RELATIONSHIP BETWEEN DONOR OUTPUT BASED AID FINANCING STRATEGY AND PERFORMANCE OF WATER PROJECTS IN NYERI COUNTY.

ESTHER WANGARI GIKAMA

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF ARTS IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF A DEGREE IN MASTER OF PROJECT PLANNING AND MANAGEMENT UNIVERSITYOF NAIROBI

2020

DECLARATION

This research proposal is my original work and has not been presented in any University or institution of higher learning. No part of the proposal should be reproduced without authority of the author or and of University of Nairobi.

Sign ..... **Date.....**

ESTHER WANGARI GIKAMA
L50/15869/2018

This research proposal has been presented for submission with my approval as the University supervisor

Sign ..... **Date.....**

Dr. Christopher Mugambi
School of Open Learning program
University of Nairobi.

This research proposal has been presented for submission with my approval as the University supervisor

Sign ..... **Date.....**

Dr.Antony Ndungu
School of Open Learning program
University of Nairobi.

DEDICATION

This research proposal is dedicated to my loving mother, (Loise Gikama) whose immense efforts in my academic life has seen me through this far. To my dad, (Joseph Gikama) for believing in me. To my dear and friend (Muchemi K Muthoni) for love and support during the entire process of writing this proposal. To my Leo, Sky and Calian, you are the reason I didn't give up.

ACKNOWLEDGEMENT

My sincere appreciation goes to my academic supervisors, Dr.Mugambi and Dr.Anthony Ndungu who has always been available to patiently and enthusiastically motivate me to keep going and guided me through.Univesity of Nairobi staff, Madam Martha, Mr.Kagiri for their absolute support and guidance in undertaking this study.

Muchemi Karari my husband and friend for challenging and encouraging me to push through this study within the minimum allowable time. My mums, Loise Gikama and Elizabeth Karari your prayers, moral support and encouragement supported me through my entire study.Calian Kimathi FM your entry to this world was one of a kind. I drew a lot of energy, faith and resilience you're your fighting spirit to overcome all the obstacles during this study. Thank you.Sonia Sky and Leo Collins, you patiently waited for me during the long hours I took to prepare and finalise this study. Above all, to Jehovah Almighty for his unfailing Love and grace that saw me through this project.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
HRTWS	Human Right to Safe Drinking Water and Sanitation
IBTs	Increasing Block Tariffs
KWTF	Kenya Water Trust Fund
MAWASCO	MathiraWater and Sanitation Company
MDGs	Millennium Development Goals
NARUWASCO	NaroMoruWater and Sanitation Company
NYEWASCO	Nyeri Water and Sanitation Company
OBA	Output-Based Aid
OMWASCO	Othaya.MukurweiniWater and SanitationCompany
RBF	Results-Based Financing
SDGs	Sustainable Development Goals
SUWASA	Sustainable Water and Sanitation in Africa
TEAWASCO	Tetu and AberdareWater and Sanitation Company.
UN	United Nations
UNICEF	United Nations Children's Fund
USAID	United Stated Aid NGO
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization
WSPs	Water Service Providers

ABSTRACT

The purpose of this study is to evaluate the relationship between Donor Output Based Aid Financing and performance of water projects in Nyeri County. Donor funds are key for the social economic development among developing nations including Kenya. Donor funds have significantly financed water and sanitation projects which are mostly public projects undertaken by the national and local governments and their agencies. These projects undertaken by the water service providers enhance access to quality, clean and safe water for all communities in their jurisdiction. Traditionally, donor funds were disbursed directly to the implementing agents at the initial stage. However, varied challenges constrained successful completion and full benefit to the communities due to corruption, embezzlement, poorly structured strategies among other factors. Output based financing has however been developed and adopted in recent past by donor communities. However, it has not been clear whether this funding structured enhanced performance of water projects. Thus this study seeks to evaluate the relationship between Donor Output Based Aid financing and water projects performance in Nyeri County. Specifically, the study evaluated the relationship between output based subsidies, commercial loans and technical support and water projects performance in Nyeri County. Literature was reviewed and the guiding theories included: the theory of change, profit theory and Resource Dependency Theory. The descriptive survey was adopted while targeting ninety nine staff of five water service provision companies including Nyeri Water and Sanitation Company, Othaya/MukurweiniWater and Sanitation, Mathira Water and Sanitation Company, Tetu and Aberdare Water and Sanitation Company and NaroMoru Water and Sanitation Company, in Nyeri County. Census sampling was applied and all (99) participated in data collection. Questionnaires was used to collect data, having been piloted to test their reliability and validity. Collected data was analysed through descriptive (means and standard deviation) and inferential statistics applied regression method. The statistical programme for social sciences was utilized to enhance data analysis. The data was presented through tables, charts and graphs accompanied by discussions on findings. The findings indicated that majority of the respondents were satisfied with the donor OBA model of financing their water projects. The study concludes that most water companies were satisfied on the subsidies received, the commercial financing and technical support as far as donor support and financing through OBA model is concerned.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Access to safe and clean water, sanitation and hygiene is a human right that governments and communities strive to ensure globally. In Water Sanitation and Hygiene (WASH) the standard made possible include, among others, better physical health, protection of the environment, better educational outcomes, convenience time savings, assurance of lives lived with dignity, and equal treatment for both men and women (Cataldo & Kielmann,(2016). World Bank (2016) contended that poor and vulnerable populations have lower access to improved WASH services and have poorer associated behaviours. Improved WASH is therefore central to reducing poverty, promoting equality, and supporting socioeconomic development.

Drinking water and sanitation were targets in the Millennium Development Goals (MDGs) for 2015; under the Sustainable Development Goals (SDGs) for the post-2015 period, Member States of the United Nations (UN) aspire to achieve universal access to WASH by 2030. The Human Right to Safe Drinking Water and Sanitation (HRTWS) was adopted in 2010 under a UN resolution calling for safe, affordable, acceptable, available, and accessible drinking water and sanitation services for all (World Health Organization -WHO, 2018). In focus are services at the household and institutional level and on services for personal rather than productive uses. For Wash projects globally, achievement of these goals is paramount.

According to SDGs report (2017), only 71 percent of the world population has access to safely managed water system while 39 percent of global population has access to safely managed sanitation services. Today, 2.6 billion people live without access to improved sanitation. Of these, 75 percent live in rural communities. This shows that a lot of investments need to be done to ensure achievement of SDG 6 by 2030. Through government, non-state actors and private sector projects, access to water and sanitation especially for the poor has been a focus for reducing diseases, mortality and improving the living standards of communities. World Bank (2016) contended that Water, Sanitation, and Hygiene (WASH) projects have been critical in developing economies which have undeveloped infrastructure, and have created humane living conditions. Majority of these projects rely on funding from local and international donors, governments, and the private

sector. As such, the performance of the projects is highly dependent on the resources provided by these donors.

The World Health Organization (WHO) reported that developing countries need $3.9 trillion to finance health and education and providing water and sanitation as they endeavour to achieve Sustainable Development Goals (SDGs) by 2030. With $1.4 trillion investment, the governments in these nations are faced with funding gaps which are provided by international donors (WHO, 2019). According to Antony, Bertone and Barthes (2017), conventionally, funding for the projects was based on project proposals, with funding disbursed at the commence stage. Thus, funds were available to undertake the projects right from the start. However, challenges abound along project implementation including funds misappropriation, diversion, and fraud, leading to losses and non-completion of projects. This prompted the donor community to introduce the results-based financing funding scheme.

Public sector funds alone were insufficient to provide access to water and sanitation for all, especially the poor sections of the population. Many regions in the world have inadequate government resources to finance WASH projects (Kelvin,2015). Water sanitation program (2014) reported that in sub-Sahara Africa, there was an annual shortfall of $14.1 million dollars. To overcome this financial deficit, donors have come up with innovative methods of mobilizing resources to fund social projects.

Output Based Aid (OBA)is one of the new innovative methods being used by donors to fund WASH projects. Castalia (2015) stated that the mechanism is an alternative to conventional donor funding mechanism for Water, Sanitation, and Hygiene (WASH) projects. This model involves funding of a project by donors after results have been delivered. This is unlike in the conventional funding where the financing is done upfront. This has changed over time. From the mid-1990s donors started using OBA in WASH projects with great success in increasing water and sanitation access especially by the poor. Initially OBA was designed and widely used in the health sector to improve quantity and quality of maternal and child health services (AHF, 2013).

.

1.1.1 Output Based Aid (OBA) Financing

Output Based Financing entails a broad family of financial instruments. With OBA, public funding is provided only if pre-specified results have been achieved. Robinson (2014) observed that Result Based Financing can be done using three main methods, Output-Based Aid, Conditional Cash Transfer and Voucher programmes. According to the World Bank (2018) Output based aid (OBA) is a form of RBF designed to enhance access to and delivery of infrastructure and social services to the poor through the use of performance-based incentives, rewards, or subsidies. OBA refers to development aid strategies that link the delivery of public services in developing countries to targeted performance-related subsidies. OBA subsidies are offered in transport construction, education, water and sanitation systems, and healthcare among other sectors where positive externalities exceed cost recovery exclusively from private markets. This study evaluates OBA Output-based aid with focus on its support for water and sanitation providers in Nyeri County.

OBA differs from the traditional approaches where aid is given in advance in order to finance input for activities that are expected to produce results. In OBA qualified water service providers are financed by commercial loans which are guaranteed by 60 % donor subsidies when the expected results are achieved (Sida, 2015). From Sida's perspective OBA is a means to handle and share the risks both fiduciary and institutional thereby creating possibilities to accommodate demand from partners to increase use of company systems. By only paying for results when they have been achieved the risk that the donor contribution is not used effectively is highly reduced. Under OBA scheme service delivery is contracted out to a third party such as public or private company which receives a subsidy to supplement or replace the user's fees. The service provider is responsible for pre financing the project until output delivery.

In Kenya OBA started in 2006, when GPOBA approved an innovative 1.1 million dollars project to increase access and improve efficiency in rural and per urban areas of central Kenya. The projects were financed with 3.4 million dollars loan from K-REP (now Sidian) bank and community equity, blended with OBA subsidies. Communities that successfully implemented the projects based on the numbers of new connections received forty percent subsidies (GPOBA,2014). Further in Nairobi a 4.3 million dollars World Bank grant has helped to extend water and sanitation services to over eighty thousand low income residents who were initially

unconnected. The families who could not afford the connection fees were required to pay a portion of the cost with the balance being subsidized to be repaid in 3-4 years through the monthly bills.

Another countrywide WASH project is the five-year Water, Sanitation, and Hygiene Financing (WASH-FIN) program is funded by the United States Agency for International Development (USAID) and began in October 2016. The project seeks to close financing gaps to achieve universal access to water and sanitation services through sustainable and creditworthy business models, increased public funding, and expanded market finance for infrastructure investment. Tetra Tech leads WASH-FIN implementation with support from Open Capital Advisors, Segura Consulting, and Global Credit Rating. It is managed by the USAID Water Office, with support from the Global Climate Change Office, under the Bureau for Economic Growth, Education, and Environment (E3). The performance levels of water projects in Nyeri under OBA finance was sought in this study.

1.2 Statement of the problem

The Kenya government has taken various measures to enhance access to water and sanitation to its citizens in the last decade. This includes reforming the legal framework through the enactment of the water act, formation of commercially oriented public water service providers, and devolvement of the water sector to the counties. Many of the public water service providers in Kenya have lagged in increasing water and sanitation coverage in their respective areas, mainly due to lack of funding: The limited input-based grants from the donors have been misused hindering more support. Many financing commercial institutions have been unwilling to finance Water Service Providers (WSPs) in Kenya due to lack of guarantee on loan repayments.

OBA is becoming an increasingly popular financing approach for development projects. Evidence on its effectiveness remains weak, especially in the WASH sector In Kenya, water and sanitation projects are financed by provision of Output-Based Subsidy, and commercial loans through the World Bank GPOBA programme supported by other donors and local commercial institutions. The selected water companies in this study are pre-financed through commercial loans from commercial lenders at market rates: Upon successive completion of the projects the donors repay sixty percent of the loans through the Output-Based Subsidy. This funding mechanism has enhanced access of water and sanitation especially by the poor and ensured proper utilization of donor funds has not been conclusive.

Despite the potential for RBF to have sector-wide impact, relatively little attention has been paid to understanding how RBF approaches have been implemented and rolled out or to their contribution to strengthening WASH programmes. While a lot of research has been done on use of RBF in funding health projects, very little has been done on the use of OBA model of funding on WASH projects in Kenya: This study is seeking to fill this gap:

1.3 Purpose of the study

The purpose of this study is to evaluate the relationship between Donor Output Based Aid Financing and performance of water projects in Nyeri County.

1.4 Objectives of the study

The study will be guided by the following objectives.

i. To establish the extent to which use of OBA subsidy influence performance of Water Projects in Nyeri County.
ii. To analyze the extent to which use of commercial loans influence performance of Water Projects in Nyeri County.
iii. To examine the extent to which use of technical support influence performance of Water Projects in Nyeri County.

1.5 Research Questions

i. To what extent does the use of OBA Subsidy influence performance of Water Projects in Nyeri County?
ii. To what extent does the use of commercial loans influence performance of Water Projects in Nyeri County.?
iii. To what extent does the use of Technical support influence performance of Water Projects in Nyeri County?

1.6 Significance of the study

The findings of the study will be useful in increasing the body of knowledge of Out Put -Based Aid Financing of Water Service Providers (WSPs) Projects. The study will also be useful to national government policy makers in the ministry of water and irrigation, county government departments of water and irrigation policy makers and Kenya Water Trust Fund officials. The findings of the study will enable public water companies of Nyeri County gain information on how to maximize the benefits of OBA while addressing the challenges of efficient and effective supply of products and services. The study will also be a vital reference for further study in OBA model of financing WASH projects.

1.8 Assumptions of the study

In the proposed study it's assumed that all the respondents will be cooperative and will provide reliable information. The study also assumes that the variables used in the study are the key factors influencing operation of Output-Aid financing of WASH projects and that they will not change during the research period.

1.9 Limitations of the study

Due to time and financial resources constraints the study will concentrate on a relatively small portion of the accessible population. This may limit the generalization of the findings to other WASH projects, since other factors than those dealt with in the study might be at play in other areas.

1.10 Delimitation of the study

The study will be confined to four public water and sewerage companies within Nyeri County. A representative sample of the staff and clients of these four companies will be interviewed. The study will also be confined to the projects using OBA financing models in the four water companies.

