and collateral requirements	10	28	10	10	58	94%

From the above table, it can be established that a majority of more than 80% of the WSPs had knowledge of OBA, fees and commissions, interest rates, collateral requirements.

4.6.3.1 WSPs perception on Information Asymmetry on access to OBA-Commercial financing

The WSPs were asked to indicate on a five-point Likert type scale ranging from Strongly Agree (5), to Strongly Disagree (1), their level of agreement of different aspects of information asymmetry and their contribution to accessing OBA. Their responses were analyzed using means and standard deviations as indicated in table 5.6 below

Table 5.6 WSPs perception on Information Asymmetry on access to OBA-Commercial financing

	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge of OBA financing has an effect on access to OBA	62	2.00	5.00	4.3065	.58921
Knowledge of fees and commissions has an effect on access to OBA	62	1.00	5.00	3.4677	1.66662
Knowledge of interest rate and collateral requirements has an effect on access to OBA	62	1.00	5.00	4.0000	1.56813
Valid N (listwise)	62				

The figures in the table show that the respondents demonstrated strong agreement that knowledge of the OBA financing has an effect on access to OBA (M=4.31, SD=0.58). Likewise, the respondents agreed that knowledge on the interest rate of loans and collateral requirements also had an effect on access to OBA (M=4.00, SD=1.57). The respondents further felt that to some degree, knowledge of fees and commissions affected access to OBA (M= 3.4, SD=1.67).

4.6.3.2 Effect of Information Asymmetry on access to OBA-Commercial financing

The overall score for access to OBA financing was obtained by computing the average of the scores from the agreement with various aspects of information asymmetry challenges affecting WSPs like knowledge of OBA financing, knowledge of fees and commissions, knowledge of interest rates and collateral requirements and perceived ease of access. These scores were then used in computing the Pearson's Product Moment Correlation in order to determine the magnitude and direction of correlation between the variables and the findings presented in Table 5.7

Table 5.7 Correlation between information asymmetry and access to OBA financing

		Knowledge of OBA financing has an effect on access to OBA	Knowledge on fees and commissions has effect on access to OBA	Knowledge on the interest rate of loans and collateral requirements has an effect on access to OBA	Perceived ease of access to OBA
Knowledge of OBA financing has an effect on access to OBA	Pearson Correlation	1	.038	.132	.220
	Sig. (2-tailed)		.772	.307	.085
	N	62	62	62	62
Knowledge on fees and commissions has effect on access to OBA	Pearson Correlation	.038	1	.164	.188
	Sig. (2-tailed)	.772		.202	.144
	N	62	62	62	62
Knowledge on the interest rate of loans and collateral requirements has an effect on access to OBA	Pearson Correlation	.132	.164	1	.136
	Sig. (2-tailed)	.307	.202		.292
	N	62	62	62	62
Perceived ease of access to OBA	Pearson Correlation	.220	.188	.136	1
	Sig. (2-tailed)	.085	.144	.292	
	N	62	62	62	62

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

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

The PPMC analysis indicate that there was a low positive relationship between knowledge of OBA financing and access to OBA ($r = 0.220$; $p = 0.085$; $n = 62$). The findings also reveal a low positive relationship between knowledge on fees and commissions and access to OBA ($r = 0.188$; $p = 0.144$; $n = 62$). The analysis also shows a low positive relationship between knowledge on the interest rate of loans and collateral requirements and access to OBA ($r = 0.136$; $p = 0.292$; $n = 62$).

A low positive relationship between knowledge of OBA financing and ease of access to OBA is present according to the study depicting a slight positive change on one factor if the other increases. Same effect can be seen from the knowledge on fees and commissions as well as between

knowledge on the interest rate of loans and collateral requirements and ease of access to OBA financing.

4.6.4 Ranking the Challenges

The respondents were asked to rank the three challenges from the most prevalent to the least prevalent. This was analyzed using means to determine which challenge scored highly perceived by the respondents as a major hindrance to accessing OBA-Commercial Financing.

