PUBLIC-PRIVATE PARTNERSHIP STRATEGY FOR WATER SERVICE DELIVERY, FOR SUSTAINABLE URBAN DEVELOPMENT; A CASE OF KAYOLE, SOWETO IN KENYA

BY

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DECLARATION

Declaration by Candidate

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DEDICATION

I dedicate this thesis to my family for the constant support they accorded me during the writing. I also dedicate this paper to my colleagues for their encouragement and input during the writing of this thesis.

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May God bless you all!

ABSTRACT

The role played by Public-Private Partnerships (PPPs) in infrastructure and service provision globally continues to take root. This is demonstrated by the numerous projects that have been initiated through Public-Private Partnerships in both developed and developing states. PPPs make a vital contribution towards narrowing the gap in infrastructure and service provision through effective management, funding, resource allocation and expertise. Despite this, developing countries such as Kenya are yet to bridge the gap in service delivery, especially water service delivery for its urban areas, which are characterized by high population growth and limited resources compared to the rural areas. The study aimed to examine PPPs as a strategy in water service delivery for urban areas in Kenya. The study employed the agency theory, public choice theory and game theory. The study focused on Kayole Soweto area and Maji Mashinani as its case study design. The study population was 135 households in the Kayole-Soweto area. The study also targeted 4 experts in the Maji Mashinani PPP project as well as PPP project consultant. Simple random sampling was used to select 100 household heads in Soweto Kayole area. Purposive sampling of all the 4 at Maji Mashinani PPP was conducted. The study applied a survey-sampling method and used questionnaires and interview guides as an instrument of data collection. The questionnaires and interview guides consisted of both open-ended and closed ended questions. A mixed methods approach was used, and data presented through tables, pie charts, bar graphs, and a histogram. The study revealed that implementation of public-private partnership strategy, viability of public-private partnership and challenges in the implementation of PPPs explain 48 percent of the variations in the dependent variable which is water service delivery. The study found that there is potential in PPPs as strategies in filling the water service delivery gap for urban areas in Kenya. However, this has not fully been achieved and has a long way to go. Regression analysis results shows that public-private partnership and water service delivery is positively and significantly related ($r=0.291$, $p<0.05$). The results further indicate that the viability of public-private partnerships and water service delivery is positively and significantly related ($r=0.262$, $p<0.05$). It was further established that challenges in the implementation of PPPs and water service delivery are negatively and significantly related ($r=-0.228$, $p<0.05$). Arising from the study, it can be concluded that the most favored model for PPPs in water service delivery for urban areas in Kenya is the Output-Based Aid because it is designed to be pro-poor populations such as Kayole-Soweto where the study was carried out. Some of the factors considered as criteria for projects suitable for PPPs to be engaged include the size of the budget, level of expertise required and risks and mitigation which should be shared based on the capability of the parties in the partnership. The study also concluded public-private partnership in the water sector enhances access to quality and adequate. The quality of water significantly improved as a result of the PPP water project; the cost for water per household significantly decreased resulting to enhanced water access by households. This study recommended that beneficiary orientation should be a priority in PPPs planning phase and therefore include not only landlords but also tenants; clear communication channels should be developed to enhance efficient and effective monitoring and evaluation. While the influence of PPPs seems to be widespread in bridging the gap in water service delivery, its presence in most urban areas remains elusive.

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OPERATIONAL DEFINITION OF TERMS

Commercial management principles: Non-technical business disciplines within a company or organization, particularly the administration of revenue and expenses to generate a financial return.

Financial Closure : The stage when all the conditions of a financing agreement are fulfilled before the initial availability of funds

Improved sanitation : Hygienic separation of human excreta from human contact

Improved water : Water protected from outside contamination, from contamination with fecal matter.

Public Finance : Money obtained from taxes and borrowing and is available for the government to spend.

Public-private partnership : A public-private partnership is an agreement between the government and one or more private partners in which the private partners deliver a service in such a way that the government's service delivery objectives are aligned with the private partners' profit objectives, and the effectiveness of the alignment is dependent on a sufficient risk transfer to the private

	partners. The public-private partnership in this study refers to the agreement between the public and private sectors to supply water services to the inhabitants of Kayole Soweto.
Public Service :	Service provided by a government to the people of its jurisdiction.
Sovereign borrowing :	Debt issued by a national government and is considered risk free because the government can put measures to ensure payment, at times through tax increase.
Sustainable urban development Strategy :	A designed policy or plan of action to achieve a major or overall aim
Water service delivery :	it refers to the access of adequate, safe and affordable water to the households

ABBREVIATIONS AND ACRONYMS

BOOT	Build Own Operate Transfer
BOT	Build Operate Transfer
DBF	Design, Build, Finance
DBF	Design, Build, Finance
DBFM	Design, Build, Finance and Maintain
DBO	Design, Build and Operate
DRC	Democratic Republic of Congo
EU	European Union
ICT	Information Communication Technology
OECD	Organization for Economic Cooperation and Development
PPP	Public-Private Partnership
SDG	Sustainable Development Goals
UNDESA	United Nations Department of Economic and Social Affairs
UN	United Nations
VFM	Value for Money
WABAG	Veolia Water, Berlin Wasser International
WB	World Bank
WINGOC	Windhoek Goreangab Operating Company

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter discusses the key issues that form the basis of the study. It consists of the background to the study, statement of the problem, study objectives, research questions, and justification of the study, significance of the study as well as the scope and limitation.

1.2 Background of the study

Water is essential for human life and health, as well as for economic activity and the preservation of the ecosystem. The UN Sustainable Development Goals (SDGs) (WHO, 2005) include improved access to safe drinking water and basic sanitation as a target. Water is a unique resource, an absolute prerequisite for life, an economic, environmental, social, cultural and spiritual good and may therefore not be treated as an ordinary commodity UNICEF report (2015). The Sustainable Development Goal number 6 seeks to enhance access to clean water and sanitation. In the urban areas, the water sector presents even more difficult economic and political choices for governments. The provision of safe and adequate water for residents remains a challenge to the government and local authorities.

Currently, more than 1.1 billion people worldwide lack access to safe drinking water and 2.4 billion do not have access to basic sanitation facilities (Qian, House, Wu & Wu, 2020). Globally, public service provision has been a prerogative of governments, which have monopolized service provision in sectors such as water (Roehrich, Lewis & George, 2014). The monopolistic nature of public service delivery has led to inefficiency, poor price-determining mechanisms, compromised quality and inadequate and irregular service provision (Leigland, 2018). Efficient and effective

provision of public services and goods is problematic in many societies and countries. According to Leigland (2018), the state lacks the capacity and resources to deliver public goods and services solely. Thus, the private sector is drawn upon through myriad means to supplement the provision of certain services and goods to the people. It is from this background that alternative avenues of public service delivery such as privatization and public-private partnerships (PPPs) are sought after to facilitate the development of public projects including water projects.

Public-Private Partnership is expanding rapidly as an alternative for the provision of public goods and services like water by local authorities in conjunction with the private sector to the people (Zhong, Mol & Fu, 2008). Public-private partnerships hold a lot of potential in enhancing provision of goods and services to the people, however, they also hold risks and possibilities for failures as noted by other scholars (Bakker, 2010; Mu, De Jong & Koppenjan, 2011). A robust and sustained Public-Private Partnership must satisfy the primary objectives of delivering public goods and services to the people while keeping the government-private relationship viable and sustainable for both parties.

In the 1990s, several governments began on ambitious reforms of their urban water supply and sanitation services, which frequently entailed transferring utility administration to private operators under various contractual arrangements (Raunio, 2016). With fresh skills, financial resources, and a more commercial orientation, public-private partnerships were expected to turn around underperforming public utilities. PPP projects in the water sector have been controversial, particularly after a series of highly publicized contract terminations in recent years raised doubts about the suitability of the approach for developing countries (Steijn, Klijn & Edelenbos, 2011). The lack of data on the populations served and on the quality of services

provided has made it difficult to assess the overall contribution of PPP projects in developing countries.

Some studies have viewed contracting of the provision of essential services like water as inherently fraught with conflicts, given the monopolistic nature of these services (Iossa & Saussier, 2018). Others, more realistic, question whether PPPs can operate well in the different conditions of developing nations, citing inadequate institutional capacities, poor governance, and deficiencies in the rule of law and contract enforcement as examples (Mu, De Jong & Koppenjan, 2011). Others argue that a few well-publicized failures show that PPPs are unsuited to the water sector in general, and to conditions in poor nations in particular. Others blame vested interests and political manipulation for the failures, pointing to a few successes as examples of how to make PPPs work (Wu, Schuyler House & Peri, 2016). Underlying most studies are gaps in data coverage and quality, reflecting the fact that performance data disclosed by water utilities are limited and rarely comparable among utilities and over time. The scarcity of published performance information contributes to an impression of secrecy and lack of accountability, whether for public utilities or private operators.

OECD countries also face significant financial challenges to replace ageing water infrastructure and comply with ever-stringent water regulations. According to Leigland (2018) to maintain existing services, France and the United Kingdom must boost water spending by 20% and Japan and Korea by over 40% by 2030. Many developing and growing countries have sought private sector involvement to address these enormous needs and build infrastructure in the face of tight budgetary restrictions, as well as to improve the efficiency of sometimes poor water systems (Qian, House, Wu & Wu, 2020). However, in Spain, an alternative to outright privatization for incorporating private enterprises in water operations has been

developing for more than a century (Iossa & Saussier, 2018). The concept was that of a partnership with shared responsibilities, in which local governments delegated the management of a water utility to a private operator while retaining the assets as public property. Various contractual forms evolved, with differing levels of responsibility and risk for the private partner, ranging from concessions to management contracts (Marin, 2009).