1.11 Definition of Significant Terms

Advance Payment	Advance payments are payments given before delivery of outputs. Thus, advance payments are a non-results-based component of a RBF payment.
Output-Based Aid (OBA)	OBA is a type of RBF, where service delivery is contracted out to a third party that receives a subsidy to complement or replace the required user contribution. The subsidy is paid after the delivery of outputs has been verified.
Performance of WASH Projects	Accomplishment of given task, measured Against set outputs
RBF payment	RBF payments are made to service providers for specified outputs. These payments are contingent on certain outcomes. Some schemes have an advance payment, which is paid to a participating service provider before outputs are delivered.
Results-Based Financing (RBF)	RBF is an aid mechanism where payments are made upon verification of the delivery of desired outputs, or the performance of desired behaviours.
Service provider	Service providers are the entities that provide the outputs, and receive RBF payments for those outputs. Service providers may be large or small, and may be public or private
Vouchers	Voucher projects are a type of RBF where consumers receive a redeemable voucher from a Government or donor agency that can be exchanged for a specified good or service. The provider of the good

or service then exchanges the voucher for a subsidy payment.

1.12 Organisation of the study

This chapter focuses on the background of the study, statement of the problem, purpose of the study, objectives and research questions, significance of the study, limitations, delimitations, and assumptions, theoretical and conceptual framework. Further entailed is the research methodology encompassing the study design, target and sample populations, data collection instruments and their pilot testing, data collection, as well as data analysis and presentation.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter discusses literature of past studies to conceptualize the study, from Kenya and around the world. Literature on Output based aid on financing wash projects was reviewed. The researcher reviewed and discussed theories and relevant empirical evidence related to the objectives of the study. The variables of the study that was reviewed included: influence of commercial loans on wash projects, influence of technical advice on wash projects, and government policies influence on wash projects. Their influence on financial performance of wash projects was evaluated.

2.2 Performance of Wash Projects

Performance is a measure of achievement of organizational goals and objects. In WASH projects, it is a measure of the achievement of access to clean, affordable and safe water and sanitary facilities and services. George Pyatigorsk (2017) observed that optimal project performance is achieving multiple, often conflicting objectives under changing conditions. George Pitagorsky (2017) defines project performance as tracking time, cost and scope of a project. Measuring performance is a critical factor in optimising performance.

Throughout the world Wash projects are geared towards improving water and sanitation uptake in their various areas of operation. Water and sanitation improvements in association with hygiene behavioural change can have significant effects on population and health by reducing a variety of diseases conditions such as diarrhoea, intestinal helminths, guinea worm and skin diseases (Patricia, Diane, & Anne, 2015). Beat (2018) stated that typical indicators to measure performance in WASH projects include actual and total water and sanitation coverage in both urban and rural areas, investment in drinking water supply and sanitation as well as reduction in water related diseases. Studies have been undertaken around the world to assess the performance of WASH projects.

According to RASCAS (2018) in Latin America access to quality drinking water has increased since the beginning of the sector reforms which started in the 1990s. In this region access to water increased from 81% of the population in 1990 to 95% in 2015.This was with the exception of Dominican Republic and Haiti which were affected by civil strife. The report also noted that efforts

to improve access to water and sanitation was mainly focussed in urban areas, hence rural areas had a low level of water and sanitation coverage in Latin America.

George Pyatigorsk (2017) observed that optimal project performance is achieving multiple, often conflicting objectives under changing conditions. Water and sanitation improvements in association with hygiene behavioural change can have significant effects on population and health by reducing a variety of diseases conditions such as diarrhoea, intestinal helminths, guinea worm and skin diseases (Patricia, Diane & Anne, 2015). Beat (2018) stated that typical indicators to measure performance in WASH projects include actual and total water and sanitation coverage in both urban and rural areas, investment in drinking water supply and sanitation as well as reduction in water related diseases.

Ads (2016) contended that project performance involves improving utility, efficiency and revenue. According to UNICEF, WASH projects performance entail construction of new water points ,rehabilitation of water points, training, advocacy, provision of sanitation facilities, increase in access to water, increase in water and sanitation facilities are in one place as well as decrease in water borne diseases. Accordingly, improving equity is by facilitating sustainable water and sanitation network connections to low income households in order to expand its customer base. On the other hand, finance is by improving billing practices to avoid arrears and disconnections. Project financing is a loans structure that relies on the project cash flow for repayment with project assets.

In Bangladesh the Branc Wash vouchers project has provided 6,600,000 people with latrines. This project met and exceeded its output target despite being implemented in a very poor country with low government effectiveness. The project has also enabled provision of separate boys and girls' latrines and provision of urban schools with safe water and sanitation in Dhaka and Chittagong cities in Bangladesh (Branc, 2016). The low-income households were to pay for installing toilets and then they receive a rebate after the use of toilets is verified.

WASH projects performance has been uneven globally. While developed countries have achieved one hundred water and sanitation coverage, the same can't be said about developing nations (WHO, 2016). Many developing countries continue to experience enormous challenges in developing water and sanitation projects for the benefit of their people. Estimates from the global report shows that sixty eight per cent of burden of illness is attributed to poor water and sanitation. This challenge is heavily concentrated in low income settings and is greatly affecting susceptible

groups such as the poor and the disadvantaged in developing countries (WHO, UNICEF, 2013). The success of Wash projects in least developed countries has lately been affected by increasing high levels of income and wealth inequality which has obstructed sustainable growth and social inclusion (Barcena, 2016).

The 2018/2019 UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water reports that twenty countries and territories out of the 115 surveyed have a funding gap of 61% between identified needs and available funds. While there has been a modest increase in government water and sanitation budgets compared to the previous report (2016/2017), insufficient funding remains a serious issue for countries to achieve their national targets. Moreover, even though over two thirds of surveyed countries have policies and plans to reach poor populations, less than 40% of those have corresponding measures for financing these efforts that are consistently applied (UN, 2019). Kenya is among the countries needed external funding to support WASH projects.

Several challenges are however found to impede on the success and scalability of OBA funding mechanism, a precursor to poor project performance in the WASH sector. Prince Anturi-Agyes et al (2017) observed that conventionally, fund transfer delays affected the implementation of WASH component at the same level it did in the household sanitation component. Further the study reported that lack of funds for repair and maintenance as well as budget for recurrent expenditure were some of the challenges experienced in maintaining an appropriate environment in schools. Tremolet et al (2015) further noted challenges in low-income and high population density to gain access to safely managed sanitation include many families not being able to pay upfront for the cost of upgrading to basic sanitation facilities due to poverty. Changa *et al* (2016) noted a further challenge in that it is not always possible to dispose excreta in situ because of lack of space for constructing replacement pit latrines.

A technology limitation is another challenge affecting performance of WASH projects. Munyu and Mckchven (2013) and Tiller *et al*. (2014) found that new improved sanitation technologies have been introduced in several settlements in Malaysia to enable households gain access to safely managed sanitation. Although these technologies offer households several advantages their adoption has been slow due to high cost to the poor households. According to Tilley *et al* (2014), poor households often indicate that they cannot afford to pay upfront to purchase a latrine that meets their preference. This can however be addressed by access to microfinance for sanitation

from banks and microfinance institution (Tremoleetal, 2015). OBA mechanism may be a viable solution with WASH projects under the OBA have indicated success in achieving set goals and have accessed up scaling support from donors.

World Bank (20I8) cites a success story in Brazil where prior information indicated that Brazil's underinvestment, utility inefficiency and poor management in the sanitation sector created unacceptable water pollution in the rivers. The Prudes project sought to reduce the level of contamination of watersheds by untreated wastewater. The project has been successful in wastewater treatment by creating and empowering watershed regulatory bodies through the resource management plans result of its intervention. There has been reduced pollution which led to I5 % decrease in hospitality due of water recycled disease in areas impacted by the programme. 7.49 million People were estimated to have benefitted from improved sanitation services with higher likelihood of meeting standards.

In Africa, UNICEF (20I2) observed that in Egypt the implementation of WASH projects in schools has reduced absenteeism by eliminating diseases influenza, diarrhoea and conjunctivitis. In Ghana, increase in urbanization resulted in a strain to existing water and sanitation in major towns especially in areas occupied by economically marginalized citizens. Faced with this challenge, the Ghana government created Greater Accra metropolitan Area (GAME) Sanitation end water project. The aim of this project was to increase access to improved sanitations end improved water supply in the GAME. With emphasis on low income communities and strength management of environment sanitation in GAME. Water and sanitation for the urban poor has established container-based sanitation business which charges a monthly fee to enable regular collection of waste. By 20I7 the team was providing services to 1150 households. The project has also improved water and sanitation facilities in seven neighbouring schools in Kumasi. This is on top of training health education coordinators and also improving water access in and around Kumasi (WSP, 20I7).

Past efforts of development agencies and government to improve access to portable water have paid off. Accordingly, 96% of the world population now have access to improved water sources (WHO & UNICEF, 20I5). In low income cities in sub-Sahara Africa only 64% of the population have access to improved water sources. In the South of Sahara, most Mozambicans live below the poverty line. Household and yard-tap connections have only been available to those who cannot afford to pay the connection fees. Low income communities who can afford the connections have been excluded from getting services. The Mozambican government sought to extend water and

sanitation to the poor people through an innovative OBA approach project with a private company (FIPEG).Through the project 30764 new connections were done benefiting I63,357 people(GPOBE,20I9)

In East Africa, Mohen (20I5) observed that in Uganda small towns, a water and sanitation project was established aimed at improving conditions through better water supply and waste management, and to alleviate poverty as well as reduce the environmental degradation through better waste management. The objectives of the project were met because new water connections were extended to I6I, 000 people in excess of the targeted I26, 000 people. With the availability of water in the small towns the price of water per 20 little jerrican averaged Ush 20 from the previous Ush 50-200.All the towns served by project except Rekei and Melebeheve reached the breakeven position for sustainable operation.

The Kenya urban and water sanitation OBA fund was established for low income areas aimed at increasing the number of people in low income areas with access to improved water supply and sanitation services. The project was realized by incentivising urban WSPs to invest in water supply and sanitation projects to benefit households in low income areas applying a one off OBA subsidies to make water and sanitation access affordable. Muranga South Water and Sanitation Company (MUWASCO), which is an urban utility in Tana Board accessed an OBA subsidy facility under the WSTF (World Bank, 2018).

GPOBE (20I4) reported that majority of Kenyans living in rural areas have no access to improved water and sanitation services largely due to poverty. However, rural areas community run projects play a crucial role in supplying and improving access to water services. The Kenya microfinance community managed water project was commissioned in 2006 when the GPOBA approved an innovate pilot project for shs 5I.I5 million to increase access and improve efficiency. Water services improvement was targeted for the poor in rural and peri-urban areas of central Kenya. Through the project additional I90, 000 people obtained accessed to improved piped water supply in low income communities in rural and peri-urban areas. The project also enabled access to commercial loans and mobilized community investment. However, whether the OBA financed project benefits transcend to date shall be evaluated in this study.

According to World Bank (2018), there are only three sources of financing for water and sanitation services: taxes, tariffs and transfers. Currently, the combination of these funding sources is not enough to adequately address the need for water and sanitation services in developing countries.

As governmental and donor funds cannot meet the funding needs on their own, involved stakeholders have concluded that more commercial finance needs to be attracted into the sector, alongside a similar increase in public finance. One enabling mechanism for such financing is OBA.

OBA is a type of Result Based Financing pioneered by the World Bank in 2002. GPOBA defines OBA as a result based approach to increasing access to basic services like infrastructure, health, education and water in poor developing countries. OBA financing has been used since the early 2000s to deliver basic infrastructure and social services to the poor typically through public–private partnership. Mumssen *et al.* (2010) observed that OBA ties the disbursement of public funding in the form of subsidies to the achievement of clearly specified results that directly support improved access to basic services. OBA seeks to address the perceived shortcoming of traditional development Aid effectiveness through placing an emphasis on results. This has occurred in an environment of swelling public and political pressure on budget allocation (World Bank, 20I7).

Its estimated that the capital finance needed to extend water and sanitation services to meet the SDGs is $1.7 trillion up and until 2030, with urban sanitation making up 44% of these costs (Hutton & Varughese, 2016). Current investment levels in water and sanitation need to be tripled to meet global need with sub-Sahara Africa and south Asia countries in most need of assistance if they are to overcome this financing gap. World development Bank remains one of the best placed and resourceful institutions to help bridge the financial gap. Multilateral and Bilateral development Bank such as the Wold Bank, Asia development Bank (ADB) and African Development Bank provide US $ 313 billion to low and middle income countries between 2010-2014 with the US providing 83 billion (27 %) of loans to water and sanitation sector(OECD, 2017). Thus, there is a growing trend of privatization of sanitation in the development sector.

Building on consultation with a series of sector experts Hescol (2016) argues that sanitation is undeveloped and under-prioritized area in the MDGs but has since become a priority area in the SDGs. The latest GLAAS report shows that national budget for WASH is increasing by an average of 4.7% above inflation (Who, 2017). Although it is important to remember that this higher level of investment remains significantly below what is needed to deliver the SDG (Hutten & Varughee, 2016). Development banks are now seemingly spending more on urban sanitation than before.

OBA is primarily differentiated from other forms of RBF in several respects. According to Robinson (20I4), under an OBA scheme the service provider bears the performance risk. This means that service providers pre-finance the outputs before being reimbursed by the OBA subsidy

upon independent verification pre-greed outputs have been delivered. In the water sector in Kenya, these outputs are generally working connections often demonstrated through billing or collections records. The sanitation sector however is lagging behind due to lack of political will and attention, insufficient financing institutional fragmentation, low levels of awareness and the taboo element attached to sanitation.

Targeting is a key factor when designing an OBA programme especially targeting mechanisms for the required population. When OBA projects are directed to the wrong target groups, subsidies provided may not reach the anticipated group. This may lead to lack of increase of accessibility of water and sanitation by the disadvantaged groups. Between the year 20I0 end 20I4 World bank, Asian Development Bank and Africa Development Bank provide Us $ 3I3 billion to low and middle income countries in water and sanitation (OECD, 20I7).

One WASH project under OBA was in Muranga, Water and Sanitation Company (MUWASCO) in Muranga County which was pre-financed by Sidian Bank through a commercial loan facility for Ksh 17.58 million from the Ksh17.6. Muwasco received a total of Ksh 12.5 million was received from the water fund as 60% subsidy under the OBA programme towards the repayment of the loan. This reduced the principal loan facility to Ksh 5.1 million.Despite getting the loan at a high interest rate of 17% per annum the subsidy made it easy to repay the balance in 60 months (WSB, 2016). Through the project 1500 people obtained clean water, reducing time spent in fetching water and diarrhoea among children. Content gap is evident on other WASPs in Kenya, an added approach in this study.

As evidence by Tremoleetal (2015), OBA projects have improved aid effectiveness in addition to the quantitive outputs. They have also improved aid effectiveness through increased transparency resulting from the explicit targeting of subsidies, increased accountability by shifting performance risk to service providers and increased engagement of private sector capital as well as expertise to serve the poor, innovation and efficiency. Further, OBA has increased sustainability of public funding and enhanced monitoring of results since payments are made against agreed outputs.