Table 5.8 Ranking the challenges

	WSP SIZE						
	Very Large	**Large**	**Medium**	**Small**	**Total**	**Freq.**	**Rank**
Corporate governance	1	4	4	4	13	21%	2
Economic Efficiency	9	24	7	6	46	74%	1
Information Asymmetry	0	0	1	2	3	5%	3
Total					62	100%	

From the above table, the highest ranked challenge is economic efficiency challenges followed by corporate governance challenges then lastly information asymmetry. A majority of the respondents, 74%, felt that economic efficiency was a major challenge. Out of this, 9 respondents fell under the very large category, 24 respondents were large, 7 respondents were medium and 6 respondents were small WSPs. All categories of the water companies indicated economic efficiency as their main challenge.

Corporate governance challenges ranked second with 21% of the respondents citing it as a prevalent challenge. Out of this, 1 WSP was very large, 4 were large, 4 were medium and 4 were small. Medium and small WSPs formed a majority.

Information asymmetry ranked third with 5% of the respondents citing it as a major challenge. The respondents who ranked it as a challenge were small and medium WSPs. None of the very large and large WSPs indicated it as a challenge.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to study the challenges faced by water service providers across Kenya in accessing the output-based aid commercial financing. In chapter four, the findings of this paper gathered from the analysis were interpreted and presented. In this chapter, the findings are summarized, discussed and conclusions are drawn based on the study objectives. Additionally, recommendations are given in light of the conclusions reached. Suggestions for further research are also given in this chapter. Finally, the chapter highlights the contributions of this paper to theory, knowledge and policy.

5.2 Summary of Findings

This study sought to pursue one main objective and two specific objectives. The main objective was to examine the challenges faced by Water Service Providers in Kenya in accessing the Output Based Aid-Commercial financing. In the study, Corporate Governance, Economic Efficiency and Information Asymmetry were the independent variables. The dependent variable was Access to OBA-Commercial financing.

This paper covered a sample size of 62 small water service providers, achieving an 88.2% response rate. Out of the 62 water service providers, 10 (16%) were very large firms, 28 (45%) were large, 12 (19%) were medium while small water service providers made 12 (19%) of the total WSPs within the study.

On the perceived ease of access to OBA financing, 25 (40%) felt that it was difficult to access OBA, 16 (26%) felt it was not possible at all to access OBA, 14 (23%) felt that they were not sure if they could access OBA while 6 (10%) felt it was easy to access OBA. Only 1 (2%) felt it was very easy to access OBA funding.

5.2.1 Sources of Water and Sanitation Infrastructure Financing

The first objective of the study was to determine the current sources of infrastructure financing within the water and sanitation sector. The study established that there were various sources of financing water and sanitation infrastructure including tariffs contributions, county governments,

donors and commercial lenders. It was however established that consumer/ tariff contribution was the main source of financing for most (58%) of water service providers. County governments came in second with 21% of the respondents indicating that they had accessed financing for their projects from county funds while 10% came from donors and 11% of the respondents indicated that their sources of finance primarily emanated from commercial financing. Most of the very large, large and medium water companies obtained their financing from tariffs. Small water companies mostly obtained their financing from the county government.

The second objective of the study was to examine the challenges facing water service providers in Kenya in accessing the Output-Based Aid-Commercial financing including corporate governance challenges, Economic efficiency challenges and Information asymmetry.

5.2.2 Corporate Governance and Access to OBA-Commercial Financing

Corporate governance was assessed in terms of utility supervision and oversight indicators, information and control systems indicators and financial management indicators. More than 60% of the respondents showed good corporate governance structures as they had in place measures to ensure utility oversight and supervision, had solid information and control systems and good financial management.

Utility oversight and supervision of a WSP was assessed in terms of presence of functional board, presence of board committees for thematic areas for example the risk management committee and the finance committee, and if their board normally met at least once per quarter. Other indicators were if their board members were involved in coming up with the organizational strategic plan to give the organization a sense of direction, if they had an organizational constitution and if they had valid tariffs.

Information and control systems was measured in terms of if the WSP had a risk management framework, if they had an independent internal audit function, if they had standard operating procedures for each activity (SOP) and if they had a proper filing system.

Financial management on the other hand was measured in terms of the whether the WSPs used a budget approved by the board, if they prepared the company budget based on approved tariffs, if they had proper financial records and if they had a competent and qualified finance manager (CPA-K) in charge of the finance department.