China accounts for the great bulk of water PPPs in East Asia and the Pacific. The first wave of water PPPs entered China, with investors enthusiastic. For example, multinational water corporations such as Suez (France) and RWE (Germany) were involved in 17 of China's 42 PPP projects between 1994 and 2001. China has developed as one of the world's most active marketplaces for public-private partnerships (PPPs) in the water sector since the 1990s, even though the number of PPP projects nearing financial closure has decreased since 2007. (Beh, 2010; Wu, Schuyler House & Peri, 2016). Between 2008 and 2018, China has 267 PPP water projects, accounting for approximately two-thirds of the total number of such projects worldwide (Qian, House, Wu & Wu, 2020). Between 2001 and 2012, China had 237 PPP water and sanitation projects, accounting for 40% of all such projects globally, while the Chinese population supplied by private water firms expanded from 8% in 1989 to 43% in 2018. (Wu, Schuyler House & Peri, 2016). While the implementation of PPPs has been imperfect, private sector participation has been far greater, thanks to four conditions: strong multilevel political will and support, a better-aligned legal and policy framework, solid organizational forms that link local business knowledge with international technological expertise, and tariff reforms (Qian, House, Wu & Wu, 2020). The Chinese water and sanitation sector was the paradigm of centrally planned economies until the end of the 1970s, when water and sanitation arrangements were

part of a comprehensive set of social welfare services provided by the government (Jensen, 1997).

Despite strong economic growth since 2005, India has failed to make proportionate strides in developing its water and sanitation sector: only 48% of the urban population in India has access to a piped water supply through house connections, compared to 58% in Pakistan, 67% in Sri Lanka, and 95% in China (Asian Development Bank (ADB), 2013). In India, almost all water supply provision has been managed by the public sector through municipal or state-level departments or parastatals (Kacker, *et al.*, 2014). Benchmarking initiatives show that coverage through piped water supply ranges between 55 percent and 89 percent in urban areas. Per capita availability is fairly high, at 90 to 120 liters per day, but no city yet offers continuous water supply (Jensen, 2017). Daily supply averages four hours, with many cities alternating supply every other day. Service efficiency is weak, which means utilities have a low-cost recovery, further exacerbated by low tariffs that have little relation to operating costs (Wu, Schuyler House & Peri, 2016). Only about 20 percent of connections are metered, and nonrevenue water—water for which no revenues are collected averages over 40 percent in most cities (Jensen, 2017). These issues arise in the context of ineffective management systems and little data on existing assets, making it difficult to determine investment requirements and timetables in order to increase service levels and operational efficiencies (Jensen, 2017). While significant investment is expected, it is recognized that investments alone will not be effective unless the country simultaneously addresses related issues such as complex and fragmented institutions with little accountability; a lack of capacity to run utilities efficiently and meet performance standards; a lack of commercial orientation; external interference in

utility operations; and the absence of a regulatory framework focused on custodial services.

Following economic liberalization in the early 1990s, some cities attempted public-private partnerships (PPPs) in water supply operations against this backdrop. Many of the early initiatives were on bulk water augmentation, with the prospect of substantial private investment (Nokulunga, Didi & Clinton, 2018). Most of them failed due to a lack of enabling frameworks for private investment, insufficient project preparation, project proponents' financial weakness, and opposition to private sector participation. The urban poor bear a disproportionate share of the expense of inadequate water and sanitation services: low-income households without access to public networks pay a substantially higher price for water, risk poor health, and incur significant copying costs (Van Dijk, 2008). Despite higher demand for water resources, development of public-private partnerships (PPPs) for water and sanitation has been limited and considerably slower than in other sectors such as transport and energy (Kacker, Osborne Miller & Ramanujam, 2014). According to the World Bank's Public-Private Infrastructure (PPI) Database, only 13 PPP projects in the water and sanitation sector existed in India between 1990 and 2012 – less than 2% of the total PPP projects in India (Wu, *et al.,* 2016). The share of water and sanitation in terms of investments was even smaller, at 0.2% of total investments of PPPs in India.

In Africa, lack of clean water, sanitation & hygiene costs Sub-Saharan African countries more in lost GDP than the entire continent gets in development aid. Depending on the country & region, economic benefits have been estimated to range from US$ 3 to US$ 34 for each dollar invested in clean water and sanitation (Chima & Kasim, 2018). The 25 countries globally with the least access to safe water (19 of them African) dominate the top 50 countries with the highest child mortality. Between

23% & 59% of children in these countries suffer stunted growth; & between 43% & 91% of their populations have no access to improved sanitation. Between 18% & 68% of their populations live below the poverty line (WHO, 2016). To address issues related to water provision to their people many of African countries have been considering implementing the public-private partnerships to enhance access to water for their people. World Bank (2014) observes that some countries such as Algeria, Mozambique, Senegal, South Africa, Egypt and Ghana have successfully recorded public-private partnerships in the water sector. Whereas there was increased access to water under PPP in Congo Brazzaville and related positive results in Uganda, in Zambia, privatization resulted into reduced access and increased cost of water and the utilities had to be returned to public management (Obosi, 2017).

In Rwanda, approximately 29% of the population does not have access to the improved water source while 25% do not have access to improved sanitation facilities. Rwanda has a long history of private operators in the rural water sector with the first PPPs established in 2004 (Karamage, et al, 2016). According to Government figures data, up to 73% of the rural water sector in Rwanda is under PPPs. In both Rwanda and Burundi the government made a policy decision to decentralize water service delivery and encourage the private operation of RWS throughout the country (UNICEF report, 2015). A World Bank-commissioned field evaluation in 2004 concluded that half of Rwanda's piped rural water supply systems were non-functional due to inadequate management and cost recovery (Malik et al., 2017). The government changed to a public-private partnership (PPP) management model in response. PPPs handle 235 rural water delivery systems, or 28 percent of the country's 847 systems, servicing 1 million people as of 2010.

In Ghana, urban water coverage was 63 per cent and rural water coverage 64 per cent in 2015. Ghana has several on-going projects to provide more water services for its citizens (Mohammed and Saidi, 2018). Ghana has been struggling to extend adequate water supply to her citizens including those in the urban centers (Chan & Ameyaw, 2013). Water rationing and low-quality storage systems are common in Ghanaian urban centres leaving many of the population without adequate potable water (Ameyaw & Chan, 2015). The challenge in the provision of adequate water for the citizens led to the call for public-private partnerships to facilitate the development of the water sector with a view of reducing non-revenue water, improving the quality, quantity and flow of water, reducing customer response times, customer accounts receivable and collection, interruptions and emergency response reducing power consumption and chemical usage (Abubakari, Buabeng & Ahenkan, 2013).

In Kenya, the Water Act of 2002 provided room for private operators and delegating responsibility for oversight to the Water Service Boards at regional level (UNICEF report, 2015). Under the strategy developed under the 2002 Water Act, the Water Service Boards (WSBs) are required to develop community water committees into Water Users Associations (WUAs) which are legally registered associations. These can then apply for a Service Provider License under a Service Provider Agreement. The Water Users Associations may then continue to manage and operate the water supply on behalf of the community or subcontract to a Private Operator (Okeyo, 2013). Between 2002 and 2015 several different models of urban water management emerged, some of which involve private operators and innovative financing mechanisms, but the vast majority of urban water management in the country is still under community-based management with little or no support or supervision from Government. Although the national regular (WASREP) is active in regulating urban

utilities, the engagement of government in supervising or regulating urban water service provision has been limited before the devolution and emergence of strong county government.

Many private operators for urban water management are emerging in urban centres but it is debatable as to whether these can really be considered as public-private partnerships as the public sector's role appears hazy (Obosi, 2017). In Kenya, the public-private partnership is quickly becoming the preferred public service delivery model for water services. Following water sector changes outlined in the Water Act of 2002, Kenya implemented PPP in water service providing as a strategy (Obosi, 2017). In Kenya, one of the sectors that has undergone sectoral transformation to accommodate Public-Private Partnership in the provision of water and sanitation services is the water service. Since 2003, Kenya's government has been warming up to large-scale private sector participation in this area (UNICEF report, 2015). The formation Water Service Boards (WSB), which in turn invited agents, known as Water Service Providers (WSPs) to provide water services with licenses from Water Services Regulatory Board (Farah, 2015). The Water Service Providers included former water departments of each local authority registered as public limited companies, Community Water Cycles, Independent Water Service Providers and the National Water Conservation & Pipeline Corporation. However, it is not empirically clearly how public-private partnerships have influenced water service delivery in Kenya.

1.3 Statement of the Problem

One goal of the United Nations sustainable goals is the access of safe water and sanitation. However, access to safe water in most societies remains a problem to residents, private organizations and governments. Access to adequate and safe water

is a major prevalent problem in Slum areas (Obosi, 2017). Most of the population in Kayole Soweto (87 percent) lack access to adequate and safe water. Poorly operated utilities, artificially cheap tariffs, and limited fiscal resources coexisted with deteriorating infrastructure, rapid urban expansion, and enormous investment demands (UNICEF report, 2015). Attempts to strengthen publicly operated utilities had mostly failed to solve the sector's rising problems. The result is a reduction in the number of persons who may be exposed to water-related health concerns (UNICEF report, 2015). Interruption of water supply, frequent water shortages are common in Kayole Soweto. Residents do not have a constant flow of water with some neighborhoods getting water once a month.

Provision of water services is a challenge for many governments and local authorities mainly because of the substantial financial resource, expertise and equipment required to develop and maintain the physical infrastructure (UNICEF report, 2015). The problems associated with the provision of public adequate public goods and services have led to the realization that the public alone cannot adequately provide public services (Obosi, 2017). The provision of water services and the establishment of water projects is an extensive exercise that requires the support of the government, private organizations and the public. Immense financial and technical resources are required in supporting water projects thus calling for the partnership of public and private sector to jointly work together in delivery water services to people (Okeyo, 2013). A Public-Private Partnership (PPP) arrangement refers to cooperation between the public and private sectors in providing public goods. To increase the quality and efficiency of public service delivery, private-sector operating principles are blended into government administration.