OBA application in WASH projects has been studied by varied researchers, while endeavouring to assess performance and satisfaction of beneficiaries. World Bank (20I4) study illuminated the benefits of OBA for wash projects in Asia. The regional government of Andhra prodesh in India was faced with a challenge of ensuring that its increasing population had access to watered sanitation. The state set up andhraprodesh rural water supply and sanitation project through

progressive decentralization, community participation and enhanced accountability. The project was financed on an OBA approach to provide safe drinking water end to I0000 families through innovative village-based public private partnership model. Through the project 25 ultraviolet water purification systems were set up and 77,878 people access to clean water.

World Bank (20I8) identified 22 WASH projects in Kenya, with seven including OBE subsidies funded by the World Bank for total US $ 82 million. This includes both concessional funding from International Development Association (IDE) and non- concessional funding from the International Bank for Reconstructions and Development (IBRD). The other I5 projects include GPOBE subsidy funding for total of US $54'9 million. Typically subsidy levels make up about 65% of total cost. However, it is estimated that financing wash projects in Kenya will require US $ II4 billion annually until the year 2030. Further, it is estimated that the finance needed to extend water and sanitation services needed to meet SDG is US $I.7 trillion until 2030 with urbanization making up 44% of these cost (Huwen & Verughese, 20I6). However, project performance of these projects is little known, hence the essence of this study.

Garmaise (2016) contends that one key challenge of OBA projects is the degree of development of the private sector, particularly of the ability of service providers to pre-finance the outputs before being reimbursed by the OBA subsidy. Another challenge is the absence of enabling factors including transparent legal or regulatory amendment for tariff sector adjustment is consistent with IDA's country based model and results agenda shows promise to help the poor gain access to basic service. The inclusion of OBA in poverty reduction strategies and investment lending operation can also help shift the focus on results and improved the accountability of project implementation from for the achievement of those results (world bank,2016).

Globally, investments concentrate on the construction of infrastructure (capital expenditure) with insufficient attention on the systems needed to make the water and sanitation infrastructure function properly: regulations, policies, monitoring, institutions and the people that provide WASH services at regional, district and municipal levels. The lack of non-capital expenditure and support for service authorities, service providers and the necessary systems results in high rates of non-functionality, poor-services and stagnation in coverage. Government policy and programmes should include support to issues such as community mobilization, awareness generation behaviour change community and coordination (Olukahni & Okorie, 2015).

UNC (2015) noted that policies and strategies for WASH in household and healthcare facilities should be integrated in existing national planning and funding mechanism to avoid establishment alone toilets which are not potentially sustainable. Hardware interventions are necessary but not sufficient in addition governments need to establish national policies and standards, and invest in building of human resource capacity. The sanitation sector is particularly off track to reach the SDG Goal 6 in many countries. To reach Goal 6 of the Sustainable Development Goals (SDGs), "ensure availability and sustainable management of water and sanitation for all", there is an urgent need to address the systems blindness and build strong institutions that are able to professionalize the water and sanitation sector and attract both public and private funding to reach universal coverage.

Shortcomings that undermine the sector's ability to attract finance include underdeveloped national financial sectors; a lack of vision by governments to seek alternative sources of finance; ineffective regulation; low cost recovery; weak governance; a mismatch between supply and demand of finance; low service provisions and the operational efficiency of urban and rural WASH service providers; and a lack of anti-corruption measures. A practical constraint for households' subsidies is property rights. Renters and people without legal tenure have no increase to invest in a toilet. In this context focusing on subsidies for the poorest will not work. It is the landlord who needs to be convinced to invest in toilet construction maintenance and upgrading. In South Africa the impact of a strong rights-based policy approach in water and sanitation coverage is over 80%. However this programme has become increasing infrastructure focused leading to rigidity and inflexibility.

Policy application for investment in WASH initiatives has been studied widely. In S.A the national sanitation policy drafted in 1994 gave the responsibility for water supply and sanitation to local government hence planning, management, operating and maintenance function of water committees were taken by municipalities but for sanitation has not clarified the role and responsibilities of users and municipalities in maintenance of public toilets (Evans, 2009). Although S.A has a free basic water policy which attempts to guarantee a minimum basic lifeline of portable water has been a distant for millions (van kgiper& Jua 2005). There is evidence that in Limpopo this lifeline minimum quantity of 25 litres per person per day is rarely accessed for free. The authors of many of the articles have recognized the progressive nature of the national Water Act (NWSA, 1998) and to a great potential that is has tool to redress inequalities of the past.

However Majuru (2015) argued that despite being a progressive form of legislation some local organizations have been unsuccessful due to insufficient funding for water resource management.

Another trend over the last couple of years is an increased political interference from central government in municipal government affairs in some developing countries in Latin America like Nicaragua, Bolivia and Venezuela (Bossyyt, 2013). According to GLAAS (2014), only two countries Brazil and Cuba have a government defined financing plan budget published and agreed upon for the WASH sector including all subsectors. Further, only seven countries were able to inform on the national spending on the WASH sector (2011).This information confirms expected insights that finance tracking from the WASH sector in Latin America and Caribbean countries is a major challenge, similarly to other developing countries.

In Asia, Bangladesh offers a good example of institutionalizing sanitation by establishing a sanitation secretariat in government and by celebrating sanitation monthly each year. In India banks are required to provide 40% of their total lending for sectors specified by Reserve Bank of India (RBI). Revised Priority Sector Lending (PSL) guidelines released on July 2015 recognised sanitation facilities including construction, refurbishment of household toilets (RBI,2015).

In the case for Africa, water and sanitation programs have been initiated in many communities in Nigeria. WASH promotion still releases little attention and funding hence the water supply and sanitation coverage in Nigeria remain low with no significant improvement Akpabio Evan (2012). Over the years regulations of the use of water in Ghana has greatly evolved from being guided by customary laws to fragment state bucked ordinances legislation and most recently a national water policy.

In Kenya, the water act of 2002 provided for the management of government ran small systems to be handed over to community water services provided through contacts with Water Service Boards (MWI, 2009). The water act of 2002 was enacted to improve the operating and financial performance of major utilities. In order to increase access and achieve better service standard in both urban and rural areas. The act also provides for diminished role of the government in implementing and operating rural water projects and increased participation for communities and private sectors in these activities. Outside major towns and cities the act provides for independent community based organizations to be initiated by Water Service Boards (WSBs) to undertake water service provisions within the jurisdictions of the service board. The 2002 act also brought

about significant tariff reform in the sector aimed at ensuring operating and capital cost recovery and hence the financial sustainability of WSPS.

Major policy reforms initiated by the GoK in the late 1990s were aimed at improving the operating and financial performance of water utilities in order to increase access and achieve better services standards in both urban and rural areas. The reforms are underpinned by the water act of 2002 which provides for a diminished role for government in implementing operating rural water projects and increased participation. For communities and the private sector in their activities. Outside major towns and cities the act provides for independent community based organizations to be controlled by water service boards (WSBs)to undertake water service provision within the jurisdiction of the service board. The decentralized institutional set up proposed by the act.

Following the promulgation of the new constitution in 2010, among other functions the delivery of water and sanitation services function was devolved to the county government level. The new constitution recognized access to safe water and sufficient water and reasonable standards of sanitation as a basic human right (Katuva, 2016). With envisaged devolution there arose a need for legislative alignment of the water act of 2002 to the new constitution that led to the water Act 2016. The Act is expected to advance the 2002 reforms with emphasis on the devolution of services by WSPs. According to the Water Act 2016, the mandate of the Water Fund is to provide conditional and unconditional grants to the Kenyan counties in addition to the equalisation fund and to assist in financing the development and management of water services in marginalised areas or any area which is considered by the Board of Trustees to be underserved.

Public Finance and Management Act 2012 (PFM) allows for the establishment of County Corporation either through the country legislation or an act of parliament. Being separate legal entities commonly corporation may escape the constraints faced by county governments in borrowing directly. They do however face two important restrictions. According to the public finance any debt taken on by a county corporation cannot be repaid using public funds. Along with county government linked corporations may not receive any investment whether by loans, share capital from the county government without the approval of the county executive committee. This ensures prudence in utilization of credit finance for the WSPs.

The lack of access to adequate financing is a challenge in the WASH sector. A largely untapped source of finance is commercial financing. Traditionally Kenya has relied on budgeting allocations, equalisation fund, decentralized fund, donor funded projects, water sector

development funds and consumer tariffs. The WSTF was established by the Water Act of 2002. This body was funded by the government of Kenya and the development finance institutions to finance the implementation of water sector projects. It is specifically focused on the poor areas and is a vehicle that is used by the government to manage grants funding to the sector.

The ministry of water has formulated broad strategies to meet the funding gap, reducing costs, increasing revenues and improving the enhancing environment to attract new financing sources. Whether these policy and structural reforms has enhanced the performance of WASH projects is a key focus in this study.

2.3 Empirical Review

2.3.1 OBA Subsidy and Performance of Wash Projects

A subsidy has been defined as a sum of money granted by the state or a public body to help a business or an industry keep the price of a commodity or service low. IRC (2012) observed that subsidies are common tools used to motivate households to access clean water and construct toilets. Many who lack access to water and sanitation are extremely poor people and hence the government and development partners are obliged to help them to access safe water and sanitation. Excluded groups in development like the elderly, clinically ill and people living with disability cannot manage to access water and sanitation without subsidies.

Evidence shows the usage of ODA subsidy in WASH projects. According to the World Bank (2016) Bangladesh has made significant progress in reducing open defecation from 34 percent in 1990 to just one percent in 2015. This has been made possible by the microfinance funding of water and sanitation projects as well as donors funding of WASH projects through the Output Based Aid and Vouchers programmes. The World Bank has provided a US$ 3 million grant to PKSF, targeted to poor households and paid as an output-based aid (OBA) subsidy. The grant leveraged US $ 22 million in household loan finance extended by financial institutions.

James Dumpert and James Wicken (2018) observed that in Cambodia WASH subsidy has improved performance of wash projects to existence of a foundation of existing policies, programmes and collaborations between the government and private sector. However, lack of long-term investments in resources to drive forward the WASH sector agenda has hampered its duplication to other areas.

BRAC (2016) report in Indonesia reports that BRAC Wash programme household subsidies were used at scale to increase coverage which enabled 25.9 million people to access safe toilets from 2006-2010 and provide 693,057 households with materials to construct or repair toilets. The sanitation subsidies in Indonesia worked due to clear and transparent indicators being used to determine eligible households for subsidies and focus on behaviour change .This is in contrast with India where the government Total Sanitation Campaign (TSC) provides cash to households which do not reach the poor because the government endorsed toilets are expensive and not used. This is because the main focus in TSC was construction of the toilet and not behaviour change.

Steel (2017) established that in Ghana OBA was used to improve affordability for households in crowded low-income areas of the Greater Accra Metropolitan Area (GAMA). To invest in improved household toilets. In Ghana only twenty three percent of households have toilet or improved latrine and in GAMA only one third have access to flush toilet. The government funding in sanitation has reduced over the years due to rapid urbanization and competition from other core sectors. At the household level connection to sanitation services has been hampered by the high upfront cost.

In Mozambique the World Bank (2017) observed that tap water connections have only been available to the customers who can pay the connection fee. The Mozambican water and supply assets and investment fund implemented an innovative output-based subsidy approach designed to ensure ownership and demand driven service provision so as to set the bases for long term operational and financial sustainability. Through the programme poor people in the capitals slum were connected. The project increased access to piped water connections in poor neighbourhoods of Maputo and 30764 new connections were done. However, the World Bank study noted that the number of connections was not verified.

In Kenya, Harold (2019) study was undertaken between October 2018 and February 2019 on sustaining rural water through FundiFix scheme. FundiFix is a social enterprise that supports maintenance services in two rural Kenyan counties (Kwale and Kitui Counties). It serves approximately 75,000 beneficiaries using 114 hand pumps and 28 piped schemes as of May 2019. The enterprise started from collaboration between Oxford University and Kenyan partners in 2014, with research grant funding to test hand pump sensors from the United Kingdom's Department for International Development. FundiFix was not operating on a full cost recovery model at the current scale of operations. The goal was to rely on subsidies until reaching a much bigger operation scale.

This was a comparative study of maintenance models for community-managed schemes. It involved face-to-face interviews, email contact, and questionnaires with key informants for each of the seven maintenance models investigated, as well as a desk-based review of existing documentation for the initial literature review of 22 MSP models. Results indicate that functionality of water infrastructure contracted under the program has achieved functionality rates above 90 percent in all nine of the prefectures where it operates. However, there is a lack of reliable data available on the performance of water points in the remaining seven prefectures that only receive support from the government.

WASREB (2018) reports that in Kenya, the Results-Based Financing (RBF) investment programme is a commercial financing facility that became operational in WSTF in December 2014 after the Government of Kenya signed a Grant Subsidiary Agreement with the German Development Bank (KfW) and the World Bank. The grants are provided by the Swedish International Development Agency (SIDA) through the KfW via the Aid on Delivery (AoD) programme for 1.36 million EUR and the World Bank Output-Based Aid (OBA) programme for 11.835 million USD. The primary beneficiaries of the projects under the RBF programme that have been reached out of the targeted 150,000 (until 2018) as of June 2016 are a total of 3,645 households or 21,650 people. These are broken down as 16,940 people accessing individual water connections, 4,290 people accessing water kiosks, and 420 people accessing yard taps.

Rajesh (2016) opines that donor co-funding can significantly reduce the perceived risk of private lenders and lower the effective cost of borrowing for utilities to affordable levels through the use of blended financing mechanisms. This would grow the role of private finance in the water sector. However, how the OBA funding strategy has enhanced the performance of WASH projects has not been clear, and this study seeks to add knowledge to enhance policy and practice for WSPs projects sustainability in Kenya.

2.3.2 OBA Commercial Loans and Performance of Wash Projects.

Studies have sought to evaluate the relationship between OBA loans and the performance of WASH projects. Hutton and Varughese (2016) assert that there is also concern that the tighter capital and liquidity standards by commercial banks could reduce the availability of long-term financing, as the higher relative risk weightings associated with long-term finance leads to a shift to lower cost lending as the tighter requirements are implemented. In other words, while risk weightings strengthen the capitalization of banks, there is a trade-off between access and safety

and soundness, which needs to be considered. This could have particularly negative impact on developing countries that have large infrastructure needs, including WASH projects.

Fonseca and Pories (2017) advocate that investment in public resources, leveraging private money to fund capital investments, is an efficient and effective use of scarce government resources. This provides an opportunity to attract private funds and improve risk/reward profiles. Hence, OBA strategy may enhance access to private capital for WASH projects. Several studies seek to relate OBA commercial loans schemes and performance of organizations and projects all over the world.

In Kenya, Water Service Regulatory Board (Wasreb) observed that a credit worthiness index has been established in Kenya by Wasreb in collaboration with the World Bank as a tool kit on commercial lending to water and sanitation Wasreb (2016). The creditworthiness index provided lenders with a snap short of the financial and operational performance of water and sanitation utilities across the sector to facilitate commercial loans lending. Water Service Trust Fund- WSTF (2017) states that the OBA grant will pay for 60% of the subproject cost financed by domestic lenders subject to a cap of $115 per beneficiary. With the need to raise 405 to settle remaining liability, and considering the revenues from water users especially in rural areas, this condition may not be feasible for some of the local water service providers in Kenya.