The findings indicated that there was a high positive relationship between proper financial management and ease of access to OBA financing ($r = 0.5$; $p = 0.000$; $n = 62$) and also a moderate positive relationship between level of utility oversight and supervision and ease of access to OBA financing ($r = 0.3$; $p = 0.16$; $n = 62$). The analysis also showed low positive relationship between availability of information and control systems and ease of access to OBA financing ($r=0.2$; $p = 0.11$; $n = 62$). These findings can generally be interpreted to mean that proper financial management within the WSP is the most crucial aspect towards securing OBA financing. Other factors such level of utility oversight and supervision have shown that, a slight change on these aspects would moderately affect their accessibility to OBA financing. On availability of information and control system, the findings reveal that a change on this aspect would affect WSP accessibility to source financing at a lower degree.

5.2.3 Economic Efficiency and Access to OBA-Commercial Financing

Economic efficiency was measured in terms of revenue collection efficiency and operational efficiency. The findings of the study indicated that 18 (29%) of the respondents had above 95% revenue collection efficiency which according to sector benchmarks is good performance. Most of the WSPs that fell in this category were large. 29 (47%) had between 85% and 95% efficiency, which is acceptable, whereas 15 (24%) had below 85% revenue collection efficiency which is unacceptable according to the sector benchmarks a majority being the medium WSPs. Under operational efficiency, the findings showed that only 1 (1%) of the respondents had above 150% operational efficiency which measures as good performance, 31 (50%) had between 101 and 149% operational efficiency which measures as acceptable performance, whereas a substantial 30 (49%) had below 100% operational efficiency which measures as unacceptable performance according to the sector benchmarks. A majority of the WSPs had acceptable performance. This generally meant that WSPs had economic inefficiencies which needed to be addressed. The inefficiencies affected the financial health of the companies.

The PPMC analysis carried out indicated that there was a high positive relationship between revenue collection efficiency and access to OBA ($r=0.508$; $p = 0.00$; $n = 62$), and also a moderate positive relationship operational efficiency has effect on access to OBA ($r= 0.309$; $p=0.015$; $n =62$). These findings can generally be interpreted to mean that as the level of revenue collection among WSPs increases, the ability of WSPs to access OBA financing tends to highly increase and

vice versa. The results also depict as operational efficiency by WSPs improve, the ease of access to OBA financing tends to increase at a moderate rate.

5.2.4 Information Asymmetry and Access to OBA-Commercial Financing

Information asymmetry was assessed by knowledge on OBA financing, knowledge on fees and commission, interest rates and collateral requirements. A majority of the WSPs had knowledge of OBA, fees and commissions, interest rates, collateral requirements.

The PPMC analysis indicated that there was a low positive relationship between knowledge of OBA financing and access to OBA ($r = 0.220$; $p = 0.085$; $n = 62$). They further revealed a low positive relationship between knowledge on fees and commissions and access to OBA ($r = 0.188$; $p = 0.144$; $n = 62$) and a low positive relationship between knowledge on the interest rate of loans and collateral requirements and access to OBA ($r = 0.136$; $p = 0.292$; $n = 62$). A low positive relationship between knowledge of OBA financing and ease of access to OBA is present according to the study depicting a slight positive change on one factor if the other increases. Same effect can be seen from the knowledge on fees and commissions as well as between knowledge on the interest rate of loans and collateral requirements and ease of access to OBA financing.

5.2.5 Ranking of the Challenges hindering WSPs access to OBA-Commercial Financing

From the findings, the highest ranked challenge was economic efficiency challenges followed by corporate governance challenges then lastly information asymmetry. A majority of the respondents, 74%, felt that economic efficiency was a more pressing challenge compared to Corporate governance and Information asymmetry. High non-revenue water was cited as a major cause of revenue collection inefficiency this is because treated water that gets lost before they reach the consumer, either due to illegal connections or pipe leakages, cannot be billed hence a loss in revenue to the WSP. High electricity bills was cited as a major cause of operational inefficiency. This was mostly because of the high cost of electricity used in pumping water from the water intake point to the consumer. WSPs that uses gravity instead have lower electricity costs, the savings are therefore used to finance other expenses in the water company. All categories of the water companies indicated economic efficiency as their main challenge.