Despite calls for public-private partnerships in the delivery of public goods, experts disagree over the PPP contract's practicality in improving the delivery of public goods and services. Some academics believe that public-private partnerships are ineffective in delivering public goods and services (Mu, deJong & Koppenjan, 2011; Bakker, 2010) while other scholars argue that PPP is a solution in the provision of public goods and services (Abubakari, Buabeng & Ahenkan, 2013; Obosi, 2017). Despite their cheered reputation, public-private partnerships (PPP) for water services, including the treatment and distribution of drinking water and the collection, treatment and disposal of wastewater, have been adopted in countries at all income levels and in a wide range of institutional and geographical settings. Moreover, the performance of public-private partnership across sectors varies with sectors like education services responding fairly well while other sectors like infrastructure do not perform well under the public private partnership. It is against this backdrop that this study investigated the role of public-private partnerships strategy in water service delivery, for urban areas in Kenya.

1.4 Study Objectives

i. To examine the process of implementing PPPs in water service delivery for urban areas Kayole, Soweto in Kenya.
ii. To analyze the viability of PPPs in water service delivery for urban areas Kayole, Soweto in Kenya.
iii. To identify the challenges in the implementation of PPPs in water service delivery for urban areas Kayole, Soweto in Kenya.

1.5 Research Questions

i. What does PPP implementation entail in water service delivery for urban areas Kayole, Soweto in Kenya?
ii. How viable are PPPs in water service delivery for urban areas Kayole, Soweto in Kenya?
iii. What are the challenges in the implementation of PPPs in water service delivery for urban areas Kayole, Soweto in Kenya?

1.6 Justification of the Study

The sustainable development goals recognize that water is a scarce yet vital commodity for the survival of the populace. Governments as primary actors in water service delivery both at national and County levels have failed to efficiently and adequately meet water needs of the populace, and this has been evident in the current water rationing, especially in Nairobi from January 2017 due to the reducing levels of water and increase in population. However, partnering with private entities has proven beneficial in public service delivery, especially in sensitive sectors where the government has failed.

The literature on PPPs has helped understand PPPs as a strategy in public service delivery. However, in Kenya existing literature on PPPs on the same remains general or focused on sectors such as infrastructure and energy (World Bank, 2017; Atieno, 2014; Kedenda, 2010; Muzenda, 2009; Ong'olo, 2006). Limited studies have explored PPPs in water service delivery, and a review of the existing literature (Obosi, 2017) shows focus on locations other than Athi water Service Board Area which has the largest population in all the eight water service boards. Further to this, the studies were conducted before the development of the functional Water Act of 2016 and the

PPP Act of 2016. However, a study by Obosi (2017) on the impact of Public-Private Partnership on Water Service Delivery in Kenya only focused at the water service providers contrasting this study that looks at the actual beneficiary of public-private partnership water projects (households).

There is, therefore, need for examining PPPs as an alternative strategy to ensure efficient, adequate and quality water provision to cater for the diverse use of water for the citizens. It is against this background that the current study seeks to look into PPPs in water service delivery.

1.7 Significance of the Study

This study contributes to the literature on matters of PPPs in the water sector. The research benefits the academicians through contributing to the existing knowledge in the development field and inspires further research on related subjects, hence meaningful growth in academia.

On a policy aspect, the study informs policymakers both at the national and county levels on policies regulating and governing PPPs as they remain scarce in the water sector. Further to this, it will help policymakers identify the unexploited areas and the challenges that PPPs face.

Further to this, the study enlightens private sector in contributing towards sustainable development, especially in water and sanitation-related issues as it points out not only the different models of PPP but also the contribution of these partnerships towards the greater good.

Using the Kayole Soweto Area as the geographical site, the study seeks to aptly examine whether PPPs are effective and efficient strategies in enhancing the delivery

of quality, sustainable affordable and adequate water services for urban areas in Kenya.

1.8 Scope and Limitation

This study focused on the Maji Mashinani Project, a public-private partnership (PPP) implemented in Kayole Soweto Village, Embakasi Central Constituency, Nairobi Province. The analysis covered the period from 1999, when PPPs were introduced in the water sector, to 2016, utilizing both secondary data published during that timeframe and primary data collected directly from project beneficiaries and water service delivery experts. The Maji Mashinani Project is a collaboration between the World Bank and the Government of Kenya, with Nairobi City Water and Sewerage Company acting as the government's agent.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

The chapter presents a synthesis of relevant literature appertaining to the study. Key areas discussed include- articulation of the concept of PPPs globally, PPPs in Africa and the globe, Public-Private Partnerships in Kenya, Viability of PPPs in water service delivery, the process of PPPs implementation, challenges faced in the implementation of PPPs in water service delivery in Kenya, the theory of PPPs and the conceptual framework.

2.2 Concept of Public-Private Partnerships Strategy

Public-Private Partnership as a strategy of public service management reform was acknowledged in the 1990s as crucial to sustainable development initiatives especially in the developing countries (Van Dijk, 2008). A Public-Private Partnership (PPP) is a system in which the public and private sectors collaborate to provide public goods (Ameyaw & Chan, 2016). To increase the quality and efficiency of public service delivery, private enterprise principles are collaborating with public administration (Tochitskaya, 2007). According to the OECD (2008), a public-private partnership is an agreement between the government and one or more private partners (which may include operators and financiers) in which the private partners deliver the service in such a way that the government's service delivery objectives are aligned with the private partners' profit objectives, and where the effectiveness of the alignment is dependent on a sufficient transfer of risk to the private partners.

Through PPP the government enters a long-term contract with a private partner to deliver a good or service. The private partner is responsible for building, operating

and maintaining assets that are necessary for delivering the good or service (Valipour, et al., 2019). An emerging consensus is that the state was overextended, inefficient and needed to roll back from economic ventures to concentrate on activities it could do best, essentially, provision of enabling environment for the provision of public goods by either the private sector or a combination of both (Qian, House, Wu & Wu, 2020). At the same time, the government recognized the need to link the social and economic goals set in light of the fact that the private sector has a competitive advantage in the supply of some services that, when put to good use, would help accomplish these objectives (Hulme, 1992). As a result, partnerships have been recognized as an efficient way to implement governmental programs and establish socially inclusive societies (Osborne, 2000).

Public-Private Partnerships are seen to improve efficiency, effectiveness, and value for money in the public sector, which had been experiencing development failures and disappointments as a result of not only ineffective policy choices, but also bureaucratic red tape that caused state institutions to perform poorly (Beh, 2010). The expansion of the public sector consequently ceased to be the automatic policy preference in most developing countries. A developing agreement was that the state was overextended and inefficient, and that it needed to be dialed back from primarily economic undertakings to focus on the core commercial operations it could do best, namely the provision of public goods (Mohammed & Saidi, 2018). At the same time, the government recognized the need to link the social and economic goals set because the private sector has a competitive advantage in the supply of some services that, when put to good use, would help accomplish these objectives (Obosi, 2015). Partnerships were seen as a successful technique of executing governmental policies and establishing socially inclusive societies, according to Van Dijk (2008).

Governments were forced to explore for alternate channels for service supply as a result of pressure to maintain particular standards of public service and financial limits placed on public service delivery, resulting in Public-Private Partnerships.

The pressure to maintain certain levels of public service, as well as financial constraints on public service delivery, forced governments to seek alternative service delivery mechanisms. As a result, the Public-Private Partnerships allows the private sector, not-for-profit organizations, and community organizations to play roles not only in common practice, but also to have an authoritative voice in public policymaking. This isn't to say that public-private partnerships have always been successful in enhancing water service delivery (Obosi, 2015). Water supply collaboration between the public and commercial sectors has yielded mixed results, with more benefits than negatives (Prasad, 2006). PPPs have been widely used to improve the adoption of new and effective technology, knowledge, greater operating efficiency, shared risks, and access to financing while avoiding the politics of full privatization and addressing consumer needs (Abedin, 2010). A PPP discussion approach aids in effective water governance, the building of institutional capacity in developing countries, and the inclusion of various stakeholders, particularly private sector participants, in the achievement of development goals (Obosi, 2017). The discourse may also aid in improving mutual understanding by identifying critical areas for action and emphasizing the necessity of efficient water service delivery.

A major component of the new reforms was a heavy reliance on the private sector. Public-private partnerships (PPPs) for water utilities appeared to be an appealing choice for governments with insufficient fiscal resources to cover public utility financial losses and invest in infrastructure restoration and expansion (Obosi, 2017). Private operators were expected to deliver better services to a bigger number of

clients because of their knowledge and financial resources.Some observers have viewed contracting of the provision of such essential services as inherently fraught with conflicts, given the monopolistic nature of these services (UNICEF report, 2015). Others, more realistic, question whether PPPs can operate well in the different conditions of developing nations, citing inadequate institutional capacities, poor governance, and deficiencies in the rule of law and contract enforcement as examples (Migan, 2015). Others refer to a few high-profile failures as proof that PPPs are unsuited to the WSS sector and conditions in developing nations. Others blame vested interests and political manipulation for the failures, pointing to specific achievements as examples of how to make PPPs work. Underlying most studies are gaps in data coverage and quality, reflecting the fact that performance data disclosed by water utilities are limited and rarely comparable among utilities and over time.

2.2.1 Public-Private Partnerships in the Globe and Africa

Unlike in the ’90s, when the main attraction for PPPs was finance, there has been more to PPPs’ contribution, which includes operational efficiency and effective service delivery. These contributions have an indirect impact on access to financing (Kajimo-Shakantu, et al., 2014). This is because the consumers are more willing to pay their bills on receiving quality services. As creditworthiness improves, there is better access to funds from either or both private and public sources, which ensures the expansion of services (Mfunwa, Taylor & Kreiter, 2016). The PPPs that have been successful thus far in improving performance have observed commercial management principles, emphasized the financial viability of the service, accountability and customer service, while avoiding complacency.

Jensen (2017) observes that there has been an increase in the number of projects signed per year between 1994 and 2013. China and Asia recorded over four hundred PPP projects; Latin America and the Caribbean recorded over two hundred and fifty PPP projects; and Middle East, North Africa and sub-Sahara Africa recorded less than thirty projects in the same period (Qian, *et al.,* 2020). The data indicate that some regions have a less PPP project count than others with sub-Sahara Africa and North Africa having the least values.