One of the objectives of Kenya's vision 2030 is to increase both access to safe water and sanitation in both rural and urban areas beyond the present levels (Republic of Kenya, 2007). This can only be achieved multi-dimensional funding of the sector from both the government and the private sector. The water service providers are therefore expected to raise funds through commercial loans and grants to enhance water and sanitation coverage in their respective areas (WSTF, 2017).

The revised Kenya water Act (2016) emphasised the role of the Kenya Water Trust Fund as a sector financing institution. The fund is legally mandated to provide conditional and unconditional grants to develop water and sanitation services in both rural and underserved poor urban areas. According to the impact (2017) the W.S.T.F runs a RBF programme that provides grants to utilities that access commercial loans for investment. Under the OBA fund, utilities are pre-financed with commercial loans from domestic lenders on market terms to support investment that deliver households water and sewer connections, public water kiosks and public toilets. Donors then provide subsidies over the costs incurred by the water and sanitation providers upon receipt of performance reports. How this funding mechanism has affected the service providers in WASH projects motivates this study.

Several studies have linked OBA commercial loan structure and project performance. Pitchings *et al*. (2018) study revealed that the WASH sector is now paying greater attention to financing sources beyond OBA investments with new emphasis on promoting blended financing model involving public finance and commercial finance. They believe there will be an even stronger role for development banks and associated aid actors to robustly promote the pro-poor agenda in their lending and so developing more widely recognized indicators and reporting systems connected to this agenda will gain in importance. Increasing the availability and effectiveness of development bank finance is the model to help government ease the current state where billions of people living with inadequate sanitation especially in South Asia and Sub–Sahara Africa. There has been increasing investment in urban sanitation over the period from 2000 to 2017 (Hutach et al 2018). Whether commercial lending is available to WSPs in Kenya shall be evaluated in this study.

Horrocks (2018) indicates that attracting commercial finance into the WASH sector of developing countries has proven to be a hard sell that has been largely unsuccessful to date. He observed that over the past 4 years (2014–2017), $81 billion of development funding was mobilized from the private sector in OECD countries. Only 1.9 percent of this amount was mobilized for water. The WASH sector is, despite the demands and needs, not doing well. This thus creates a niche for private financiers including commercial banks to provide funds for WASH projects in collaboration with government and communities since these projects are normally large scale and public in nature. The specific case for Kenya shall be assessed in this study.

Goksu, Trémolet, Kolker and Kingdom (2017) in their study report that RBF typically requires a provider to first create the output, and then get paid for it. This works well where providers are well capitalized or have ready access to finance. In some cases though, providers lack access to finance. In these cases, RBF schemes have been designed to include 'bridge finance'. Bridge finance is typically in the form of loans to the provider from third party financiers, enabling the provider to cover the cost of delivering outputs. Payments received for results are then used to repay the financier. Capacity of WSPs to access loans for WASH projects in Kenya is a conceptual gap to be filled in this study.

Ruben, and Derksen *et.al.* (2017) in their discussion paper alluded that results based finance (RBF) can work as a useful accelerator to stimulate private sector partners to invest in the energy sector in developing countries and to increase access to energy. Through RBF private sector businesses get an incentive payment for the delivery of clean energy services. They only get this payment

after delivery of the provided energy service. The study however elicited contextual gaps while focus was on the energy sector, with a new focus on WASH projects.

Goksu, *et al.* (2017) study showed that risk transfer still works (provided the financier is private), because financiers will conduct due diligence to be sure that their loans are likely to be repaid. This acts as quality control on the service providers. A good example is Microfinance for Community Water Projects in Kenya, which arranged for a local bank to provide loans to community-based organizations (CBOs) to build water systems. These loans provided the initial capital that the CBOs needed to build outputs. The CBOs then used the payments they received for delivering outputs to help repay the loans. That project worked well, and is in a scale-up phase. Conceptual gap remains in funding relations and success of OBA programmes for WSPs in Kenya.

Edmund Smith Asente (2014) noted that in Ghana Water service providers were unable to access loans from traditional sources which hindered their ability to sustain investments and services. This was due to poor governance structures, inadequate technical knowledge, high interest rates and collateral requirements. To counter these challenges a $4000,000 revolving fund was created to be managed by Fidelity Bank to fund Wash projects. World Bank (2012) noted that collaboration between the government and public-private infrastructure Advisory Facility enabled local banks to provided commercial loans to private water providers which increased water coverage.

2.3.3 OBA Subsidy and Performance of Wash Projects

A subsidy has been defined as a sum of money granted by the state or a public body to help a business or an industry keep the price of a commodity or service low. IRC (2012) observed that subsidies are common tools used to motivate households to access clean water and construct toilets. Many who lack access to water and sanitation are extremely poor people and hence the government and development partners are obliged to help them to access safe water and sanitation. Excluded groups in development like the elderly, clinically ill and people living with disability cannot manage to access water and sanitation without subsidies.Typically, where OBA subsidy is applied, service delivery is contracted to a third-party service provider who is responsible for all (or most) of the up-front cost. As services are targeted tothe poor, user fees are replaced or

supported by a "subsidy" provided by the donor. However, the subsidy is only provided after delivery and only after independent verification.

Marielshel et al (2012) has defended the use of subsidies as a way to ensure that every one can benefit from water and sanitation. On the other hand KristofBostoen and joepverhagen (2012) have opposed subsidies arguing that the current approach of cash provision to buy toilets and water connections, or the provision of water and toilet materials to households has failed to reach the poorest. They also argued that improving the effectiveness of sanitation subsidies is also about putting public money where it is needed most and its hardest to raise funds from households.

Evidence shows the usage of ODA subsidy in WASH projects. According to the World Bank (2016) Bangladesh has made significant progress in reducing open defecation from 34 percent in 1990 to just one percent in 2015. This has been made possible by the microfinance funding of water and sanitation projects as well as donors funding of WASH projects through the Output Based Aid and Vouchers programmes. The World Bank has provided a US$ 3 million grant to PKSF, targeted to poor households and paid as an output-based aid (OBA) subsidy. The grant leveraged US $ 22 million in household loan finance extended by financial institutions.

BRAC (2016) report in Indonesia reports that BRAC Wash programme household subsidies were used at scale to increase coverage which enabled 25.9 million people to access safe toilets from 2006-2010 and provide 693,057 households with materials to construct or repair toilets. The sanitation subsidies in Indonesia worked due to clear and transparent indicators being used to determine eligible households for subsidies and focus on behaviour change .This is in contrast with India where the government Total Sanitation Campaign (TSC) provides cash to households which do not reach the poor because the government endorsed toilets are expensive and not used. This is because the main focus in TSC was construction of the toilet and not behaviour change.

Hutching, *et al*. (2017) note that bridge-finance adds complexity-and hence increases costs and risks, and can make projects harder to scale up. Projects that provide help with bridge financing often have to provide technical assistance to financiers (as happened in the Second Generation Project in Indonesia), which increases costs and reduces economies of scale. Furthermore, providing bridge financing increases the range and number of organizations that must be coordinated, as lenders are brought in to the project. Thus, RBF with bridge finance should only be used where the benefits from RBF (compared to another funding mechanism) outweigh the

costs of complexity introduced by the bridge finance. It is critical to evaluate whether these challenges are evident in WASH projects in Kenya, and whether benefits supersede the costs.

Leigland, Trémolet and Ikeda (2016) noted that the few isolated experiences with blended finance in the water sector to date, supported by international donors, have predominantly been in middle-income countries and failed so far to be replicated at scale. The reason is clear: moving to scale requires a concerted focus not on the blended mechanisms developed to incentivise commercial lending, but on the broader foundational issues facing the sector that feed the commercial sector's reluctance to invest.

Rajesh (2016) opines that donor co-funding can significantly reduce the perceived risk of private lenders and lower the effective cost of borrowing for utilities to affordable levels through the use of blended financing mechanisms. This would grow the role of private finance in the water sector. However, how the OBA funding strategy has enhanced the performance of WASH projects has not been clear, and this study seeks to add knowledge to enhance policy and practice for WSPs projects sustainability.

Shar *et al.* (2013) study in India observed that there was an overall increase in investment in water and sanitation sector, although it fell short of bridging the significant financing gap in the sector. Citing India, they argued that there has been potentially high demand of WASH finance. They identified at least 146,000 sanitation loans which had enabled some 730,000 people to build households sanitation facilities. A monitor group study however suggested that there was a demand of for toilets worth USD 10-14 billion with a $6-9 Billion financing opportunity including bridge financing for part subsidy, indicating a financing gap for WASH projects. (Trenovelet and Kumar, 2013). Contextual gap is evident for the case of Kenya's need for WASH projects financing and available OBA support.

In order to fill the financial gap for funding WASH projects, it is necessary to support measures for access to sanitation loans from banks, Small Finance Banks (SFBS) and Microfinance Institutions (IRC *et al* 2017). Using blended finance measures like use of grants and public funds to leverage commercial resources and taking specific measures such as guarantees or grants to clear mobilization and original cost will need to be developed. This study shall evaluate the government's policy on WASH projects financing, financials sector players' attitudes to the projects' finance and donor support and collaborations on the OBA platform. In Malawi the opportunity development bank of Malawi (OIBM) offered sanitation loans in Blantyre city at a 2%

monthly interest rate, to groups and individuals in the group to fund any sanitation technology of their choice. The Bank offered loans to offer 2000 individuals by 2012 and achieved a repayment rate of 88% (Chattervey et al, 2013).

The water sector in Kenya has traditionally relied upon government and donor resources to fund infrastructure development and in some cases to subsidize operating and maintenance costs as well as private sector equity and debt from commercial banks having played negligible role in financing the sector. Financial autonomy and exclusive water service provision rights granted to communities as rural WSPs make them bankable stand alone entities. The nature of demand of these communities make is suited to the lending policies of microfinance institutions.

Locally in Kenya, WASREB (2018) reports that the Results-Based Financing (RBF) investment programme is a commercial financing facility that became operational in WSTF in December 2014 after the Government of Kenya signed a Grant Subsidiary Agreement with the German Development Bank (KfW) and the World Bank. The grants are provided by the Swedish International Development Agency (SIDA) through the KfW via the Aid on Delivery (AoD) programme for 1.36 million EUR and the World Bank Output-Based Aid (OBA) programme for 11.835 million USD. The primary beneficiaries of the projects under the RBF programme that have been reached out of the targeted 150,000 (until 2018) as of June 2016 are a total of 3,645 households or 21,650 people. These are broken down as 16,940 people accessing individual water connections, 4,290 people accessing water kiosks, and 420 people accessing yard taps.

Rajesh (2016) review posits that based on devolution structure in Kenya that gives responsibility for water and sanitation service delivery to 47 counties, the need to seek alternatives to public sector loans and grants is imperative. He advocates that while building on the successes of regulatory and governance processes instituted in prior reforms, many of the more financially robust WSPs will be responsible for their own capital planning. They will need to generate freer cash flow from ongoing operations to leverage debt financing. This will require them to conduct better investment planning, improve their financial management, and increase their reliability as borrowers. However, there is paucity of information on the implementation of these strategies in Kenya, a critical gap to be filled in this current study.

Community water projects in Kenya financed under the OBA program must be able to repay their loans in the five year post implementation grant phase of the project cycle. However, access to

commercial loans for the WSPs and impact on OBA donor support needs empirical studies to inform on impact on projects' performance and scalability of the funding mechanism.

Oyugi, Kioko and Kaboro (2018) facility-based study assessed perceived quality of care and satisfaction of reproductive health services under the output-based approach (OBA) services in Kenya from clients' perspective. An exit interview was conducted on 254 clients in public health facilities, non-governmental organizations, faith-based organizations and private facilities in Kitui, Kilifi, Kiambu, and Kisumu counties as well as in the Korogocho and Viwandani slums in Nairobi, Kenya using a 23-item scale questionnaire on quality of reproductive health services. Descriptive analysis, exploratory factor analysis, reliability test, and subgroup analysis using linear regression were performed. Clients generally had a positive view on staff conduct and healthcare delivery but were neutral on hospital physical facilities, resources, and access to healthcare services.

There was a high overall level of satisfaction among the clients with quick service, good handling of complications, and clean hospital stated as some of the reasons that enhanced satisfaction. The County of residence was shown to impact the perception of quality greatly with other social demographic characteristics showing low impact. The study concluded that majority of the women perceived the quality of OBA services to be high and were happy with the way healthcare providers were handling birth related complications. The conduct and practice of healthcare workers is an important determinant of client's perception of quality of reproductive and maternal health services. This showed that OBA approach enhanced service delivery in the health sector in Kenya. Methodological gap was established in the study population target and sampling procedure as well as data collection based on exit interviews. The current study seeks to analyse the WASH projects through content analysis of project performance reports in Nyeri County.

2.3.4 OBA Technical Support and water Projects Performance

Oliver and Keraita, *et al.* (2019) evaluated the state of wash financing in Eastern and Southern Africa. The report focused on WASH financing for the entire ESAR and follows the development of four country reports (Burundi, Eswatini, Uganda and Zimbabwe). The country-level assessments provided an in-depth review of sources of WASH sector financing, how finance is channeled through different institutions, the quality and equity of financing and future financing options to achieve sector goals. This regional-level report draws on the country reports and other

accessible financing data to provide an overview of current WASH financing in ESAR and provide direction for increasing the volume and impact of future WASH investment.They reported that access to consumer credit is a critical enabling factor for some households to improve access to water andsanitation, whether it being mobilizing resources to construct household latrines or covering the upfront costof connecting to a main line water or sewerage line. Experiences are only starting to scale up in Ethiopia, Kenya, Uganda and the United Republic ofTanzania, with support from international NGOs. Contextually, the current study seeks to evaluate the relationship of OBA technical assistance on WASH projects in Kenya.

Hutching,*et al* (2018) observed that across all projects the most common area of investment was not an infrastructural element but rather institutional capacity building with 76% of project involved in this area. Broader evidence shows that in 1980 only 1% of the World Bank projects involved an institutional capacity building element by 2010. Between 50% and 65% of its projects included it as of the year 2013, showing cognition of the importance of technical assistance in the WASH projects. Intuitional capacity involves training all related training all related activities to improve skills, a focus on improving organizational procedures and process on how on how an attempt to build a relationship with a sector or simply providing space for hardworking professionals to focus on a new challenge.

African Development Bank-ADB (2017) noted that to improve water and sanitation in Papua New Guinea an assessment of barriers and enablers to the delivery of improved WASH in PNG needed to be done as well as reviewing the institutional structures of the department of national planning and monitoring. This was done through the ADB provision of technical assistance to the PNG government. The government was advised to strengthen peri-urban WSS management as well as prepare feasibility studies for water supply and sanitation schemes for selected district towns.