Corporate governance challenges ranked second with 21% of the respondents citing it as a prevalent challenge. Medium and small WSPs formed a majority of those who reported this as a challenge. This is because the small and medium WSPs are still undergoing growth and do not yet

have solid corporate structures in place. In some instances, the board of directors had been appointed but did not meet after every 3 months as required by the Mwongozo code. Interference of the WSP operations by politicians was also cited by WSPs as a hindrance to the autonomy of the organization. 2 small WSPs indicated that they did not have a finance manager and that they only had an accountant who had been seconded from the county government. This means that the accountant had to juggle between his or her roles at the county offices and the water company and in most cases the water company suffered.

Information asymmetry ranked third with 5% of the respondents citing it as a major challenge. The respondents who ranked it as a challenge were small and medium WSPs. None of the very large and large WSPs indicated it as a challenge as they had systems in place like ICT infrastructure, website and a communications department. They were also aware of the OBA financing since most of the ones who accessed the financing and those who applied and did not get the financing fell under the large and very large category.

5.3 Discussions from Findings

5.3.1 Sources of Infrastructure Financing in the Water and Sanitation Sector in Kenya

The study sought to find some of the current sources of infrastructure financing within the water and sanitation sector in Kenya, determine the challenges facing water service providers in Kenya in accessing output-based aid commercial financing broadly being WSP corporate governance challenges, Economic efficiency challenges and Information asymmetry challenges. The study also sought to identify how the challenges ranked in terms of persistence and prevalence.

On the current sources of infrastructure financing within the water and sanitation sector in Kenya, these findings are consistent with a large body of empirical study by Baietti (2005) on capital requirements for water service providers in developing nations. The findings of Baietti (2005) indicate that the only long term sustainable source of financing for WSPs within these countries is through use of tariffs. A report by the Water and Sanitation Program (2015) points that an improvement in revenue generated by the WSPs has increased since 2012 owing to the introduction of various reforms within the water and sanitation sector. The reforms were focused on improving billings, expanding their network and increasing water tariffs. Use of tariffs has been implemented to finance maintenance and operational cost. The situation enables WSPs finance their infrastructure from the collections. A study by OECD (2009, p. 30) agrees with the findings

of this study by further confirming that tariffs are some of the ultimate sources of revenue to cover for costs associated with water services providers.

5.3.2 Corporate Governance Challenges and Access to OBA-Commercial Financing

The second objective was to identify some of the prevailing challenges affecting the access to OBA. The challenges were categorized in terms of Corporate governance challenges, Economic efficiency challenges and Information asymmetry. The study discovered that financial management had a high positive relationship with access to finance. The findings meant that lack of proper financial management was the paramount challenge facing WSPs in Kenya to source OBA financing. These findings conform to literature by the Water and Sanitation Program (2015, p.18) where it states that ring-fencing of revenue streams emanating from tariffs is crucial to create re-investment thereby calling for greater accountability. The body further states that WSPs can apply for funding from WSTF among other financial outlets; however, the lenders demand a review of the WSPs cash projections, and financial models to verify if the set tariffs are efficient to cover loan repayment and cost.

An empirical research undertaken by USAID's WASH-FIN Program of 2017 in Kenya bear same results with this study in regards to the challenge of corporate governance. The USAID research reveal an imbalance between devolution of mandates and devolution of capacity does not bring results. According to the research, uncertainty within county government on governance responsibilities, rules and resources affects the ability of WSPs to borrow (Advani, 2016). For instance in their study they found out that from the $1.75 million that so far had been raised for two WSPs, five other potentially viable commercial loan transactions totaling $11.5 million, that were under discussion, were not able to close due to either shareholders (county governments) changed the board of directors or the management teams without minding their capacity, changed the organizational structure of WSPs, or were not convinced about the potential sources of financing being used by the WSPs. Governance challenges and uncertainties tend to bring unacceptable level of risk in private sources of capital. Therefore, establishment and nurturing of strong internal governance as well as transparent relationship between WSPs and county governments is crucial in achieving financial access goals for WSPs.