Across the African continent, two-thirds of the population access 'improved water' and over 40% access 'improved sanitation' (Sutcliffe & Bannister,2014). They argue that these figures are not a true sense of the situation as they do not represent levels of health and convenience as well as the disparity between rural and urban dwellers. However, North African countries seem to have improved rural and urban disparities (Raunio, 2016). Water supply remains irregular, and waiting points are long resulting in inadequate supplies to water needs. Urban areas suffer from a lack of provision of sanitation with an increasing backlog in water provision and an increase in the gap between supply and demand for water.

Urban areas have outgrown the natural water supply, and water must be brought from miles away in places like Dakar- Senegal where water is brought in from 70 km away and in Mombasa where it is brought from 220 km away. In Abuja–Nigeria, many houses remain disconnected from the water network as pressure is low (Chima & Kasim, 2018). In Kigali-Rwanda water supply covers 69% of the needs if rationing takes place. Sutcliffe and Bannister (2014) note that the situation is made worse due to the lack of finances as the poor pay higher rates per unit for water as most cannot afford costs of pipe water. Sutcliffe and Bannister (2014) further noted that the

provision for improved water and sanitation in urban areas shows that Algeria, Seychelles and Tunisia are very high compared to countries like Madagascar, Chad, Kenya, and Equatorial Guinea among others. This situation, according to Sutcliffe and Bannister, can be changed with the adoption of other management and financing model.

World Bank Group (2014) indicates that Algeria mostly depends on BOTs in the process of finding an efficient mechanism compared to the traditional construction model (Obosi, 2017). The motivation for this type of PPP has not been for purposes of accessing private finance but gaining efficiency. Through PPPs, the country has been able to establish viable public utility currently under second-generation contracts (Karamage, et al, 2016). The country recorded the highest number of PPPs (13) that reached financial closure with most being BOT contracts for desalination (9) which had an output of 2.26 million cubic meters of water per day produced between the year 2005 and 2011. Pinera (2006) studied partnerships between water sector institutions and aid agencies in armed conflict marred countries such as Liberia and DRC. He notes that the expansion of urban areas has presented a complex dilemma for public service providers who are in a crisis to manage the situation through partnering with aid agencies.

Further to this, he argues that private enterprises are involved in water and sanitation as most conflict-stricken country governments lack the resources to respond to emergencies caused by armed conflicts (Malik et al., 2017). The rehabilitation and reconstruction of projects must involve private institutions that provide relatively small capital (Chan & Ameyaw, 2013). However, the private sector is a stakeholder and its participation in distributing piped water can be entrenched in the community

through policy-driven arrangements inform of public-private cooperation (Ameyaw & Chan, 2015). Urban water supply in conflict-stricken countries that takes place through distribution systems and are managed by private sector stakeholders needs less encouragement from the government.

Provision of specific services, for instance, reading meters by private companies taking place under contract leads to improved efficiency in service delivery. However, the private sector tends to "cherry-pick" were to contribute towards public service delivery (Abubakari, et al., 2013). It is due to this that private companies supplying public utilities have not been successful, especially in low-income countries of Africa. UNICEF report (2015) established out that partnerships between local institutions and aid organizations contributed to efficiency. Further to this, the lack of local institutional support did not have a detrimental effect on service delivery by the aid agencies alone. According to Obosi, (2015) the type of partnership depended on the infrastructure work, institutional development and community participation.

PPPs for water and sanitation have been adopted widely in states with different income. Some countries have adopted PPPs earlier than others; Asia's water PPP was signed more than half a century ago, at a time when adoption of PPPs was not popular Marin, 2009 (UNICEF report, 2015). In that decade, countries like Malaysia embraced water PPPs as part of a policy to stimulate investment in their infrastructure (Wu, et al., 2016). In China, PPPs in the water sector blossomed after 2002 through distinctive contract models and became the largest water PPP market in the mid-2000s globally.

Water and Sanitation Program (2014) reports that the Philippines has made big steps in water supply provision. The report acknowledges PPPs as the potential solution towards accelerating access to clean piped water services, especially for the poor areas (Jensen, 2017). The programme report acknowledges that private sector capital for water system improvements and expansion is the most efficient way compared to public funding (Marin, 2009). The private sector input brings in reliability due to the incentives that come with trying to balance consumer willingness to pay and supply. This enables suitable cash flow and facilitates increasing of service coverage. According to the report, Manila water concessions were a remarkable narrative in water service provision and sanitation (Zen, 2019). The PPPs were able to achieve great heights as they doubled water connections. The PPP experience in the Philippines shows that several factors affect PPPs with information, guidance, and regulatory advice from government agencies being the most salient.

2.2.2 Public-Private Partnerships in Kenya

PPPs are instrumental to Kenya for a variety of reasons including an increase in delivery of quality and affordable services from citizens; economic growth and stimulation of job creation; maximizing utility of resources; nurturing private sector efficiency in the management and delivery of public services; enhancing the local long term funding market; reduction the government's rate of borrowing and associated risks; provision of a new source of investment capital for required infrastructure projects and to reduce the funding gap for infrastructure projects of $ 37 billion (Koimett, 2013). World Bank (2017) reports that Kenya has in recent years made progress in PPPs, especially under the guidance of Law 15 of 2013 on PPPs and PPP Regulations published in December 2014 (Farah, 2015). These two shapes private investment on matters of public projects no matter the institutions or agencies

contracting the service and asset. The elaborate legislative framework has been fundamental to the country's PPP projects and the Private Sector Development Strategy.

The first regulations governing concession projects were passed in 2009 but before these projects were granted on the grounds of general law and subsequently on the grounds of law governing public procurement (Obosi, 2017). World Bank (2017) also reports that in 2013, the PPP Act was put in place and three bodies with significant roles include the PPP Office, PPP Committee and the "Nodes". An approval role is played by the Cabinet and County governments (UNICEF report, 2015). The PPP office is based in the National Treasury with its functions ranging from the national centre for PPP expertise, project preparation and planning and provision of technical support in PPP implementation.

The "PPP Node" which is headed by the accounting officer of the relevant contracting authority facilitates in the process of identifying and screening PPPs, appraising project agreements to certify viability, it ensures parties comply with PPP Act, and lastly, carries out the tender and monitoring processes (Obosi, 2015). Based on the public-private partnership Act, all projects are to be acquired through a competitive process, which is based on equality and guided by the principles of transparency, fair and free competition (UNICEF report, 2015). A public entity through a grant or concession may enter into a contract with a qualified private party for financing, operation, maintenance or construction of infrastructure or development facility of the government (Okeyo, 2013). State department as well public institutions such as local authorities, county governments and state corporate that expresses intent to use the

PPP mechanism in planning and implementation programs are covered in the PPP framework PPP policy (2011).

Through the PPP policy framework, major public entities are assigned roles and responsibilities in the preparation and implementation of PPP projects during their life cycle (Okeyo, 2013). Some of the major stages include project identification, selection and prioritization based on whether the revenues paid by the consumers will be sufficient to make the project financially sustainable (UNICEF report, 2015). Project preparation and appraisal with a keen interest in ensuring that stakeholders' interests are considered; Project tendering with emphasis on maximum information being provided to potential bidders Farah (2015), not excluding level of government extended to the undertaking; Project negotiation and project monitoring and evaluation to ensure that transfer of asset at the expiration of the project agreement is consistent with the terms and conditions in the project.

2.3 Water Service Delivery

Water service delivery is fundamental in many ways, and households cannot function or survive without it. Most urban areas households have limited access to municipal water, find the cost of access to be expensive or encounter landlords who are reluctant in investing in efficient and effective infrastructure in this regard (Raunio, 2016). Sustainable access to safe water measures the health status and the well-being of people in a given society. Hence, reliable water delivery services are central to the improvement of public welfare (Angoua, *et al.,* 2018). Unfortunately, public utilities that provide water supply services have been inefficient, lacking the capacity to deliver required service levels, and unable to respond to rising water demand due to a lack of competition due to the monopolistic nature of public water utilities, a lack of

efficient pricing mechanisms to reflect the cost of services, limited government financing and investment, and poor management practices (Chan & Ameyaw, 2013).

According to Chan and Ameyaw (2013), water service delivery involves four critical dimensions of performance: access (coverage expansion), quality of service, operational efficiency, and tariff levels/ cost-sharing. Moreover, Obosi (2015) also noted that efficient water service delivery entails water quality, metering, Hours of supply, Water coverage, Average downtime. The analysis of the impact of Public-Private Partnerships on access to adequate and safe water focuses on concessions (where most of the investment is funded by the private partner) and leases-afterimages (where it is mostly funded by the public partner). Accessibility of water services refers to increased coverage of safe and adequate water, thereby reducing the distance covered by consumers to collect water.

Often water PPPs have substantially improved service quality, especially by reducing water rationing. Rationing is possibly the number one quality challenge for many water utilities in the developing world. Without service continuity, meeting drinking water standards cannot be guaranteed because of the risk of infiltration in pipes (Angoua, et al., 2018). The poor are disproportionately affected since they generally reside at the low-pressure ends of distribution networks and cannot afford coping equipment (such as private wells, roof tanks, and filters). It is extremely difficult to reverse water rationing once it has established common practice in a utility (Wu, et al., 2016). Frequent pressure surges hasten network deterioration, and any attempt to raise average service pressure leads to additional burst pipes and water loss.

Water quality has two indicators; objective based on scientific data, and subjective based on the user's perception of water based on its drinkability, the physical features including colour and turbidity (Obosi, 2017). Globally, water quality is of serious concern apart from accessibility. Water could be accessed from various sources including natural sources, but the quality remains of concern. It is expected that privatization is to improve the quality of water supply if accompanied with regulations relating to quality standards such as safety, pressure, service levels, equipment, technologies, and procedures (Raunio, 2016). Although poor quality water is usually associated with poor access to water, this does not happen all the time. Some people are not faced with water accessibility problems but poor-quality water and low coverage of connected piped water.