Seppey, Ridde, and Touré, *et al.* (2017) assessed a pilot project conducted in Mali to improve demand and supply of health services through financing performance in targeted services. The study's objectives were to understand the project's sustainability process and to assess its level of sustainability. The results showed a weak level of sustainability due to many factors. While some gains could be sustained (ex.: investments in long-term resources, high compatibility of values and codes, adapted design to the implementations contexts, etc.), lack of shared cultural artefacts around RBF, loss of different tasks and procedures, need of more ownership of the project by the

local stakeholders). Contextual and methodological gap were the focus of service sustainability and the study area-Mali, while this study focuses on WASH projects performance in Kenya.

McGinnis and Desai,*et al*. (2017) assessed the current knowledge around the costs of WASH components as well as financing models that could be applied to WASH in schools. A review protocol was developed using the "Cochrane Handbook for Systematic Reviews of Interventions" and a total of five literature screens were conducted which narrowed down the articles from an initial 3605 to 47. Results showed a lack of information around WASH costing, particularly around software elements as well as a lack of data overall for WASH in school settings as compared to community WASH. The review also identified several key considerations when designing WASH budgets or selecting financing mechanisms.

Also, Shannon and Murphy, et al. (2017)study sought to describe the current knowledge around the costs of WASH components as well as financing models that could be applied to WASH in schools. Results showed that there was lack of information around software elements as well as a lack of data overall for WASH in school settings as compared to community WASH. As such, technical challenges abound in project financing, a critical consideration which this study applied the WASH projects on OBA funding technique, from other institutions other than schools.

Ssengooba, Ekirapa, Musila, and Ssennyonjo (2015) aimed at documenting and analyzing the development (scaling up) process of RBF in Uganda from Jan/2003 to March/2015 and draw lessons for further scaling up and sustaining such initiative, nationally and internationally. This study covered a total of 7 RBF initiatives that have been implemented in Ugandan health sector since 2003. Findings indicate that several contextual factors influencing RBF development in Uganda were given. External factors included Donor influence, the global movement towards specific targets and policy transfer/importation of evidence. Internal factors supportive of RBF included dissatisfaction of government about current poor results and concern about rampant corruption scandals. Leadership/governance gaps and health systems/ sector issues were noted to have a negative effect.

Jimenez *et al* (2014) in their study posit that poor quality and rate reporting of progress and expenditure significantly impacted on the effectiveness of the social programme, insufficient funds at local level were reported as one of the main challenges in conducting appropriate of programme outcomes. Another critical hurdle to effective monitoring of the WASH projects was the delayed development and dissemination of the WASH guidelines, a comprehensive document produced at

central law that was set to guide local and regional governments implementing and assessing the SWASH activation,

Locally, WASH-FIN (2018) reported that Kenya's SUWASA's project challenges were bent on funding technicalities. The WSPs' limited understanding of the nuances around OBA and AOD processes, which led to some spending time applying for both and ending up not getting either, or applying for one and then after failing one, trying the other. Both processes resulted in loss of time and frustration. Some of the WSPs were also unaware of which application rules to follow for each subsidy which speaks to a need for stronger dissemination of requirements and coordination among donors and local partner institutions.The review also assessed what were the most common and well financed areas of investment with the study indicating that on the enabling environment side, institutional capacity building was by far the most common and well financed area. On the infrastructure side more finances were invested in servers than any other area. Given that on site sanitation is the most common form of improved sanitation in South Asia and sub-Sahara Africa (Who-Unicef 2017). Whether good practice for RBF influenced the performance of WASH projects in Kenya is to be evaluated in this current study.

Kamau (2015) study sought seeks to determine factors influencing sustainability of water sanitation and health projects implemented by Sustainable Development and Peace Building Initiatives at Fafi Constituency. The study examined a sample of staff drawn from the population of 32 management staff working at SYPD and 100 household beneficiaries in Fafi Constituency, Garissa County Kenya. The study concluded that there is a significant positive influence of technical expertise on sustainability of water sanitation and health projects. However, contextual gap was evident in technical capacity in funds mobilization and RBF models application.

Kenya county status (2010) report reviewed the WASH sector before devolution. The survey conducted by Ministry of Water and Irrigation in 2008 estimated that only 58 per cent of rural water systems were functional. However, much of the piped water supply infrastructure is run down as a result of years of under investment in maintenance, lacking distribution and storage systems, hence inadequate water sources are a common feature of piped system throughout the country. Metering is virtually nonexistent and little is known about the production and distribution capacity of these systems. Lack of functional water supply infrastructure has led to excessive prices for domestic water in peri-urban and rural areas surrounding major towns(WSRB, 2014).

2.3.5 Government and Donor Project Funding Policies

Governments play a critical role in the implementation of WASH projects that are mainly considered public services. Studies have sought to related government policies and regulations for financing and WASH projects performance. Lesley, Catarina and Victoria (2019) evaluated the foundations for mobilizing finance for WASH projects. Their paper presented the results of a collaborative effort of Water.org; the IRC water, sanitation and hygiene sector (WASH); and the World Bank Water Global Practice. They advocated that governments and donors should explore what can be done or with whom they can partner to mitigate these foundational issues to appeal more strongly to commercial lenders (domestic as well as international) as well as enhance the long-term sustainability of investments.

Donor funding has played and continues to play a critical role in the funding of public projects in developing economies including Kenya. Majority of the donor funds are channelled through bilateral agreements and diplomatic relations between the donor and receiving state governments. Notably, the funds may be from taxes paid in donor countries, or from multinational firms' investment in major projects. The donors may have specific policies on the funds injected in the projects, and these may have a positive and negative impact on project performance. Several studies have sought to relate donor and government policies on the success of projects all over the world.

Andres, Michael, Camilo, Alexander, George, and Christian (2019) World Bank report explores how scarce public resources can be used most effectively to achieve universal delivery of water supply and sanitation services. It analyzes the prevalence and performance of subsidies in the sector, then guide policymakers on improving subsidy design and implementation to improve their efficacy and efficiency in attaining their objectives.

Witter, Chirwa, and Chandiwana, *et al.* (2019) examined the political economy factors behind the adoption of the RBF policy, as well as the shifts in influence and resources which RBF may bring about, focusing on Zimbabwe, which has rolled out RBF nationwide in the health system since 2011, with external support. The study used an adapted political economy framework, integrating data from 40 semi-structured interviews with local, national and international experts in 2018 and thematic analysis of 60 policy documents covering the decade between 2008 and 2018. Findings highlighted the role of donors in initiating the RBF policy, but also how the Zimbabwe health

system was able to adapt the model to suit its particular circumstances – seeking to maintain a systemic approach, and avoiding fragmentation.

Paul, Lamine and Kashala, *et al*. (2018) analyzed and drew lessons from the experience of Belgian Development Agency (BTC)-supported PBF alternative approach - especially with regards to institutional aspects, the role of demand-side actors, ownership, and cost-effectiveness - and explores the mechanisms at stake so as to better understand how the "PBF package" functions and produces effects. It was found that influence of context is strong over PBF in Benin; the policy is donor-driven. Contextual gap was evident in merging adaptations of PBF to humanitarian settings and limited evidence of health system effects which may be contextually driven, thus requiring more in-depth analysis.

Locally, Nabifwo and Kimutai (2017) study sought to investigate the factors influencing sustainability of water sanitation and health projects implemented by AMREF in Nairobi County-Kenya. The study found that that there is a significant positive influence of community participation, technical expertise, funds utilization and political factors on sustainability of water sanitation and health projects. The study therefore recommends that the policy makers should ensure that the policies are favourable to the private sectors to make them have the will to participate in the project. However, the study did not focus on government policy initiatives for OBA financing technique and stakeholder engagement in WASH projects, a divergent approach in this study.

Miriti (2016) evaluated donor funding practices and financial sustainability of donor aided projects of World Vision Kenya. It was established that there was a positive correlation between donor financing policies and financial sustainability of projects. The policies guided the preparation of contracts, project duration, implementation and reporting by implementing teams.

Rajesh (2016) knowledge note on Kenya's water sector suggested that that policymakers have the duty to ensure adherence to a proper governance framework established through the regulatory process and to ensure that future key decisions with regard to tariff setting, organizational oversight, and financing are not politicized.

2.4 Theoretical Framework

The section reviews various theories that the study is anchored upon. Hence the study will be grounded on the following theories:

2.4.1 Resource Dependency Theory (RBT)

Resource Dependency theory is the study of how the external resources in an organization affect the behavior of the organization. The procurement of external resources is an important tenet of both strategic and tactical management of any company theory and was developed by Pfeffer and Gerald (1978). They proposed the dependency theory as a way to explain the behaviour of organizations by looking to the context in which they operate. Acquiring control over resources that minimizes their dependence on other organization and control over resources that maximize the dependency of other organizations on themselves (Ulrich D and JB Barney 1984).

The assumptions of the theory are that organizations are assumed to be comprised of internal and external locations which emerge from social exchanges formed to influence and control behaviour. The environment is assumed to contain scarce and valued resources essential to organizations survival. As such the environment poses the problem or organizations are assumed to work towards two related objectives (Omondi-Ochieng, 2019). The assumptions of the RBT include the view that uncertainty clouds an organization control of resources and makes its choice of dependence increases the need for links to other organization also increases such as declining profits may lead to expanded business activity through diversification and strategic alliances with other companies. Legally independent organization can therefore depend on each other.

Research using RDT has sought to observe organization adaptations to dependencies. One adaptation consist of aligning internal organization elements with environmental pressures RDT also assumes that organizations are assumed to be comprised of internal and external environment which emerge from social exchanges that are found to influence and control behaviour (Drees &Heugens, 2013).Hillman, Withers, and Collins (2009) posit that the environment is assumed to control scarce and valued resources that minimize their dependence on other organization and control over resources that minimize their dependence on other organizations. RDT is consistent with ecological and institutional theories of organization, where organizations are seen as persistent structure of order under constant reinterpretation and negotiation.

In the WASH projects, financing may be internal or/and external. However, water and sanitation service providers are mostly short of finances to improve WASH services that required huge

financing and a long return period. Thus establishing sustainable financing for Wash projects depends on resources, and the theory shall aid in evaluating the need for OBA subsidy, commercial lending and government policies on public service project financing in Kenya.

2.4.2 Profits Theory

The profits theory of investment was developed by Edward Shupino. The profits theory regards profits in particular undistributed profits as a source of internal funds for financing investments. Investments depend in profits in particular undistributed profits as a source of internal funds for financing investments. Investments depend on profits and profits in turn depend on income. In this theory profits relate to the recent past. If total income and total profits are high the returned earnings of the firm are also high (Eklund, Palmberg & Wiberg, 2012).

Eklund (2010) accords that retained earnings are of great importance for small and large firms when the capital markets is imperfect because it cheaper to use them .If profits are high the retained earnings are also high and the cost of capital is low and the optimal capital stock is large. This is why firms prefer to reinvest instead of keeping them in banks in order to buy securities or to give dividends to shareholders. Contrary, when their profits fail, they cut their investment projects.

WSPs are corporate companies which are linked to deliver water and sewerage services to their residents of their areas at affordable rates. The water and sewerage providers are also expected to generate profits, which may be reinvested in the wash projects by enhancing connectivity and increasing revenue base and organizational performance. Further, in order for WSPs to continue financing well, they must consistently invest in their systems, thus the onus of WASH project.

The government funding and donor support to WSPs has been getting limited over the years. Loans from banks are also getting very expensive. The only available alternative has been the use of retained earnings and reinvesting it into their systems so as to perform well financially. The profits theory regards profit in particular undistributed profits as a source of internal funds for financing investments. Investments depend on profits and profits in turn depend on income. The theory is based on the assumption that profits are related to the level of current profits and of recent past. The criticism of this theory has been that the firms current profit cannot be used to predict future profits. WASH service providers incomes vary with customers, demographics-rural/urban- and economic status at any particular period. The profits theory of investment shall aid

conceptualization of the need for OBA for WASH projects, eligibility for reimbursement and further aid up scaling.

2.4.3 Theory of change (ToC)

The theory of Change was proposed by Kurt Lewin, known as the father of social psychology, who developed a well-known three-step model for organizational change (Lewin, 1958). It is essentially a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context. Theory of change can be traced to the works of evaluation theorist and practioniners like Huey Chen, Peter Ross among others, who were focused on how to apply programme theories evaluation in the 1950s (Clark & Taplin, 2012). ToC is a way to describe the assumptions and logical reasoning underlying how a development intervention should obtain its intended results (Stein & Valters, 2012).

Centre of theory of change states that theory of change is a comprehensive description and illustration of a desired change is expected to happen in a particular context. It is focused in particular on mapping out or filling in the missing middle between what a programme or a change initiative does and how this leads to desired goals being achieved. Shea and Belden (2016) indicate that some US writers such as Weiss Chen and Patton, increasing highlighted the challenges in evaluating complex social or communal change programmes when it was not clear precisely, what the programmes had set out to do and hence were difficult to evaluate whether or not they had achieved it.

Weiss (1995) argued that a key reason why complex community initiatives are unclear about how the change process will unfold and therefore give little attention to the early and midterm changes that need to happen in order of a longer term goal to be realized. Since the publication of Weiss book, the use of planning and evaluation using theories of change has increased particularly among NGOS, government agencies, the U.N and many other organizations in developing and developed countries (James, 2011).

Theory of change it's a specific type of methodology for planning participation and evaluation that is used in philanthropy, not for profit and government sectors to promote social change. Theory of change defines long term goals and then maps backward to identify necessary preconditions. According to Wash alliance international (2012) has built the TOC around three integrated pillars which include developing a functioning and well established wash market in which the private sector producing quality product, enabling the government to take up its responsibility for creating

support policies and regulation for sustainable wash services and organize citizens to play a crucial role in Wash projects UNDG (2014).

Assumptions to be considered in TOC include causalities- what leads to what and how through what mechanisms. This includes how the proposed solutions contribute to the intended high-level development course. Implementation assumptions about how UNCT intervention should be designed and targeted in order to deliver the intended results for the intended target groups. External factors assumption about the influence of issues of issues outside the area of work that can facilitate or hinder the expected change's helps to precisely link between activities and the achievement of the long term goals .This theory leads ton better planning and better evaluation.

Alexandra chitty (2015) observed that use of a TOC helps teams work together to develop and communicate a shared understanding demonstrates that prudent financing of WASH projects results in increase in accessibility of water and sanitation by underprivileged. Application for financing therefore need to be presented in a way that allows the lender to evaluate the bankability of the borrowed and the financial liability of the projects being proposed (WSP, 2016).

Organizations choose to adopt the theory of change to help focus on an organization purpose and overall goal (Datta, Saugato & Mullainathan, 2014). In Wash projects the theory of change helps the organization to focus on delivery of water and sanitation. Theory of change helps individual organization to define its place in the sector. This can involve identifying where it can play a role that is different to other sectors. However, ToC may be limited by resources and thus, though planning for change may be a strategic approach to project financing, internal and external funds access determine success. Wash projects that use the theory of change are able to effectively communicate with donors and can be a valuable complement to the traditional case of approach when making approach to funders. Thus the theory is critical in evaluating the aspects of OBA including subsidy, loan and government policies as change factors.