5.3.3 Economic Efficiency Challenges and Access to OBA-Commercial Financing

The findings of (Demirguc-Kunt, Beck, & Honohan, 2008) validate the positive correlation between economic efficiency and access to OBA. According to a study by (Chepyegon & Kamiya, 2018), lenders of commercial financing demand to be certain that the revenue streams of the WSP are stable and sufficient to pay off the debt. The lenders demand that the WSP's financial performance need to be consistent ensure smooth running of operations and service the loan. The research therefore points out WSPs need to put in practical control mechanisms that gives them the ability to monitor their project performance and ensure proper flow of cash flows.

Another study done in Peru indicate that operational efficiency is key to securing financing as it limits the attractiveness of the WSP to financiers (THE WORLD BANK GROUP, 2010). According to the findings of Goksu et al., (2017), operational inefficiencies quickly lead to reduced revenue base and affect the credibility of the WSP rendering them nearly impossible to qualify for OBA financing.

5.3.4 Information Asymmetry Challenges and Access to OBA-Commercial Financing

The findings of a case study conducted by (Chepyegon & Kamiya, 2018) correspond to the findings of this research on effect of information asymmetry on access to OBA financing. According to the findings, strengthening of the financial access for the WSPs can be done through uptake of best practice by employing improvement of knowledge for players within this sector. The case study notes that in Family bank for instance, for finance to be available general understanding amongst the WSPs needs to be heightened (Kenya Markets Trust, 2019). As this study finds a positive relationship between knowledge on interest rates on loans and access to OBA, it is backed by the findings of Miller (2013) where the researcher acknowledged that in a situation where borrowers know the interest caps, they can negotiate for lower rates with the lenders hence being able to access financing.

5.4 Conclusion from the Findings

There are several conclusions that can be done from the findings of this paper. To begin with, it can be concluded that the primary sources of financing for WSPs are consumer tariffs. It can also be established from this study that there are several challenges that hinder WSPs from getting OBA-Commercial financing. These are generalized into corporate governance challenges, economic efficiency challenges and information asymmetry challenges. Economic efficiency

challenges rank the highest and most persistent. Finally, it can be established from the analysis conducted those different challenges have different impacts on the ability of WSPs to access OBA financing.

5.5 Contributions of the Study

5.5.1 Contributions to theory

This study has made some contributions to theory. One of the contributions is as shown below: The anticipated income theory was developed by H.V. Prochanow in 1944 proposes and try to explain that despite the feature and nature of the business of the borrower, the bank should plan to liquidate the term-loan from the expected income of the borrower. According to this theory, the lender holds either movable or immovable securities of the borrower and further puts restrictions on the financial activities of the borrower. At the time of granting a loan, the bank takes into consideration not only the security but the anticipated earnings of the borrower. This theory fulfills the three objectives of liquidity, safety and profitability. The bank is assured of liquidity when the borrower saves and repays the loan on a regular basis in instalments. It satisfies the safety principle because the bank grants a loan not only on the basis of a good security but also on the ability of the borrower to repay the loan. The findings of this study show that there was a strong positive relationship between revenue collection efficiency and access to OBA-Commercial financing. Revenue collection efficiency affects the amount of revenue collected by the water company. A bank therefore assesses the revenue collection efficiency of a water company to determine if the it would be able to collect sufficient revenues to service the loan.

5.5.2 Contributions to policy

From the analysis in the study, consumer tariffs are a primary source of financing for most water service providers. Policy makers may use this information to come up with tariffs that allow water companies to break even and meet their O&M costs.

It is worth noting that most water companies ranked Economic efficiency challenges as the highest. A number of them showed an unacceptable performance in revenue collection efficiency and operational efficiency. This study helps inform policy makers to know which challenges to prioritize when developing interventions aimed at eliminating the main limiting factors for the increased participation of water companies in economic development with financing of water service providers.

5.5.3 Contribution to the Body of Knowledge

This paper's contribution to the body of knowledge is as shown below;

The study found that most water companies sourced financing for infrastructure from consumer tariffs this is in line with a study by OECD (2009) agrees report that tariffs are some of the ultimate sources of revenue to cover for costs associated with water services providers. Economic efficiency challenges ranked top and was found to have a strong positive relationship with access to OBA-Commercial financing.