Operational efficiency a key objective for incorporating private operators is to improve operating efficiency. Although utility operation has multiple facets, in practice, the overall efficiency of an operator can be broadly captured by three main indicators: water losses, bill collection, and labor productivity (Nwokorie, 2018). Further, controlling water losses is a priority for any well-run water utility. Private operators were effective in reducing water losses (Nwokorie, 2018). Non-revenue water was decreased to less than 15% in some situations, a percentage comparable to that of some of the best-performing utilities in wealthy countries (Mohammed & Saidi, 2018). However, not all PPP projects result in large reductions in water losses, with non-revenue water levels in some countries being extremely high (more than 50%).

The affordability of water includes considerations for connection costs and monthly charges or tariffs. Opponents of privatization argue that the water costs will increase

as a result of privatization. However, it is argued by Wu, Schuyler House and Peri (2016) that the urban poor are not necessarily going to be losers because of privatization and that price increases shall be outweighed by increase in access and service can also be muted by regulations and subsidies aimed specifically to cater for the poor. The unaffordability rate of water tariff measured by the ratio of household monthly expenditure to household income has been increasing in urban areas (Nwokorie, 2018). Most households in peri-urban areas due to the informal nature of most of the settlements depend on boreholes, communal or public taps built by commercial utilities, NGOs, and donors (Dagdeviren, 2008). The management of the schemes for the water service provision in the informal settlements takes various forms that include solely by the community; some are managed by communities in co-operation with public utilities, while others are managed by vendors.

Most poorly performing public utilities in developing countries have water tariffs that are well below cost-recovery levels and raising them is often a necessary component of reform toward financial sustainability (Migan, 2015). In practice, the potential impact of a PPP on the tariff depends on how far the initial tariff level is from the cost-recovery level and on the extent of efficiency gains that can be made by the private operator two factors that move in opposite directions and can be of very large magnitude in developing countries (Jensen, 2017). The evolution of tariff levels in several PPP projects was analyzed as part of the present study. In most cases, tariffs rose over time, but the underlying reasons, as well as whether those increases were justified, could not be assessed (Ameyaw & Chan, 2016). Analyzing the impact of PPPs on tariffs can be easily misleading because it is heavily dependent on prevailing tariff policies. Tariff increases are not necessarily a bad thing for customers when they also translate into wider access to better services, as happened under many PPPs.

In many developing countries, low water tariffs mostly benefit the connected middle class and work against the interests of the unconnected urban poor who need to access water from often unsafe and/or more expensive sources (Ameyaw & Chan, 2015). Likely, many of the poor households that gained access to piped water under PPP projects ended up paying a lower price for water than when they were not connected to the network. It must also be noted that in a few recorded cases, private operators made large enough efficiency gains to allow for significant tariff reductions in real terms after a few years (Angoua, *et al.*, 2018). The evidence from the literature on the impact of PPPs on tariffs is also largely inconclusive. Local considerations, such as raw water supply, have a significant impact on costs, and comparing tariff levels between private and public utilities can be misleading due to differences in the legal, administrative, and financial frameworks in which they operate. Gassner, Popov, and Pushak (2008a) used a large sample size to account for a variety of external influences. There was no statistically significant difference in water rates between comparable public and private utilities, according to the study.

2.4 Viability of PPPs in water service delivery

PPPs have been increasingly considered as relevant tools to curb public development problems, especially in cases where unilateral approaches have not succeeded or are likely to have inadequate results. Therefore, the Partnership serves to fill the gap created by the insufficiency to achieve the set goals. McQuaid (2000) PPPs tap into private resources of financing and expertise to bring out large infrastructure improvements. Through proper management, they offer much-needed new sources of capital as well as relevant discipline to project selection, operation, construction and management (Airoldi, Chua, Gerbert, Justus & Rilo, 2013).

The public sector can profit from public-private partnerships in a variety of ways. They can provide cost-effective solutions where the PPP can achieve lower prices, improved levels of service through innovation, and lower risk for the public sector (Bovis, 2010). Furthermore, by combining design, building, operation, and maintenance into a single contract, the public owner can avoid the costs of hiring and supervising many contractors for each phase of the project. According to UNICEF report (2015), one of the most significant attributes of PPPs is the increased certainty of outcomes both in terms of on-time delivery of projects and within - budget. Shorter construction period is guaranteed since, PPP project utilizes private funding, hence, construction delays is eliminated and bundling the design and construction process into a single contract will help shorten the duration of the project.

Also, PPPs distribute the risks between the public and private sectors depending on the strength of each entity to handle certain risks and on the expectation that the private sector will assume substantial risks in its long -term engagement in delivering infrastructure and public services (Bovis 2010). Risk assessment in PPPs is a different exercise than the assessment of risk in traditional public contracts mainly because risks are shared in PPPs and the public entity can be able to focus on other things other than the infrastructural service delivery (Frone & Frone, 2018). The involvement of the private sector in the design and construction process results in a higher quality project (Bovis, 2010).

Efficient pricing has been identified as the key benefit to the PPP model as the private sector would be more likely to use efficient pricing concepts such as congestion pricing (Hall, 2015). When there is a budget limitation, a refusal to raise taxes, or an inability to sell government bonds, public-private partnerships play a critical role in

project delivery. A private company can also employ private finance to build the project (Nichols, 2014). According to Nokulunga, Didi, and Clinton (2018), government debt is growing. Private project financing allows the public owner to get a completed project at the end of the contract without adding to the public debt, and it has little impact on the public owner's bond ratings). Moreover, PPP projects are privately financed and they provide budget certainty or security. Furthermore, this reduces capital spending for the public or government as payment are often deferred until the project is complete and goes into operation (Hall, 2015). Better performing assets PPP projects would guarantee a completed working structure or facility to generate good revenue so that the contractor can generate revenue to pay the debt owed to them (Alfen et al., 2009).

In the conventional strategy of design bid build process the contractor will bid low to win the project and then pursue numerous changes and claims. While under the PPP strategy this is eliminated totally (Ntshangase, 2002). The private entity gives public entity access to the technical experience and evidence of the private sector throughout the entire project (Frone & Frone, 2018). Moreover, more innovation is highly possible on PPP project since they are based on output specifications which maximize the use of private-sector skills when the public sector lacks in house expertise (Bekka, 2012; Babatunde & Opawule, 2012).

2.5 Process of PPP implementation

Effective PPPs take time to establish and then yield results. A friendly and supportive legal and regulatory framework is a fundamental prerequisite for PPP to be successfully established and implemented (Tsitsifli & Kanakoudis, 2008). There will almost certainly be disagreements, and service delivery will be delayed or degraded.

A functioning legal and regulatory framework decreases opportunistic inclinations (Kuttner 1997), aligns partners' interests, and gives private partners trust by acting as a buffer against political meddling from government agencies (Frone & Frone, 2018). The other critical issues include goal compatibility – reflected by an appreciation that both the public and private sector share a common goal of reducing risk and increasing certainty (Henderson, 2004); capacity of the partners to execute their roles (Rondinelli, 2004); the credibility and transparency of the procurement process; and greater education and sensitization of the stakeholders.

The implementation of PPPs involves identifying candidate projects and managing the project. A good PPP for this matter will be a project that is cost-benefit justified with a value for money and fiscally responsible (Fombad, 2013). According to the report, successful PPP programs go through constant and rigorous screening during its development stages. The preparation stage is broken into intensive and expensive phases that guarantee continues achievement of the set criteria (Abubakari, Buabeng & Ahenkan, 2013). The process involves identifying priority projects and screening them for the potentiality of being a PPP; developing and appraising successful projects; preparing draft PPP contracts; and managing the PPP transactions (marketing, checking bidders, evaluating proposals, and identifying and finalizing contract). However, the report notes that every PPP has different vagaries and different countries and projects experienced different dynamics (World Bank, 2014).

An efficient and effective policy framework, which consists of a legal and institutional framework, is an attractive factor for the private partners in a PPP arrangement (Qian, *et al.,* 2020). These authors are also of the thought that a clear policy framework is instrumental in ensuring that all the involved parties have a good

grasp of the PPP process. Successful implementation of PPs translates to the achievement of the desired goals of the partnership (Rostiyanti & Tamin, 2010). Adequacy and quality of water are evaluated by monitoring programs put in place (OECD, 2009).

Successful implementation of PPP contracts starts at the initial stages of the project. It is during the development stage of a project that the government ensures that the project achieves cost-benefit as well as ensuring there is better value for money invested in the project (Marin, 2009). Projects must indicate their appropriateness for development as a PPP strategy before public funds and resources can be invested in them Harris and Vellutini (2012). These authors are of the view that preparation process should be broken down into thorough phases, carrying out reviews before each phase to determine the probability that the project will continue meeting the criteria or standards set to determine the success of the project (Bruchez, 2014). In support of the latter, Farquharson, Torres, Yescombe and Encinas (2011) emphasize that a clear PPP process map which includes the quality assurance, as well as approval processes, should be established.

To accurately identify the proposed or existing service initiatives to deliver through PPPs, local government should use the systematic analysis (Frone & Frone, 2018). Therefore, to respond to the public needs and a wide range of initiatives for success, the local government should set priorities about their capabilities with the guide of the results of the analysis (Matji & Ruiters, 2015). In the implementation process, certain guidelines go a long way in ensuring an efficient and effective implementation process (Mohammed & Saidi, 2018). These guidelines include the establishment of a project team which will be actively involved from the planning stage to the

completion of a contract and could also be involved in the monitoring of the performance of the private partner.

The team should consist of government staffs, an individual with thorough technical ability, and independent and external expertise from the local government (Jensen, 2017). The characteristics of an ideal team would include choosing a process manager to lead the team; establishment of a communications protocol within the team as well as with the stakeholders; independence and neutrality of consultants; no conflicts of interests on the part of the members of the project team (Mohammed & Saidi, 2018).