2.8 Conceptual Framework

The conceptual framework presents the relationship between the independent, moderating and dependent variable.

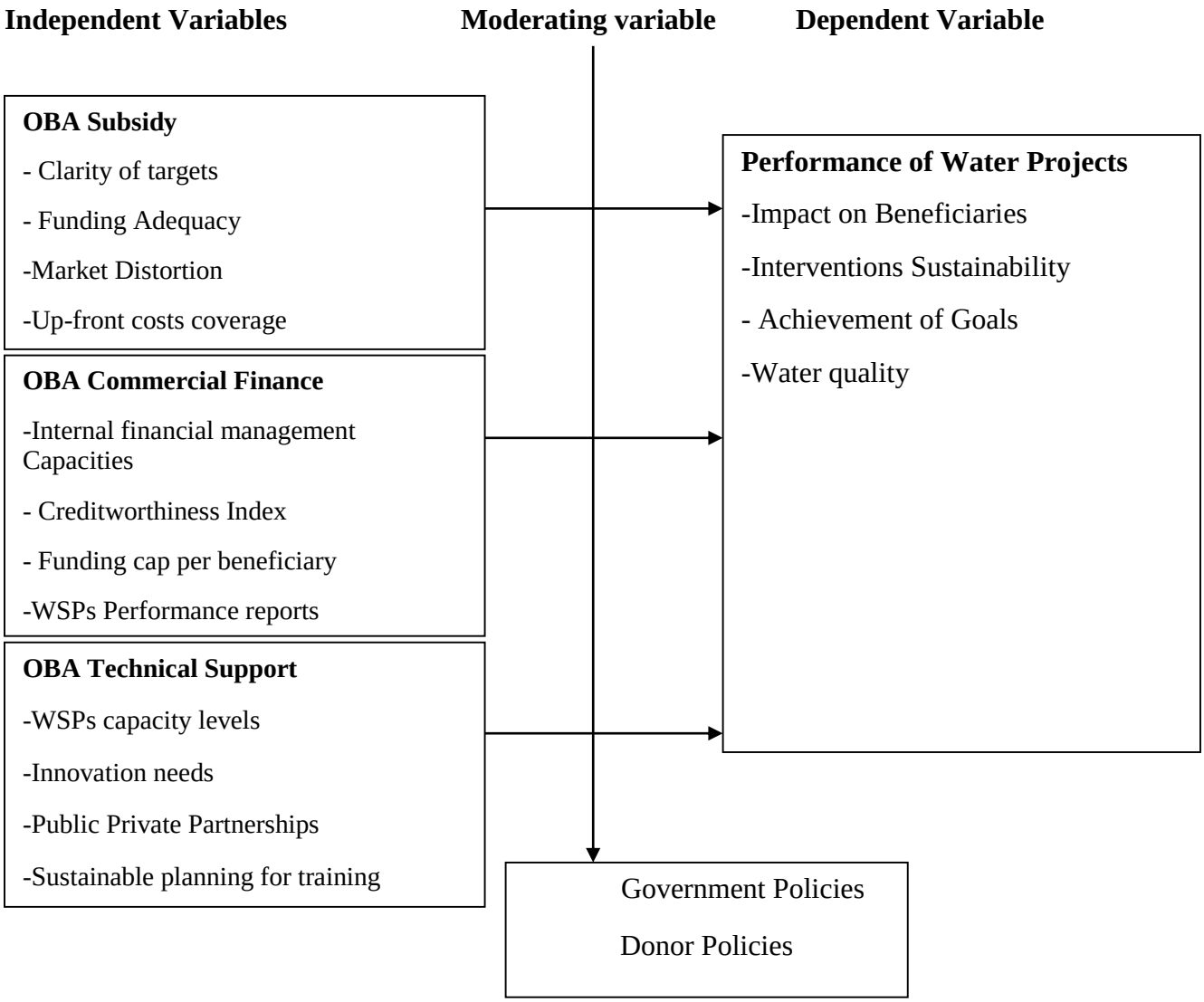

Figure 2.1 Conceptual Framework

Source: Researcher (2020)

2.7Summary of Literature Review and Research Gaps

Author	Focus of Study	Findings	Knowledge Gaps: (Conceptual, Contextual, Methodological or Empirical Gaps)	Focus of current study
Harold Lockwood, (2019)	Sustaining Rural Water: A Comparative Study of Maintenance Models for Community-Managed Schemes	Functionality of water infrastructure contracted under the Fundi Fix program has achieved functionality rates above 90 percent	Study focus was maintenance model with low aspects of project finance	OBA subsidy and performance of projects
Oliver and Keraita, *et al.* (2019)	State of wash financing in Eastern and Southern Africa	None of the focus countries of this study has any significant experience (i.e. beyond pilot level) of mobilizing commercial finance for WASH	Methodological: expertise endowment is institutional	Expertise endowment for WASH project teams in Nyeri and Embu Counties
Witter, Chirwa, and Chandiwana, *et al.* (2019)	Political economy factors behind the adoption of the RBF policy	Zimbabwe retained managerial and professional capacity,	Technical capacity of Kenya national and local governments on RBF policy	Technical capacity of Nyeri and Embu

Author	Focus of Study	Findings	Knowledge Gaps: (Conceptual, Contextual, Methodological or Empirical Gaps)	Focus of current study
				Counties on RBF policy
Oyugi, Kioko and Kaboro (2018)	Perceived quality of care and satisfaction of reproductive health services under the output-based approach (OBA) services in Kenya	The quality of OBA services was high	Methodological gap in the study area of maternal; health	Focus is on WASH projects in Nyeri and Embu County
Paul E, Lamine Dramé M, Kashala JP, *et al*. (2018)	Analysis and lessons from the experience of Belgian Development Agency (BTC)-supported PBF alternative approach	Influence of context is strong over PBF in Benin; the policy is donor-driven.	Contextual,: effect of donor and government policy on OBA functionality	WASH funding government policy and OBA functionality for WASH projects in Nyeri county
Goksu, Trémolet, Kolker and Kingdom (2017)	Easing the Transition to Commercial Finance for Sustainable Water and Sanitation	Some WSPs lack access to finance	Contextual- lack of access to finance and WASH project performance	Influence of lack of access to finance on WASH

Author	Focus of Study	Findings	Knowledge Gaps: (Conceptual, Contextual, Methodological or Empirical Gaps)	Focus of current study
				project performance
McGinnis and Desai, *et al*. (2017)	assessing the current knowledge around the costs of WASH components as well as financing models that could be applied to WASH in schools	Llack of information around WASH costing	Study area was on schools	WASH projects in Nyeri County
Seppey, Ridde, and Touré, *et al.* (2017)	Assessment of a pilot project conducted in Mali to improve demand and supply of health services through financing performance in targeted services	lack of sustainability planning was observed	Contextual and methodological gap were the focus of service sustainability and the study area-Mali	WASH projects performance inNyeri County
Nabifwo and Kimutai (2017)	Factors influencing sustainability of water sanitation and health projects implemented by	A significant positive influence of community participation, technical	Lacked focus on RBF and OBA funding mechanisms.	Focus is on OBA financing foe WASH projects in

Author	Focus of Study	Findings	Knowledge Gaps: (Conceptual, Contextual, Methodological or Empirical Gaps)	Focus of current study
	AMREF in Nairobi County-Kenya.	expertise, funds utilization and political factors on sustainability of water sanitation and health projects		Nyeri County
Ssengooba, Ekirapa, Musila, and Ssennyonjo (2015)	Documenting and analyzing the development (scaling up) process of RBF in Uganda from Jan/2003 to March/2015	Donor influence; dissatisfaction of government about current poor result on corruption and leadership gaps affected scaling up of projects	Study area was Uganda	WASH projects in Nyeri County, Kenya
Kamau (2015)	Factors influencing sustainability of water sanitation and health projects implemented by Sustainable Development and Peace Building Initiatives at Fafi Constituency	There is a significant positive influence of technical expertise on sustainability of water sanitation and health projects	Effect of technical expertise on OBA financing in WASH projects	Technical capacity and effect on performance of WASH projects in Nyeri County, Kenya

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology adopted in this study. It entails the research design, target and sample populations, research instruments and their pilot study, data collection procedure and data analysis and presentation.

3.2 Research Design

The study adopts the descriptive survey design. Descriptive survey has been described by Behrisch (2016) as a technique used in collecting information about some current status of a persons, objects or situations. It helps researchers describe the actual situation as it exists. In this study, it is appropriate since it shall enhance effectiveness of data collection from the large population of employees in the water service providing institutions in Nyeri County. According to Mitchell and Jolley (2012), it also cheaper and workable within a short time and this ensures achievement of the study objectives within stipulated timeframe. Further, the design enables collection, analysis and reporting information as it exists in the field.

3.3 Target Population

The target population is described as an actual population of interest in a study (Yin, 2011). This study focussed on key stakeholders in the management of donor funded projects in water service providers in Nyeri County including NyeriWater and Sanitation Company (NYEWASCO), OMWASCO (Othaya/MukurweiniWater and Sanitation), MAWASCO (MathiraWater and Sanitation Company), TEAWASCO(Tetu and AberdareWater and Sanitation Company) and NARUWASCO (NaroMoruWater and Sanitation Company.) in Nyeri County.

The target population was ninety nine (99) employees as categorized in table 3.1 below. These persons are deemed key informants due to their nature of engagement in water projects in the individual institutions. Selected persons are the chief executive officers of the five institutions, and officers engaged in the technical department which is supported by the following units: Water Production unit, Laboratory Services Unit, Non-Revenue Unit, Water Distribution Unit, Metering Unit, Electrical Mechanical Unit, Geographical Information Systems (GIS) and the Sewerage Section.

The other officers are engaged in the commercial departments composed of the following sections/units; Accounting, Finance and Budgeting, Revenue Collection, Accounts and Records, Payroll Unit, Human Resource Department, Transport Unit, Procurement Unit, Stores Unit, Meter Reading Unit, Customer Relations, Information and Communication Technology and Debt Collection. These departments are all involved in institutional projects for water service provision. It is from these that a sample will be drawn.

Table 3.1 Target Population

Institution	Population	Percentage
Chief Executive Officer	5	5.0%
Heads of Technical Services	34	34.4%
Finance and Administrative Heads	46	46.5%
Project Managers	5	5.0%
Project Management Staff	9	9.1%
Total	**99**	**100%**

3.4 Sample Size and Sampling Procedure

Franklin (2012) describes sample as a sub group representing the entire target population in the study. To get the study sample, census sampling method was adopted. Behrisch (2016) describe census sampling as the study of all units and/or consideration of the whole target in a population as the sample. It is also known as a complete enumeration, which means a complete count. In census sampling, the entire targeted population is normally very small or it is deemed fit to include the entire population. All targeted 99 respondents participated.

3.5 Data Collection Instruments

The study utilized a structured questionnaire in primary data collection. The questionnaire comprised closed ended questions. According to Orodho and Kombo (2002), questionnaires are

research instruments consisting a series of questions and prompts for information gathering from respondents.Questionnaires will be used in this study because they are more effective when sensitive issues are to be addressed. They also reduce respondents' reluctance and/or deviation from study subject. Furthermore, they can be easily administered and helps economies of time and money. They are also easy to analyze.

3.5.1 Pilot Testing of Research Instruments

Pre-testing of research instruments is critical in gathering credible and reliable data for the study. Piloting is pre-testing the research instrument to ensure it achieves expected objective of information gathering. It is undertaken to improve the quality and efficiency of data collection process (Mitchell &Jolley, 2012). Piloting tested the validity and reliability of the research instrument. It reveals inadequacies of research instruments and enables redesign of questions before expending time and resources large- scale during the study. The pilot test involved five randomly selected officers from Muranga Water and Sanitation Company, Muranga County and the respondents were not engaged in the main study.

3.5.2 Reliability of the Instruments

Research instrument reliability is its level of its consistency of results from tests over time (Mugenda and Mugenda, 2012). Reliability was enhanced through conducting a pilot test. This involved administering the instruments to the selected pilot study respondents and after two weeks, the same instruments were administered to the same respondents. Coefficients of reliability was expected to be equal to or greater than 0.7 (≥ 0.7), tested through the use of cronbach alpha statistic.

3.5.3 Validity Test

Validity is the accuracy of inferences emanating from study results. Thus, validity is the meaningfulness of results obtained from data analysis, and whether they actually represent the phenomenon under study (Franklin, 2012). In enhancing validity, experts in the field of research including the supervisor was consulted.Content validity was achieved through guidance of the supervisors on adequate preparation of the instruments and relating the items to the objectives will be observed. According to Mitchell &Jolley (2012), the clarity of the language to be used may be confirmed by subjecting the respondents to the instruments through a pilot study with a view of confirming their capacity to understand the language used in the instruments. In case of any

misunderstanding or ambiguity, the researcher will make changes on the instruments to ensure that it conforms to the understanding of the target group.

3.6 Data Collection Procedure

During data collection, administration of questionnaires was through the drop and pick-later method. Thus respondents were given at least one week to answer the questions, and the questionnaire thereafter gathered for analysis. Before commencement of the administration of the instruments, University authority gave permission to collect data and a study authorization letter from the National Commission of Science, Technology and Innovation (NACOSTI). Authority from the water service provider was also obtained after presenting the research permit to enable access to respondents. The researcher then visited the immigration and security offices to familiarize and ascertain suitable time for accessing respondents.

3.7 Data Analysis and technique

Analysis of data is a systematic process that applies statistics and/or logical techniques to describe and evaluate collected data. It involves categorization, ordering, manipulation and summarizes data in answering research questions (Mitchell & Jolley, 2012). The purpose to obtain meaning from collected data. In this study, data analysis commences with sorting and categorizing the data received, as well as coding for the purpose of inputting it into the computer. The qualitative data analysis will be conducted using themes and patterns, with quantitative data analyzed using descriptive statistics as well as inferential statistics, while applying SPSS version 22.0 computer software.

In inferential statistical analysis, the multiple linear regression model will be used to determine the extent to which there is a linear relationship between the independent variables (OBA subsidy, commercial loans and technical assistance and the dependent variable (water projects performance). Inferential analysis will sought to model the association between the variables by fitting a linear equation to observed data. One variable is considered to be an explanatory variable, and the other considered a dependent variable. The regression model used in this study is shown below:

$$Y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + e$$

Where:

Y = Project Performance

a = Constant

x_1-OBA Subsidy

x_2- OBA Commercial Loan

$\mathbf{x_3}$= OBA Technical Assistance

e = error term

$b_1 – b_3$ = regression coefficients associated with the independent variables $x_1 – x_3$

Hereby, the model was applied to establish whether the selected OBA approaches (Subsidy, Commercial Loan and Technical Assistance approach) affect the performance of water projects.