5.6 Recommendations

To address Economic efficiency challenges, water service providers are advised to reduce non-revenue water by using high quality pipe that are not prone to bursting and to disconnect illegal connections. This will greatly boost the revenues collected. Operational inefficiency is mostly brought about by very high electricity costs incurred when pumping water. This can be addressed by using green energy like solar power to substitute electricity power. This will greatly reduce the costs and lower the O&M costs.

5.7 Limitations of the Study

The study was limited in scope to Corporate governance challenges, Economic efficiency challenges and Information asymmetry. The study also only looked at public licensed water service providers. Private water service providers were not sampled in this case because ownership differed from that of public water companies and this could have skewed the data obtained during data collection especially in terms of corporate governance.

5.8 Areas for further Research

Given that our analysis has focused corporate governance challenges, Economic efficiency challenges and information asymmetry, supplementary research can be done on other challenges that hinder water companies from accessing financing

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APPENDICES

Appendix I: Consent Form

TITLE OF STUDY
Challenges facing Water Service Providers in Kenya in accessing the Output Based Aid-Commercial Financing

PRINCIPAL INVESTIGATOR
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Strathmore University
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PURPOSE OF STUDY

You are being asked to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information.

The purpose of this study is to unearth the numerous hurdles which stifle the water service providers' ability to sustainably fulfill their legal obligation of providing water and sanitation services without relying on aid support from government or non-governmental organizations. The study will focus on Challenges facing Water Service Providers in Kenya in accessing the Output Based Aid-Commercial Financing

STUDY PROCEDURES

In this study you are required to complete a questionnaire which will take you about ten minutes. Your participation in this study is voluntary and you are free to withdraw from it anytime. The research data collected will only be utilized for academic purposes and treated with utmost confidentiality. The findings of my research may be availed to your institution upon request.

RISKS

There are no known or foreseeable risks to this study. You may still decline to answer any or all questions and you may terminate your involvement at any time if you choose.

BENEFITS

There will be no direct benefit to you for your participation in this study. However, we hope that the information obtained from this study may contribute to the body of knowledge on the main limitations for WSPs access to commercial finance. This will serve as a starting point in developing interventions aimed at eliminating the main limiting factors for the increased participation of WSPs in economic development.

CONFIDENTIALITY

Your responses to this questionnaire will be anonymous. Please do not write any identifying information on your questionnaire.

Participant data will be kept confidential except in cases where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

CONTACT INFORMATION

If you have questions at any time about this study, you may contact the researcher whose contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact the Strathmore University.

VOLUNTARY PARTICIPATION

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

CONSENT

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

Appendix II: Questionnaires for Water Service Providers

Hello, My Name is Heather Cherotich, a student at Strathmore University Business School pursuing MSc. Development Finance. It is for the purpose of this course that I am undertaking to do a research on the challenges that water service providers face in Accessing Output Based Aid-Commercial Financing. This WSP has been selected for this information collection exercise.
The objective of this questionnaire is therefore to collect data that would help to better understand the challenges facing water service providers in Accessing Output Based Aid-Commercial Financing.
The answers you give will be kept strictly confidential – that means that the information you give will not be traced back to you. The information you provide will be combined with that from other WSPs, and analyzed together as combined views.

PART A: GENERAL

1.	What category does this WSP fall under in terms of size?	a) Very Large b) Large c) Medium d) Small
2.	What are your main sources of financing infrastructure?	a) County Government subsidies b) Consumer/Tariffs Contribution c) Donors d) Private Sector

3.	Have you heard of the OBA-Commercial financing?	a) Yes b) No
4.	Has your WSP ever applied for the OBA-Commercial financing?	a) Yes b) No
5.	Did your WSP secure the OBA-Commercial financing after applying?	a) Yes b) No
6.	**If no**, what were the challenges that you faced in securing OBA-Commercial financing?	a) Poor corporate governance b) Cash flow

		c) Operational and maintenance efficiency d) Existing debt e) Other, specify
7.	Please rank the challenges mentioned above in order from the most persistent to the least persistent	
8.	On a scale of 1-5, 1 for not accessible at all and 5 for very easy to access, how easy is it to access OBA-Commercial financing?	1=Not accessible at all, 2= Difficult to access, 3= Not sure, 4= Easy to access and 5 = very easy to access