Second is refining the scope of the project where the scope can be refined by the project team through conducting a needs assessment as well as establishing the objectives to be achieved through the partnership (Matji & Ruiters, 2015). The objectives should strive to be specific, measurable, accurate, and realistic and time-bound to enable the team to accurately development a request for proposals at a later date, for potential partners to respond (Frone & Frone, 2018). Also, despite the inherent nature of risks, especially in most local government services initiatives, the project team should attempt to reduce risks. Risks should be assigned to the party who can best mitigate it. Redefining of scope ensures accurate accounting of the expected project costs (Kwan, 1999).

Another step is establishing the schedule where the project team should come up with a servicing or project schedule and establish clear key milestones (Nwokorie, 2018). It should be in sync with the government's timeframe for completion of the project or service initiation. Some of the key milestones include activities to be carried out by the local government in requesting and evaluating proposals, steps involved in the

negotiation of contract as well as project rollout (Frone & Frone, 2018). PPP life cycle involves three major phases that include policy and planning phase where legal, institutional, and regulatory and policy framework for PPP are articulated (Mohammed & Saidi, 2018). The transaction phase is second, where quantitative and qualitative analysis of project alternatives is done, and performance standards and incentives set to the PPP life cycle.

The third is the partnership phase, which involves various stages including construction; operations and management; resolution and termination /asset handover. Other activities in this stage may also include dispute resolution, renegotiations and regulations (Nwokorie, 2018). There exists a significant difference between traditional procurement and Private-Public Partnerships. Traditional procurement involves the government paying capital, operating costs and takes on risks on it (Qian, House, Wu & Wu, 2020). The public sector is responsible for the allocation of resources, owning and operating the project. PPPs can be considered as complex arrangements that involve different stakeholders, with each party representing different interests. It is, therefore, important to formalize the process transparently and systematically.

In an in-depth conceptual interrogation to determine whether the process of adoption and implementation of PPP policy differs between developing and developed countries, the study justified direct relation between the level of development of a country and the PPP policy they adopt as well as an implement (Kahyaoğulları, 2013). It further points out that the regulatory framework between the developed and the developing states differ. The study concludes that due to a lack of capital, PPPs are taken as an opportunity to fund large scale economic infrastructure projects (Fombad,

2013). It further notes that the main types of PPP in most developing countries are BO or BOT the developing countries generally have a weak regulatory framework which makes it harder to form PPP collaborations.

2.6 Challenges faced in the implementation of PPPs in water service delivery in Kenya.

Despite the benefits expected from PPP, there is a need to exercise caution in broadening its application in the context of developing countries. The dilemma in adopting the PPP approach by developing countries begins with their status as nations (Fombad, 2013). Developing countries are economically depressed, lacking the resources to effectively apply a PPP (Isoke & van Dijk, 2014). Countries with reasonably strong public and private sector institutions, a sound economic resource base, and an acceptable and enforced regulatory framework are mentioned in research studies and literature that offer a rosy picture of PPP (Chan &Ameyaw, 2013). The public sector in developing countries is weak, with a limited economic resource base and an insufficient regulatory framework.

In a similar vein, the private sector is still young and lacks adequate financial, technical and managerial capabilities (Fombad, 2013). However, when it comes to the requirements, PPPs rely on the availability of an effective and enforced legislative framework, as well as a thriving private sector with financial, managerial, and inventive capabilities that the public sector would want to use (Buabeng, 2015). Thus, will PPPs provide "value for money" in developing nations when regulatory frameworks are inadequate and the public and/or private sectors are destitute, and if so, how should PPPs be implemented to maximize their potential?

PPPs have tangible benefits for populations though private operators are not a solution to the problems of ailing utility due to mismanagement (Buabeng, 2015). The records in developing countries show diversity with good, mixed and poor results. As a result, PPP projects are a viable option for reforming badly performing water utilities (Pinda, 2010). Public and private actors should overcome the challenges that come as a result of the inherent conflict between their respective goals. Often the public actor is driven by the goal of minimizing the economic costs and guarantee the delivery of high-standard products and services, during which the private actor aims to reduce returns.

However, contracts should reflect comprehension of what PPPs can contribute and should also reflect a better on matters of risks and responsibilities. Contractual targets should also be well spelt out in the documents where well-conceived sectoral reforms are drawn. Marin argues that PPPs have a mixed outcome, as some have failed to solve important issues such as financial viability and accountability (Asare & Frimpong, 2013). Credible regulatory schemes for concessions seem missing and regulatory mechanisms of most of the concessions show weakness and insufficiency to handle political and economic matters. Moreover, PPP contracts show poor contracts with unrealistic goals (Obosi, 2015). The PPPs are also marred with problems of availability of baselines from which progress can be measured. Various scholars have identified some of the challenges arising from the implementation of PPPs and some of the solutions to them. Steijn, Klijn and Edelenbos (2011) named the challenges as making the accurate risk allocation decisions that would enhance the best cost-effective project solutions: timely decision making that is of consistency with the PPP allocation processes: consistently practicing transparency through the PPP procurement processes.

Moreover, there are financial drawbacks and the fact that water remains a challenging sector, the matter has been aggravated by politicization and technicalities together with financial transactions. Migan (2015) notes that PPP progress is slow due to disputes which create the need for the private and public sectors to have contract provisions that respond to the required changes as the project progresses. Project preparation should be allocated adequate time by the parties which understand service delivery requirements (Raunio, 2016). The report recommends that there is a need for PPP partnerships to consider affordability and willingness to pay the public while defining the tariff mechanism (Isoke & van Dijk, 2014). The possibility of recovering all the capital expenditure is not possible, and this means there may be a need to finance the project from the national budget.

2.7 Empirical literatures

Empirical reviews of past studies are conducted in this section to aid in the identification of research gaps that warrant further studies.

2.7.1 The process of implementing PPPs in water service delivery.

Abubakari, Buabeng and Ahenkan (2013) undertook a study titled implementing public-private partnerships in Africa for urban water service delivery in Ghana. The case study method within the qualitative approach was used for the study. The study also, made use of interview as the research instrument and respondents were purposively selected. There were multiple gray areas in the management contract, which resulted in ambiguity in various aspects of the contract. Due to these misunderstandings, the implementation process was delayed. Furthermore, there appeared to be a conflict of interest on the side of Ghana Water Company Limited, resulting in ineffective oversight. Political influence also weakened the structures put

in place to carry out the deal. The leadership of Ghana Water Company Limited was hampered by frequent leadership changes and the fact that most of the leaders were acting. However, depending on the legal framework, a public-private partnership in the water sector may differ from nation to country, necessitating the need to perform this research in Kenya. Bruchez (2014) investigated public-private partnerships (PPPs) in South Africa. The study was both qualitative and quantitative employing questionnaire and interview guides. Results show that these partnerships are still far from being such a tool in South Africa. Too few large-scale infrastructure projects are implemented through PPPs and in sectors that are not considered as ideal according to the literature. Reforms are needed to simplify processes and legislation, strengthen the capacity of the public sector to cope with these partnerships, and increase the visibility and general commitment of politicians, authorities, and the public to the PPP concept. However, depending on the legal framework, a public-private partnership in the water sector may differ from nation to country, necessitating the need to perform this research in Kenya.

Matji and Ruiters (2015) investigate the conceptual framework for public-private partnerships in the Limpopo and Gauteng provinces for water infrastructure assets. Water infrastructure assets are critical to the delivery of fundamental services. Data was gathered from a variety of sources, including water boards and private sector organizations. The framework for Public-Private Partnerships models comprises three categories, viz., state model, hybrid model and private sector model. Each of these models depends, amongst others, on the funding structure. The Limpopo and Gauteng provinces in South Africa were used as case studies for PPP schemes. The findings of this study indicated that South Africa had viable PPP models for local government water projects. Technical/project risk, financial risk, contractual risk, skills and

knowledge transfer, roles and responsibilities of state institutions, affordability and revenue flows, value for money; ownership of infrastructure; socio-political concerns/issues, funds following functions, technology and innovation, and an open and transparent procurement process are all factors that influence the success of such models. Municipalities' lack of technical, management, and legal capacity makes implementing public-private partnership models in local government difficult. However, the current study focuses on water service delivery in the slum areas of Kenya. Success factors on PPP implementation and jurisdiction may from country to country.

Frone and Frone (2018) used numerous approaches to investigate concerns of efficiency for public-private partnerships in Romania's water sector: literature review, case studies, performance indicators, analysis, and synthesis. Because of the high prices and low affordability of the people, especially in rural regions, the most significant economic risk of water service sector projects in Romania is a commercial risk, i.e. the risk of decreased demand and hence non-payment of charges for water and wastewater services. This economic risk is jeopardizing the efficiency of the water companies and normally does not foster the creation and development of some forms of PPPs for the much required and needed development of the water supply and sewerage networks and services in Romania. In Romania, the PPP concession has improved water and wastewater services. A dedicated public authority; a dedicated and expert advisory team; a well-prepared, high-quality, and transparent transaction process; an unusually thoughtful and innovative contract design; and well-designed and implemented contract monitoring and dispute resolution arrangements were the main success drivers.

Nwokorie (2018) looked into the coordination of public-private partnerships in the Tanzanian water sector. The study utilized qualitative methodology to review secondary data on the failed Dar es Salaam Water and Sewerage Authority (DAWASA) of Tanzania and City Water Services (CWS) PPP. It extensively reviewed scholarly literature and empirical studies relating to the failed PPP. Evidence shows that the legal and regulatory framework of DAWASA/CWS PPP lacked any mechanism for monitoring and accountability to hold the government or private sector responsible and accountable for the project breach and failure. The contract had no implementable mechanism to stop illegal connections and prevent customers from refusing to pay water bills. It did not provide a window for dialogue with stakeholders on relevant issues capable of attracting opposition, for example, public resistance to private sector involvement, the dilapidated state of DAWASA's infrastructure, and other unforeseen issues. Furthermore, the contract failed to put down a clear and transparent rule for dispute resolution. Poor coordination of the PPP manifested in poor management, conflicting interests, loss of trust, and suspicious behaviors by the partners from the procurement and political interference undermined implementation of PPPs projects. However, the study did no show how the public-private partnership has influenced water service delivery.