3.8 Operationalization of Variables

Variable	Measurement Scale	Description	Measurement
Water Projects Performance	**Ordinal**	Successful completion of projects, consumer value development and achievement of accessible quality water to communities	Impact on Beneficiaries -Interventions Sustainability - Achievement of Goals -Water quality
OBA Subsidy	Ordinal	Initial project costs cover, level of cover per beneficiary, and successful project implementation	- Clarity of targets - Funding Adequacy -Market Distortion -Up-front costs coverage
OBA Commercial Loan	Ordinal	Access to ordinary loans for WSPs, and level of assistance by Donors, upon results achievement	Internal financial management Capacities - Creditworthiness Index - Funding cap per beneficiary -WSPs Performance reports
OBA Technical Assistance	Ordinal	Technical capacity development of WSPs in OBA to ensure sustainability of projects	WSPs capacity levels -Innovation needs -Public Private Partnerships -Sustainable planning for training
Government and Donor Policy	Ordinal	Government and donor policies in Water sector,	-Government policies influence on water sector

		and influence on project initiation, implementation and completion	-Donor funding policies influence on water projects

3.9 Ethical Considerations

Ethics is a pillar in conducting acceptable research for ethical conduct of researchers is always under scrutiny. The study obtained authorization for collection and ensure respondents' confidence. Consequently consent was sought from all the respondents that are in line with major ethical issues of conducting research which states that, a respondent should knowingly, voluntarily, intelligently give their consent (Mitchell &Jolley, 2012). Further, all the respondents were assured of confidentiality of information provided.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the data analysis, interpretation, presentation and discussion. This study was guided by the following specific objectives; to establish the extent to which use of OBA subsidy influence performance of Water Projects in Nyeri County, to analyze the extent to which use of commercial loans influence performance of Water Projects in Nyeri County, to examine the extent to which use of technical support influence performance of Water Projects in Nyeri County.

4.2 Questionnaire return rate.

Responses	Frequency	Percentage
Responded	71	83
Not responded	28	19
Total	99	100

The researcher distributed a total of 99 questionnaires. Out of these, 71 questionnaires were returned completely and well filled whereas 28 were either returned as faulty or were not received back at all and were therefore not incorporated in analysis giving the study a response rate of 83%. The response rate was found to be adequate according to Mugenda and Mugenda (2010) who advocates that a response rate of 75% or above is adequate and pleasing for any given academic research.

4.3 Demographic characteristics

Table 4.1: Gender of the Respondents

The section below sought to find out the gender distribution of the respondents

Gender	Frequency	Percentage
Male	47	53
Female	41	47
Total	88	100

The study wanted to establish the gender of the respondents; According to the study findings, majority of the respondents were male as shown by 53% whereas the rest were women as shown by 47%.

Table 4.2: Respondent's position in the water companies

The researcher sought to establish the respondent's position in the water companies.

Position	Frequency	Percentage
Chief executive officer	32	39
Heads of technical services	26	30
Finance and administrative heads	28	32
Project managers	21	35
Project managers staff	22	30
Total	88	100

According to the results displayed in the table above, 39% of the respondents were chief executive officers, 30% were head of technical services to the water companies whereas 28% were finance and administrative heads, 21% were project managers and 15% said they were project management staff respectively. An implication that the researcher was able to balance out the sampled group categories.

Table 4.3: Respondents' Highest Level of Education

Education level	Frequency	Percentage
Primary level	23	26
Secondary level	41	47
College level	13	15
University level	11	13
Total	88	100

The study sought to establish the respondents' highest level of education. On this question, 47% of the respondents had secondary level education, 26% were primary level education, and 15% had college level education whereas the rest as shown by 13% had university level education respectively. This implied that the levels of education of the respondents was adequate enough and hence were able to understand the questions raised in the research tool.

Table 4.4: Age Bracket of the Respondents

Age bracket	Frequency	Percentage
Below 30 years	31	35
31 to 40 years	41	47
41 - 50 years	14	16
51-60 years	2	2
Total	88	100

The researcher wanted to find out the age bracket of the respondents. According to the findings displayed in the table above, 47% said they were aged between 31-40 years, 35% below 30 years, 16% said between 41-50 years whereas only a few who said they were aged above 51-60 years respectively. This was an implication that the respondents age brackets were adequately mature to understand well the issues surrounding the management of the water companies.

Table 4.5: Duration respondent have been in the water projects

Duration	Frequency	Percentage
1 - 2 years	43	49

2 – 3 years	21	24
3 – 4 years	13	15
5 Years and Above	11	13
Total	88	100

The study wanted to establish the duration for which respondents have been in the water companies. On this question, majority of the respondents as displayed in the table above 49% said they were in their respective companies in duration of 1-2 years, 24% said 2-3 years, 15% said 3-4 years whereas 13% said that they have been the group for duration of 5 years and above. This implied that most of the respondents had been in the water companies for a lesser period but understood well on issues regarding the raised questions in the study.

4.4 Source of funding for various water projects in Nyeri county water and sewerage companies

The section below presents the analysis on the source of financing of the various water companies in Nyeri County.

Table 4.6: Respondents' source of funding for their water projects

Level	**Frequency**	**Percentage**
Community contribution	10	11
Institutional finances	39	44
Government funds	25	28
Donor funds	12	14
Commercial loans	88	2

The study sought to find out the respondents' source of funding for the various water projects undertaken by the respective water companies. According to the results displayed in the table above; 44% of the respondents were funded through institutional finances, 28% by government funds, 14% through donor funding, 11% said that they were very funded through community contribution respectively whereas 2% said they were funded through commercial loans.

4.5 Influence of OBA financing structure on initiation of water projects in Nyeri county

The section below presents findings on the influence of OBA(in full) financing on intiation of water projects in various water companies in Nyeri County

Table 4.7: Respondents level on influence of OBA financing in various water companies projects

Levels	**Frequency**	**Percentage**
Very high	9	10
High	41	47
Average	25	28
Low	11	13
Very low	2	2
Total	**88**	**100**

The researcher sought to find out the respondents' level of influence by OBA financing on the various water projects initiated by the water companies. According to the results displayed in the table above, majority of the respondents as shown by 47% stated a high influence while 28% stated an average influence,13% had a low influence while 10% of the responded figured out a very high influence of OBA financing on the initiated water projects.

Table 4.8: Respondents level of agreement on statements regarding the influence of OBA subsidy on water projects performance

Statements	Strongly agree	Agree	Moderately agree	Disagree	Strongly Disagree	Mean Score	Std. Dev
OBA subsidies help the WSPs cover water projects works (trenching, piping, metering, taps) without relying on communities' charges	23	69	4	3	1	4.1	0.0021
OBA subsidies are effectively targeted to ensure the WSP water projects achieve financial sustainability	24	68	4	3	1	4.1	0.0011
OBA subsidies are sufficient in covering project implementation costs targeted (e.g. meter installation costs for all water users)	24	64	7	5	0	4.07	0.0331
OBA subsidy upfront costs coverage motivates the consumers to pay for water charges upon project implementation	18	70	12	0	0	4.06	0.0330

The researcher wanted to establish the influence of OBA financing on the various water projects initiated by the water companies. According to the findings displayed in the table above, majority of the respondents were in agreement as shown by the mean scores of 4.1, 4.1, 4.07 and 4.06.

4.6 OBA Technical Support and Water Projects Performance

The section below presents the results of influence level of OBA technical support on water projects performance.

Table 4.9: Respondents level of satisfaction on the influence of OBA technical support on water projects performance.

Levels	**Frequency**	**Percentage**
Very satisfied	13	15
Satisfied	36	41
Undecided	12	14
Dissatisfied	21	24
Very dissatisfied	6	7
Total	**88**	**100**

The researcher sought to find out the respondents' level of influence level of OBA technical support on water projects performance.

According to the results displayed in the table above, majority of the respondents as shown by 41% were in satisfaction on the influence of OBA technical support on water projects in Nyeri county 14% said they were undecided, 24% were dissatisfied, 15% said very satisfied whereas 7% said that they were very dissatisfied on OBA technical support.

Table 4.10: Respondents level of agreement on Government and Donor Policies and water projects Performance

Statements	Strongly agree	Agree	Moderately agree	Disagree	Strongly Disagree	Mean score	Std. Dev
Donor policies guide the project process, giving donors control over the process	11	49	38	1	1	3.27	.2033
Donor expenditure protocols introduce caps, targets and other conditions that can affect effective implementation of water projects especially for poor communities	13	50	35	1	1	3.22	.1023
Donor funding procedures may delay funds disbursement and timely completion of projects	7	77	12	2	2	3.05	.1110
Government policies on funding may be influence by political factors, constraining donor relations and project undertaking	10	76	10	2	2	3.00	.0022

Majority of the respondents were in agreement that government policies on funding may be influenced by political factors, constraining donor relations and project undertaking.

4.10 Inferential statistics

4.10.1 Results Based On Model of Estimation

The table below presents the model of estimation on the relationship between the studied variables.

Table 4.11**:** Model of Estimation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df 1	df 2	Sig. F Change
1	.897[a]	.805	.803	.08978	.00804	3437.1	3	3	.000

a. Predictors: (Constant), OBA subsidies, OBA commercial finance, OBA technical support

b. Dependent Variable: Performance of water projects initiated through OBA financing in Nyeri county water companies

Adjusted R squared is coefficient of determination that shows the changes in the dependent variable as a result of variations in the independent variables. As can be seen from the above Table 4.15, the adjusted R value was at 0.803, showing a change of 80.3% on dependent variable. This indicates that the model was a good fit in as indicated by the predictors which are the knowledge sharing practices. In addition, the adjusted multiple coefficient of determination of 0.803 indicates the high joint impact of the explanatory variables. It means that 80.3% of changes in performance of water projects in Nyeri County, Kenya are explained by the influence of donor funding through the OBA model.This can be confirmed by the high figure of F value of 3437.1 which implies a high joint explanatory ability.

4.10.2 Results based on ANOVA Test

The section below presents the Analysis of Variance (ANOVA)

Table 4.12: Analysis of Variance (ANOVA)

ANOVA[a]						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	133.210	4	33.3025	2513.10	.000[b]
	Residual	2.111	121	.0174		
	Total	135.321	125			

a. Dependent Variable: Performance of water projects in Nyeri county, Kenya

b. Predictors:(Constant), OBA subsidies, OBA commercial finance,OBA technical support

The findings of the ANOVA are as shown in the above Table 4.22. The p-value was at 0.000 which is lower than 0.05. From the regression analysis findings, the model was significant when it comes to predicting the Performance of water projects in Nyeri county, Kenya at 95% confidence level based on predictor variables OBA subsidies, OBA commercial finance and OBA technical support.

4.10.3 Correlations among the various OBA financing factors influencing water projects in water companies in Nyeri county, Kenya

The Table 4.23 below presents the correlations of various OBA financing strategies influencing water projects in water companies in Nyeri county, Kenya

Table 4.13: Pearson Coefficient Correlations

		OBA subsidy financing	OBA commercial financing	OBAtechnical support
OBA subsidy financing	Pearson Correlation	1	.361**	.323**
	Sig. (2-tailed)	.000	.000	.000
	N	88	88	88
OBA commercial financing	Pearson Correlation	.361**	1	.474**
	Sig. (2-tailed)	.000	.000	.000
	N	88	88	88
OBA technical support	Pearson Correlation	.323**	.474**	1
	Sig. (2-tailed)	.000	.000	.000
	N	88	88	88
Capacity Building Techniques Sharing Practice	Pearson Correlation	.419**	.411**	.927**
	Sig. (2-tailed)	.000	.000	.000
	N	88	88	88
	Pearson	.221**	.311**	.257**

Management Skills Sharing Practice	Correlation Sig. (2-tailed)	.000	.000	.000
	N	88	88	88

** Significance level at 95% Level of Confidence

The researcher used Pearson's correlation coefficient test at alpha level 0.05 to determine the relationship between each of the independent variables (OBA subsidy, commercial financing and OBA technical support). (r=0.782, p=0.000). Correlation analysis done also indicates a significant association at the 0.05 level (2-tailed).

4.10.4 Regression Model on OBA financing factors influencing water projects in water companies in Nyeri County, Kenya

The Table 4.24 below presents the combined regression model on OBA financing factors influencing water projects in water companies in Nyeri County, Kenya

.

Table 4.14: Regression Coefficients

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	Std. Error	Beta		
(Constant)	2.321	.024		154.661	-
OBA subsidies	.236	.009	1.226	99.883	.011
OBA commercial financing	.019	.003	.006	.708	.020
OBA technical support	1.540	.032	3.489	81.314	.032

a. Dependent Variable: **performance of water projects in water companies in Nyeri county,Kenya**

As shown in the Table 4.24, the regression equation model for the study was of the form; $\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X5 + \varepsilon)}$ where Y = Dependent variable (Performance of water projects in Nyeri County, Kenya), β_0 = Constant (The intercept of the model), β= Coefficient of the X variables (independent variables), X_1= OBA subsidies, X_2= OBA commercial financing, X_3= OBA technical support.The figures in the above table were generated through the use of SPSS data analysis and established the following regression equation; $\mathbf{Y = 2.321+0.236X_1 + 0.019X_2 + 1.540X_3}$.

The study found that when independent variables (X_1- X_3) were kept constant at zero, performance of water projects in water companies in Nyeri county,Kenya will be at 2.321. A rise by a unit in OBA subsidy will result to a rise in performance water projects in Nyeri water companies, by a factor of .236; a rise by a unit in OBA commercial financing will result to a rise in Performance of water projects in water companies in Nyeri county by a factor of .019, a rise by a unit in OBA technical support in performance water projects by a factor of 1.540.The Table 4.24 also shows that the X variables (independent variables), X_1= OBA subsidies, X_2= OBA commercial financing, X_3= OBA technical support, with Y= performance of water projects in water companies in Nyeri county, Kenya were significant at 5% level of significance and 95% level of confidence at .011, .020 and .021 respectively.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of findings, conclusions, recommendations and recommendations for further studies. The purpose of this study was to assess the influence of Donor Outbased financing on performance of water projects in water companies in Nyeri County. This study was guided by the following specific objectives; to establish the extent to which use of OBA subsidy influence performance of Water Projects in Nyeri County, to analyze the extent to which use of commercial loans influence performance of Water Projects in Nyeri County and to examine the extent to which use of technical support influence performance of Water Projects in Nyeri County.

5.2 Summary of Findings

The section below presents the discussion of findings of the study;

5.2.1 OBA subsidies and Performance of water projects in Water companies, Nyeri County.

The study found out that 44% of the respondents said that they were satisfied on the influence of donor subsidies extended to them. According to the findings, majority of the respondents were in agreement that; they were happy that the technical support has been a critical component in the project successes; they already understand the value of the OBA commercial financing as shown by the mean scores of 4.14, 4.14, 4.08, 3.85, 3.83 and 3.83 respectively.