Part B: WSP Corporate Governance

1.	Does the WSP have a functional board?	a) Yes b) No
2.	If yes, how regularly does the board meet?	
3.	Is the board involved when developing the organizational strategic plan?	a) Yes b) No
4.	Does the WSP have an organizational constitution?	a) Yes b) No
5.	Is the internal audit position filled by a qualified internal auditor?	a) Yes b) No
6.	Does the WSP have a robust risk management framework?	a) Yes b) No
7.	Does the WSP have standard operating procedures for each activity?	a) Yes b) No
8.	Does the WSP keep a proper filing system?	a) Yes b) No
9.	Does the WSP have a valid tariff?	a). Yes

		b). No c). In the process of being issued
10.	Is the budget prepared based on approved tariffs?	a) Yes b) No
11.	Is the budget approved by the board?	a) Yes b) No
12.	Does the WSP keep proper financial records?	a) Yes b) No
13.	Is the finance department led by a competent and qualified finance manager (CPA-K)	a) Yes b) No
14.	On a scale of 1-5, 1 for strongly disagree and 5 for strongly agree what is your opinion on the statement below: Utility Oversight and supervision has an effect on access to OBA-Commercial financing.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
15.	On a scale of 1-5, 1 for strongly disagree and 5 for strongly agree what is your opinion on the statement below: Information and control systems has an effect on access to OBA-Commercial financing.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
16.	On a scale of 1-5, 1 for strongly disagree and 5 for strongly agree what is your opinion on the statement below: Financial management has an effect on access to OBA-Commercial financing.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

Part C: Economic Efficiency

1.	What is the average monthly revenue of the WSP in:	

	Water supply Sewerage	....
2.	What is the average monthly billing of the WSP in: Water supply Sewerage	 ....
3.	What is the average monthly expenditure of the WSP in: Operations and maintenance Staff cost Administration cost Electricity costs	 ....
4.	On a scale of 1-5, 1 for strongly disagree and 5 for strongly agree what is your opinion on the statement below: Revenue collection efficiency has an effect on access to OBA-Commercial financing.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
5.	On a scale of 1-5, 1 for strongly disagree and 5 for strongly agree what is your opinion on the statement below: Operational efficiency has an effect on access to OBA-Commercial financing.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

Part D: Information Asymmetry

1.	How did you get to know about the OBA Fund	a). WSTF b) Bank/Loan provider c) Local community group d) Adverts in the media e) Other WSPs f) Other, specify

2.	Are you aware of the repayment terms of the OBA loan?	a) Yes b) No
3.	Do you know of the collateral requirements of getting the OBA-Commercial financing?	a) Yes b) No
4.	Do you know of the interest rates of the OBA-Commercial financing?	a) Yes b) No
5.	On a scale of 1-5, 1 for strongly disagree and 5 for strongly agree what is your opinion on the statement below: Knowledge of OBA financing has an effect on access to OBA-Commercial financing.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
6.	On a scale of 1-5, 1 for strongly disagree and 5 for strongly agree what is your opinion on the statement below: Knowledge on bank fees and commissions has an effect on access to OBA-Commercial financing.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
7.	On a scale of 1-5, 1 for strongly disagree and 5 for strongly agree what is your opinion on the statement below: Knowledge of interest rates and collateral requirements has an effect on access to OBA-Commercial financing.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

Appendix III: List of Water Service Providers that received OBA funding

1. Embu Water and Sanitation Company

2. Mathira Water and Sanitation Company

3. Nyeri Water and Sewerage Company

4. Muranga South Water and Sanitation Company

5. Kisumu Water and Sanitation Company

6. Naivasha Water and Sanitation Company

7. Muranga Water and Sanitation Company

8. Nol-turesh Water and Sanitation Company

Appendix IV: List of Water Service Providers that applied for but never received OBA funding

1. Malindi Water and Sewerage Company Limited

2. Thika Water and Sewerage Company

3. Eldoret Water and Sanitation company Limited

4. Nakuru Water and sewerage Company

5. Narok Water and Sewerage Company Limited

6. Bomet Water and Sanitation Company