Qian, House, Wu, and Wu (2020) conducted a comparative examination of public-private partnerships in China's water sector. While the worldwide rate of PPP development has slowed in recent years, China has emerged as one of the most active markets for public-private partnerships (PPP) in the water sector. Through comparative case studies, this paper explores the dynamics of the growth of PPP projects in the Chinese water industry. The study's findings revealed that the central government's persistent pursuit of PPPs as a policy instrument, water sector reforms,

and local governments' effective implementation are among the important drivers driving China's impressive growth of PPP projects. The study suggested that the persistent pursuit of water-sector reform and PPPs by the central government, including the provision of financial, legal and technical support; strong implementation by local governments, including the capacity to negotiate local–national government dynamics; and the marketization of the water sector before PPP implementation are key factors in the rapid expansion of PPPs in China. However, the current study focuses on water service delivery in the slum areas of Kenya. Success factors on PPP implementation and jurisdiction may from country to country.

2.7.2 Challenges in the implementation of PPPs in water service delivery

Fombad (2013) investigated accountability challenges in public-private partnerships from a South African perspective. One of the potential benefits of public-private partnerships is its capacity to enhance accountability. Despite the South African government's efforts to address the need for justice in service delivery and improved procurement accountability, accountability in PPPs in South Africa and most other nations remains a concern. The issue of accountability must be addressed if PPPs are to play a role in infrastructure development and service delivery and thereby serve public interests. If appropriate accountability structures and anti-corruption measures are put in place, as well as effective mechanisms to ensure stakeholder consultation, transparent procurement processes, open access to information, contract monitoring, and appropriate risk transfer, accountability in PPPs will become effective. The ultimate attraction of PPPs is not satisfying the demand for public collaboration with the private sector, but increasing efficiency and innovative service delivery, and ensuring value for money through good practices in procurement management. Accountability challenges identified included lack of public consultation and

transparency, corruption, a lack of competition, accounting issues, ineffective contract management, failure to monitor performance, and failure to ensure value for money and equitable risk allocation.

Chan and Ameyaw (2013) studied the private sector's involvement in the water industry of Ghana. A research approach integrating multi-stage critical review of relevant related literature and case studies is adopted in this paper. The study is further informed by the authors' experience in the sector and knowledge of PPPs. Analysis of data from different sources, using both approaches, provides both a historical and contemporary approach to water management practice in Ghana. The paper reveals that the Ghanaian water supply sector mirrors the classic challenges of public sector utilities in developing countries. Under-investment by the government is the major cause of the ill-performance of the sector, necessitating private sector involvement. Management contract has emerged as a popular form of water supply PPP in Ghana. Further, optimal risk allocation has not been widely adopted in these contracts, and not yet been given much attention by practitioners and researchers in the literature of water management in Ghana.

Buabeng (2015) investigated the implementation of a public-private partnership in local government in Ghana: A study of Ga West and Adentan Municipal Assemblies in the Greater Accra Region. The qualitative research approach was adopted for the study. Key informants were purposively selected from the two study areas and primary data collected using one-on-one in-depth interviews. Additionally, secondary data regarding contracting processes and results were further subjected to thorough content analysis. The study observes that PPP has been applied in the provision of different local government services in the two districts. The use of PPPs has chalked

up some form of benefits amidst major structural and institutional challenges. The study concludes that PPP has good prospects of enhancing the provision of local government services if laxities are addressed. Notable challenges in the implementation of PPPs projects include political interference, financial constraint, centralized nature of decision-making and undue delays and institutional laxities.

Pinda (2010) studied the National Public-Private Partnership (PPP) Policy in Tanzania. Most PPPs implemented in Tanzania are concession arrangements for running existing enterprises with limited provisions for rehabilitation and new investments. It is noteworthy that in the case of services, PPPs have been implemented successfully by Faith-Based Organizations (FBOs) in education, health and water sectors for many years. However, in the case of other sectors, the performance has been mixed largely due to the complexity of such projects and lack of clear guidelines on the criteria for public and private sector partnership. Tanzania faces a number of challenges when considering using this instrument, including a lack of comprehensive policy, legal, and institutional frameworks that provide clear guidelines and procedures for the development and implementation of PPPs; a lack of realistic and comprehensive technical, socio-economic, and commercial feasibility analysis, which leads to poor project design; and an insufficient enabling environment, which includes a lack of adequate infrastructure.

Asare and Frimpong (2013) studied public-private partnerships and urban sanitation. The study adopted the Integrated Impact Assessment Method of the United Nations Research Institute for Social Development. Moreover, communication channels should be built-in PPP contracts to allow consumers to participate in making informed choices about service standards and delivery mechanisms. Non-governmental

organizations think tanks, and community-based organizations (CBOs) should help build the capacity of local people to participate in PPPs through workshops, seminars, group discussions and other training programs. Participation will allow consumers to see how prices and quality of service will be affected, the quality of service they can expect and understand their rights under the partnership agreement. Participation structures will, additionally, help consumers to express their concerns and grievances about service provision.

Obosi (2015) studied public service delivery challenges the case of public-private partnership in water service provision in Kenya. The study included secondary and primary data from a household survey of 288 respondents, seven (7) Focus Group Discussions, and 28 key informant interviews conducted by seven (7) Lake Victoria South Water Services Board (LVSWSB) WSPs (Mogombet, Chemosit, Boya, KIWASCO, SNWSCO, MIKUTRA, and Nyasare). The key finding was that public institutions with more private sector engagement performed better than those without, implying that the more the public-private sector collaboration, the higher the quality of public service delivery.

Migan (2015) studied innovative public-private partnerships for rural water services sustainability in Benin. The findings indicated that the private sector participation has resulted into a 54% increase of household connections per private sector operators, 18% increase of the volume of water distributed, and a 41% increase in the number of hours of service per day. Benin is one of the countries that has sought the participation of private investors in the water sector, and this case study demonstrates the potential impact of the Benin experience. Piped rural water systems are increasingly being administered by private entrepreneurs under an average arrangement with city

authorities, against the backdrop of a PPP legislative framework. This case study demonstrates the potential for private sector involvement in piped rural water systems while also highlighting some of the ongoing sustainability challenges. There is a significant possibility for the remainder of Sub-Saharan Africa to establish similar PPP schemes to solve the difficulties, with a stronger emphasis on sustainable services that change in tandem with changing demands of rural communities.

Raunio (2016) studied the successful implementation of public-private partnerships to local communities: Providing water supply services in Sub-Saharan Africa. The research methodology of this study was founded upon the secondary research method. This means research based on already published knowledge, such as books, journals, articles. Water scarcity is an on-going challenge that will continue to affect the globe. However, it is a challenge that modern economies can answer if common interest is achieved. In many areas, water scarcity is more of a socio-economic problem than a lack of water resources, as presented in this research with the example area of Sub-Saharan Africa. Now the areas suffering water scarcity are mostly poor, conflicted areas, where climate change and fast population growth create extra pressure to provide basic services, like water supply services. These states need external help and support, financially and with experts from the field.

2.7.3 Viability of PPPs in water service delivery

Van Dijk (2008) studied public and private partnerships in basic service delivery of water in India. This was a case study in India to find out what are the most important factors in explaining the success and failure of PPPs. India has done very well in improving the access of its population to better drinking water. In 1980, coverage was 31 percent in rural regions and 77 percent in urban areas, but by 2000, it was 80

percent in rural areas and 94 percent in urban areas. The emphasis of drinking water supply in national policy, with large appropriations under successive Five-Year Plans, and a combination of national and state programs all contributed to this success. Cooperation on a bilateral and international level was equally important. These achievements, however, are under jeopardy.

Tsitsifli and Kanakoudis (2008) investigated best practices in water services PPP projects. Only 62 percent of Africa's population has access to basic water infrastructure. When it comes to rural populations, the percentage reduces to only 47%. Sanitation is also an issue (60 percent average, 45 percent for the rural populations). This paper will offer three case studies from Africa that have successfully implemented PPP initiatives. The projects involved the development of water supply networks and the provision of improved water supply services (tariffs etc.). Finally, the most important PPP success criteria are given and addressed, including governmental support, public acceptability, devolution of authority, stakeholder involvement, and so on.

The applicability and limits of delivering water infrastructure through a public-private partnership were explored by Kajimo-Shakantu, Kavela, and Shakantu (2014). A review of the literature was followed by a survey that used self-administered questionnaires to gather data from 70 respondents from the government, Public Utility Company, and a variety of water and mining consultancy organizations. Most respondents think that establishing a desalination plant would provide an alternate way to meet current and future mine demand and to secure long-term access to bulk water supply, based on the findings. However, most of the respondents state that their institutions do not currently fund enough for new water infrastructure construction

and upkeep for mines, therefore PPP would be an acceptable framework for developing the desalination project. Water supply infrastructure development and maintenance, on the other hand, necessitate a significant financial investment. Water supply infrastructure development is hampered by a lack of funding, institutional capacity, and skills.

Mfunwa, Taylor and Kreiter (2016) investigated public-private partnerships for social and economic transformation in Southern Africa: progress and emerging issues. Southern African countries, in particular, should: introduce and implement appropriate legal and regulatory frameworks; strengthen the institutional quality, including building the requisite human capital needed to negotiate and monitor the implementation of PPP contracts; support inter-country sharing of experiences and learning to achieve an equal level of expertise and thereby ease the rollout of cross-border infrastructure and services that are critical to regional integration efforts, and actively support meaningful participation of all key stakeholders in public and non-state sectors from the policymaking stage to the implementation of PPP contracts. The few case studies in this paper point to scant evidence that these fundamentals are being followed. However, many stands to be gained by countries that assiduously work on getting the foundations right because PPPs does indeed hold promise for social and economic transformation leading to improved living standards for the citizens of Southern Africa.