5.2.2. OBA commercial financing and Performance water projects in water companies in Nyeri County

The study found out that majority of respondents' shown by 47% were in satisfaction on the influence of the commercial financing on performance of the water Projects. According to the findings displayed in the table above, majority of the respondents were in agreement that; OBA commercial financing had a great influence on performance of water projects as shown by the mean scores of 4.1, 4.1, and 4.06 respectively.

5.2.3 OBA technical support and Performance of water projects in Nyeri county water companies

The study found out that majority of respondents' as shown by 41% were in satisfaction on the influence of technical support from the donors and was adequate as shown by the mean scores of 3.27, and 3.00 respectively.

5.2.6 Performance of Nyeri county water companies Projects

The findings indicated that majority of the respondents said that; they were satisfied with the donor OBA model of financing their water projects. They have acquired awards and other appraisals due to timely completion of projects as shown by the mean scores of 4.05, 4.04 and 4.03 respectively.

5.3 Conclusions

The study concludes that majority of the respondents were in agreement that; they were happy that the OBA subsidies has been a critical component in the project successes, they already understand the value of donors input through commercial financing, the management and community members can now utilize professional knowledge passed on to them to enhance projects performance, they are happy that technical support has enabled community interactions in the water developmental projects.

The study concludes that most water companies were satisfied on the subsidies received, the commercial financing and technical support as far as donor support and financing through OBA model is concerned.

5.4 Recommendations

The study recommends that the government, through the various donor agencies develop policies that will adequately support all water projects in Nyeri county.Its also very important that the same be extended to other counties in Kenya especially Isiolo and Garrisa counties

5.5 Suggestions for Future Studies

The researcher recommends that further studies be done to find out other knowledge on OBA financing and related practices that were not included in this study. To better inform on policy and knowledge practices on issues related with the performance of community based water projects, a study on control measures through internal control systems would be recommended for future studies by other researchers.

5.6 Contribution to the Body of Knowledge

The researcher was able to compute both descriptive and inferential statistics especially in establishing the extent to which each of the studied factors influenced performance of donor funded water projects in terms of correlation and regression analysis which will help and inform more towards the body of knowledge about knowledge sharing and related practices.

REFERENCES

Andres, L.A.; Michael, T.; Camilo, L.C.; Alexander, V.D.; George, J.; Christian, B.-V. (2019) *Doing More with Less: Smarter Subsidies for Water Supply and Sanitation*; World Bank: Washington, DC, USA

Bender, K. (2017) *Introducing Commercial Finance into the Water Sector in Developing Countries*; The World Bank: Washington, DC, USA

Bertone MP, Falisse J-B, Russo G, Witter S (2018) *Context matters (but how and why?)*. A hypothesis-led literature review of performance based financing in fragile and conflict-affected health systems. PLoS ONE 13(4)

Cummings, C.; Langdown, I.; Hart, T. (2016) *What Drives Reform?* Making Sanitation a Political Priority in Secondary Cities; Overseas Development Institute: London, UK,

Fonseca, C.; Pories, L. (2017) Financing WASH: *How to Increase Funds for the Sector While Reducing Inequities*: Position Paper for the Sanitation and Water for All Finance Ministers Meeting; IRC Briefing Paper; IRC: The Hague, The Netherlands

Garmaise, D. (2016) Resources for the community response must increase if we are to meet our targets:*Report reviews experiences of six countries where governments have allocated funding to CSOs.* UNAIDS

Harold Lockwood, (2019) *Sustaining Rural Water: A Comparative Study of Maintenance Models for Community-Managed Schemes* . Sustainable WASH Systems Learning Partnership. USAID, New York

Johnston, E.A., Teague, J. & Graham, J.P. (2015) *Challenges and opportunities associated with neglected tropical disease and water, sanitation and hygiene inter-sectoral integration programs*. BMC Public Health15**,** 547

Kamau F. M. (2015)*Factors Influencing Sustainability of Water Sanitation and Health Projects Implemented by Sustainable Development and Peace Building Initiatives at Fafi Constituency, Garissa County Kenya*. Unpublished MA Thesis, University of Nairobi, Nairobi.

Katuva, J. (2016) "Water for Everyone"**:** *FundiFix: exploring a new model for maintenance of rural water supplies:* Peer Review .7th RWSN Forum,29 Nov - 02 Dec 2016, Abidjan, Côte d'Ivoire

Leigland, J.; Trémolet, S.; Ikeda, J.(2016) Achieving Universal Access to Water and Sanitation by 2030: *The Role of Blended Finance*; WB Working Paper; The World Bank: Washington, DC, USA,

Lesley, P., Catarina, F., and Victoria, D. (2019) Mobilizing Finance for WASH: *Getting the Foundations Right*. Water Article. The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; vdelmon@worldbank.org

McGinnis SM, McKeon T, Desai R, et al. (2017) A Systematic Review: Costing and Financing of Water, Sanitation, and Hygiene (WASH) in Schools. *International Journal of Environmental Research and Public Health.14* (4)

Miriti D. Mugambi (2016) *Donor Funding Practices and Financial Sustainability of Donor Aided Projects in World Vision Kenya*. Unpublished MBA project, University of Nairobi, Nairobi.

Nabifwo, L.W.. &Kimutai, G., (2017) Sustainability of Water, Sanitation and Health Projects Implemented by African Medical and Research Foundation in Nairobi City County, Kenya. *International Journal of Entrepreneurship and Project Management, Vol.2*, Issue 4 No.1, pp 1 – 12

Nahimana E, McBain R, Manzi A, et al. Race to the Top: evaluation of a novel performance-based financing initiative to promote healthcare delivery in rural Rwanda. *Glob Health Action.* 2016;28;9:32943.

Oliver J., Goufrane M., Peter B., Samuel G., and Keraita, B., (2019) *The State of Wash Financing in Eastern and Southern Africa: Regional Level Assessment*. Oxford Policy Management. UNICEF Regional Office for Eastern and Southern Africa, Nairobi, Kenya.

Oyugi, B., Kioko, U., Kaboro, S.M. *et al.* (2018) *A facility-based study of women' satisfaction and perceived quality of reproductive and maternal health services in the Kenya output-based approach voucher program*. BMC Pregnancy Childbirth18**,** 310.

Paul E, Albert L,Bisala BN'S, *et al*. (2018) Performance based financing in low income and middle-income countries: isn't it time for a rethink? *BMJ Glob Health*;3.

Paul E, Lamine Dramé M, Kashala JP, *et al*. (2018) Performance-Based Financing to Strengthen the Health System in Benin: Challenging the Mainstream Approach. *International Journal of Health Policy and Management.* Jan;7(1):35-47

Rajesh A., (2016) *Scaling Up Blended Financing of Water and Sanitation Investments in Kenya*. WB Knowledge Note; The World Bank: Washington, DC, USA.

Ruben Walker, Gareth Martin, Léonide Sinsin), Marcel Raats & Tom Derksen (2017) *The Role of Results Based Financing in Realizing Sustainable Energy for All*. EnDev and SNV. SE for All Forum, New York City, 3-5.

Ssengooba, F., Ekirapa, E., Musila, T., & Ssennyonjo, A., (2015) *Implementation research*: *Taking Results Based Financing from scheme to system*: Analysis of the Policy Process for Scale-Up in Uganda (2003-2015). Makerere University School of Public Health and Ministry of Health,Uganda

Shannon M. McGinnis, Thomas McKeon, Richa Desai, Akudo Ejelonu, Stanley Laskowski, and Heather M. Murphy, (2017)A Systematic Review: Costing and Financing of Water, Sanitation, and Hygiene (WASH) in Schools. *Int J Environ Res Public Health, 14*(4): 442.

Steel, W.F.; Darteh, B. (2018) *Strategies for Household Sanitation: Ghana's Experience with Output-based Aid and Implementation of the Greater Accra Metropolitan Area Sanitation & Water Project*; Consultant report prepared for the Global Partnership for Output-based Aid (GPOBA) and the Ghana Ministry of Sanitation and Water Resources; World Bank: Washington, DC, USA.

Van de Lande, L.; Fonseca, C., (2018) Global Review of National Accountability Mechanisms for SDG6; *End Water Poverty*: London, UK.

WASH-FIN (2018) *Kenya Project Brief Access to Commercial Finance for Wash in Kenya* , Nairobi

Water Services Regulatory Board (WSRB), (2014). IMPACT: *A Performance Review of Kenya's Water Services Sector, 2013–2014*, issue 8, pages 9, 19 & 25 (Nairobi: WSRB).

Witter, S., Chirwa, Y., Chandiwana, P. *et al.* (2019) *The political economy of results-based financing: the experience of the health system in Zimbabwe*. glob health res policy4**,** 20.

Seppey, M., Ridde, V., Touré, L. *et al.* (2017) Donor-funded project's sustainability assessment: a qualitative case study of a results-based financing pilot in Koulikoro region, Mali. *Global Health*13**,** 86

APPENDIX I

INTRODUCTION LETTER

ESTHER GIKAMA

Dear Respondent,

RE: **DATA COLLECTION FOR A STUDY ON THE RELATIONSHIP BETWEEN DONOR OUTPUT BASED AID FINANCING AND PERFORMANCE OF WATER PROJECTS IN NYERI COUNTY**.

I am student of the University of Nairobi. I am undertaking a study on the relationship between Donor Output Based Aid Financing and performance of water projects in Nyeri County. This is part of the university requirement in partial fulfilment of the postgraduate degree.

For that matter, I have developed a questionnaire aimed at obtaining relevant data. I wish to request you to accord me some of your valuable time to respond to the questionnaire as guided. The data collected is purely for academic use. A commitment is therefore made that the information given will be treated with utmost confidentiality.

Thanks in advance.

Yours faithfully,

Esther Gikama

APPENDIX TWO

QUESTIONNAIRE

This questionnaire seeks to establish the relationship between Donor Output Based Aid Financing and performance of water projects in Nyeri County. The data seeks to fulfil purely academic goals. Confidentiality of the participants will be protected and all ethical guidelines observed. The questionnaire is organized in to three sections. Section A covers the background information. Section B and C seek information regarding the constructs of the study.

Kindly provide the information required in each section by following the instructions given.

SECTION A: Respondents Profile

1) Gender of participant (Tick appropriately).

   Male ( )

   Female ( )

2) Age of the Respondents

   Less than 20 years ( ) 21-30 years ( )

   31-40 years ( ) 41-50 years ( )

   More than 40 years ( )

3) Highest level of education of the respondent: (Tick appropriately).

( ) Primary ( ) Secondary ( ) Certificate

( ) Diploma ( ) undergraduate Degree

( ) Post graduate ( ) others (specify) ……..

4) Indicate by ticking appropriately, the number of years you have worked in the institution.

   Less than 3 years ( ) 3-6 years ( )

   7-10 years ( ) More than 10 years ( )

5) What interventions has your company worked/is working on for the local community?

Water services development ( )

Sanitation services development ( )

6) How long have you been engaged in water projects in the institutions?

Less than 3 years ( ) 3-6 years ( )

7-10 years ( ) More than 10 years ( )

7) Does the organization seek your views before implementation of the project?

Yes ( ) No ( )

8) Does the organization involve the local community in the initiation and implementation of the project?

Yes ( ) No ( )

9) In undertaking the project, what was the source of funding for the project(s)?

Community contributions( )

Institutional Finances( )

Government funds( )

Donor funds( )

Commercial Loan( )

Others, please specify.....

10) How would you rate the influence of OBA financing structure on initiation of water projects?

Very High ( ) High ( )

Average ( ) Low ( ) Very Low ( )

11) In your honest opinion, how much has OBA financing enhanced achievement of water services development in your institution?

Very Much ( ) Much ( )

A bit ( )Little ( ) Very Little ( )

SECTION B: OBA Financing and Water Projects Performance

PART I: OBA Subsidy and Water Projects Performance

9) To what extent do you agree with the following statements regarding OBA subsidy effect on water project performance in Nyeri County?

SCALE: 1) Not at All 2) Little Extent 3) Moderate Extent

4) Great Extent 5) Very Great Extent

	OBA Subsidy	1	2	3	4	5
a.	OBA subsidies help the WSPs cover water projects works (trenching, piping, metering, taps) without relying on communities' charges					
b.	OBA subsidies are effectively targeted to ensure the WSP water projects achieve financial sustainability					
c.	OBA subsidies are sufficient in covering project implementation costs targeted (e.g. meter installation costs for all water users)					
d.	OBA subsidies create market distortion for future water revenues for the WSPs					
e.	OBA subsidy upfront costs coverage motivates the consumers to pay for water charges upon project implementation					
f.	OBA subsidy enhances water projects' completion and benefit to consumers					

PART II: OBA Commercial Loans and Water Projects Performance

10) Kindly indicate, in your opinion the extent to which you share with the following statements regarding OBA commercial loans and water projects performance in Nyeri County

SCALE: 1) Not at All 2) Little Extent 3) Moderate Extent

4) Great Extent 5) Very Great Extent

	OBA Commercial Loans Aspects	1	2	3	4	5
a.	Commercial loans costs hinder the financing of water projects in Nyeri County					
b.	OBA commercial loans enhance water projects initiation and completion					

c.	WSPs financial capacities/creditworthiness constrain the establishment and implementation of water projects by the institution					
d.	OBA commercial loan capping per beneficiary strains cost coverage of the entire project					
e.	WSPs financial reports on revenues received constraint donor payment to commercial banks for the water project					
f.	WSPs ability to raise required revenues for loan cover constrain the sustainability of water projects					

PART III: OBA Technical Support and Water Projects Performance

11). Indicate by ticking appropriately the extent to which you agree with following propositions regarding OBA technical support and water projects performance in Nyeri County.

SCALE: 1) Not at All 2) Little Extent 3) Moderate Extent

4) Great Extent 5) Very Great Extent

		1	2	3	4	5
a.	Water projects require technical support to ensure their sustainability					
b.	WSPs require technical support in the undertaking of water works for sustainable service delivery					
c.	Water projects for the institutions are large and innovative, the WSPs having low experience and requiring capacity building for sustainability of the projects					
d.	OBA technical support enhances efficiencies in implementation of water projects					
e.	OBA technical support ensures that benefits are enjoyed as projected in the project plan					

SECTION C: **Government and Donor Policies and water projects Performance**

12) Rate the following comments on government and donor policies and water projects performance in your organization

SCALE: 1) Strongly Disagree 2) Disagree 3) Not Sure

4) Agree 5) Strongly Agree

	Government and Donor Policies Aspects	1	2	3	4	5
a.	Donor policies guide the project process, giving donors control over the process					
b.	Donor expenditure protocols introduce caps, targets and other conditions that can affect effective implementation of water projects especially for poor communities					
c.	Donor funding procedures may delay funds disbursement and timely completion of projects					
d.	Government policies on funding may be influence by political factors, constraining donor relations and project undertaking.					
e.	Government policies on capital markets may affect commercial lending practices, affecting OBA financing for water projects					

Thank you for your support in filling in this Questionnaire