Ndandiko (2016) studied public-private partnerships as modes of procuring public infrastructure and service delivery in developing countries: Lessons from Uganda. A review of the literature was done on public-private partnerships and procurement to get background information and the situation of PPP in developing countries in

general. A questionnaire with open-ended questions was prepared and administered based on the information acquired from the literature research, and follow-up face-to-face interviews were done to collect data. In the absence of strong public and/or private sector institutions and an adequate framework, this study argues that an ad hoc implementation of PPP in local governments could degrade infrastructure and service delivery, and hence be unlikely to benefit the public client. The flaws and roadblocks to PPP deployment bring to light important performance difficulties. Most crucial success components are missing in Uganda; for example, there are no consistent PPP policy guidelines or a sufficient legal and regulatory framework. Contract monitoring and enforcement mechanism are reported to be weak and "who is responsible" is not clear as evidenced by the fragmented and uncoordinated directives from the different political and administrative organs. Such a scenario is the possible reason for political interference, corruption, non-compliance and the poor-quality services listed in the barriers. It could also be the reason for the lack of awareness and misconception by the stakeholders.

Obosi (2017) investigated the impact of public-private partnership on water service delivery in Kenya. Using quantitative techniques to analyze the data under governance theory, the study established that compared to the period up to 2004, the households experienced better services in the year 2012 in terms of water quality, affordability, access and customer service levels as currently observed compared to the period up to 2004 to the extent that public institutions that had adopted more private sector participation performed better than those that have not. On average, there was a reduction in distance to water point reduced by 78.3 m; frequency of colored water by 0.2 days, time is taken to restore water 3 days within the ten years.

The study looked at the water service provider contrasting current study that looks at the actual beneficiaries of water in Kayole Soweto.

2.8 Theoretical Literature

The study was guided by Agency Theory, Public Choice Theory and Game Theory.

2.8.1 The Agency Theory

Jensen and Meckling (1976) developed the agency theory advancing that an agency relationship is a contract under which one or more persons (the principal) engages another person (the agent) to perform some services on their behalf. Agency theory advocated for a clear separation between decision management and control. The theory is premised on the inherent conflict of interest between the owners and management thus forming the basis for the introduction of strong governance mechanisms (Panda & Leepsa, 2017). The agency theory investigates the conflicting interests of agents and principals and takes a management approach in matters of corporate governance. The proponents of this theory sought to address issues of the growing concern that managers tended to engage in empire building and neglected the interests of shareholders.

According to Agency Theory, there are conflicting goals among the main partners in any given transaction. As explained by Campbell (2011), Agency Theory helps in establishing the link between the principal and agent answering the question of why public interest is often made subservient to private interest in the regulatory arena. In simple terms, PAT refers to a dilemma that arises from a partnership between two parties with opposing interests: the principal (government or politician) and the agent (private bodies). Laffont and Triole's (1993) method could be effective in adapting this PAT model to PPPs in local administration. They argued that when it comes to

PPP, the government (principal) has no vested interest in monitoring the agent's behavior or accurately monitoring the agent's productivity (Panda & Leepsa, 2017). Mitnick (1973) suggested that in such circumstances, the costs would be passed on to the general population. In economic mean terms, the principal will directly bear the cost for their failure to monitor the agent's actions by paying higher fees for services rendered. Two main assumptions have been identified in the literature there is an asymmetry of roles and information between the two partners of the partnerships and there are perception biases that complicate the rational evaluation of risks and that aggravate the impact of information asymmetry (de Palma, et al, 2009) Mitnick (1986). Perry and wise (1990) identified lack of incentives by measuring the level of public service motivation among bureaucrats.

In the process of advancing the principal's interests, the agent also advances their interests. Jensen's and Meckling's (1976), in their perspective, argue that there is a conflict of interests as the managers cannot bear the full consequences of any actions they take. Both parties seek to maximize their utility and also have their self-interests that bring about conflicts. This creates a condition where the principal ought to control the agent to curb opportunism and self-interests (Eisenhardt, 1989). The merging of these interests encourages the achievement of corporate objectives of the organization through the proxy as they are in charge of the vast resources of the organization. Based on this theory, there should be proper synergy between the management and its stakeholders to enhance mutual efforts towards a common goal. Therefore, the role of the agent in the strategic management of this relationship cannot be underestimated Otungu et al. (2011).

However, several scholars have criticized the agency theory. Guth and MacMillan (1986) argue that middle managers are likely to alter the implementation strategies within the implementation process because of their interest. Barclay and Holderness (1989) echo the criticisms and argue that the owners who by design have high ownership are likely to use this advantage to acquire private benefits not shared by other stakeholders. These benefits might include consumption of goods and services produced extraction of assets or takeover defence for insiders. Lastly, the theory has a simplistic way of solving organizational problems in that it oversimplifies the problem-solving in organizations.

The relationship between the government and the private partner can be well explained through agency theory. In this study, the government represents the principal, while the private partner represents the agent. The private partner works towards enhancing the goals of the government biased to the type of contract. Meeting these outcomes is, however, tied to the achievement of the interests of the private partner in the partnership. Agency costs inherent in the public sector may be minimized by combining public and private service delivery through PPPs.

2.8.2 Public Choice Theory

The public choice theory originated from the economic theory of public/rational choice of public goods as advanced by Mueller (1979). However, the original use of public choice theory was in 1962 when James Buchanan and Gordon Tullock co-authored a book on the political organization of a free society using a method and conceptual apparatus of the economic organization of such a society. The public choice theory examines the provision of public goods (Than, 2002). A public good is anything that is at least partly rival and/or non-excludable in the sense that adding

new recipients has no effect on the value of the benefit for the original beneficiaries (Shughart & McChesney, 2010). Public goods can be naturally available, generated by the government, private persons and businesses, non-state collective activity, or not produced at all. The difficulty in determining the amount of an individual's need and how much each should be charged leads to the need for public provision. In short, the private sector confronts significant difficulties in delivering socially desirable levels of public benefit.

The state's regulatory frameworks should be at per with the existing wider water policy framework, which must be consultative among all the stakeholders, and the citizens involved in decision making (MacLean, 2011). Due to the high cost of investment in water infrastructure, the government is bound to involve various development partners with different interests (Farber, 2017). The state evaluates several policy choices, including privatization, public enterprise, and public-private partnerships, to enhance the efficiency and efficacy of water provision (Gubler, 2012). A government may fund the private sector's creation of such a public good. Because of the voters, the public choice theory implies that excellent government policies are an underserved public benefit in a democracy (Russell, 2013). While good government is often viewed as a pure public good by the majority of voters, various interest groups may have substantial financial incentives to persuade the government to impose certain inefficient policies that benefit them at the expense of the wider public.

In specific reference to our study, the public choice theory holds that a regulatory policy of the government that takes cognizance of the public good characteristics of water shall enhance an effective public-private partnership between water service

providers and stakeholders. The quality of services will therefore be enhanced in terms of affordability, quality, accessible water and good customer service (MacLean, 2011). It is unlikely, that good service delivery could be realized in a poor partnership structure. The production of public goods results in positive externalities which may not be directly compensated (Gubler, 2012). If private companies do not get all of the benefits of a public product they created, their incentives to do so voluntarily may be insufficient. Consumers can benefit from public goods while not contributing enough to their creation.

The public choice theory is frequently used to explain how political decision-making results in outcomes that are at odds with public desires. Individuals, interest groups, bureaucrats, and politicians are supposed to seek their own self-interest in public choice, just as they would in the marketplace. Decisions are based on the costs and advantages of acting, with each group attempting to maximize its net benefit. Benefits can take the form of monetary or non-monetary rewards and may include ideologies, goals, and cultural values. It attempts to look at governments from the perspective of the bureaucrats and politicians who compose them and assumes that they act based on budget maximizing model in a self-interested way to maximize their economic benefits. The theory applies economic analysis, usually decision theory and game theory, to the political decision-making process to reveal certain systematic trends towards inefficient government policies. Provision of water services to the public requires rational decisions on how to manage water utilities.

2.8.3 Game Theory

Game Theory was postulated by John von Neumann (1928). To investigate the strategic decision-making between rational persons, game theory aims to consider the

interactions between the participants and their behavior (Barough, Shoubi & Skardi, 2012). The game theory approach can be utilized to make decisions concerning specific challenges and conflicts that arise during project execution (Boková, Sláviková, & Gabrhel, 2015). Conflicts may emerge during project execution because any project participant may act on their own behalf, whereas the game theory technique considers the interests of all parties (Dubina, 2015).

San Cristóbal (2015) uses game theory to recognize and explain the behaviors of parties involved in the project planning stages, as well as to illustrate how interactions between stakeholders, primary contractors, and lead supervisors can lead to effective project implementation. The game theory and optimization methods results are often different because in optimization methods all parties are willing to act in which can lead to the best results for the whole system, while in the game theory each party tend to act in which can lead to the most logical outcome for him that may not be the best result for the whole of the system (Hatfield, 2015).

A constant difficulty with game theory modelling is defining, limiting, isolating or accounting for every set of factors and variables that influence strategy and outcome (Syll, 2018). What is missing from the overly simplified mainstream perspective of mathematical modeling in game theory is an ontological reflection on the conditions that must be met in order to employ mathematical modeling methods correctly (Morris, 2012). Given the assumptions, formal mathematical modeling can ensure that the result is correct (Horowitz, Just & Netanyahu, 1996). There is no guarantee, however, that the validity we obtain in abstract model worlds will instantly translate to real-world economies. Validity and consistency are important, but they are insufficient.

Water project management is prone to dispute, which can arise between stakeholders, main contractors, and/or main contractors and subcontractors. In project implementation, Game Theory is helpful. The overall expenses of a water project, maintenance, and management can be estimated using game theory.

2.9 Conceptual framework

Independent Variable

Concerning PPPs as a strategy in water service delivery for urban areas in Kenya, the implementation process of PPPs in water service delivery for urban areas and viability of PPPs in water service delivery for urban areas in Kenya were used as independent variables.

Dependent Variable

The parameters used to measure water service delivery include: - Efficiency, quantity, quality and affordability. These will be used as the dependent variables and an analysis of the relationship between the dependent and independent variables done.

Intervening Variable

Challenges in the implementation of PPPs can affect the delivery of water services. These challenges include: - Lack of consultation, corruption, accountability issues and ineffective contract management.

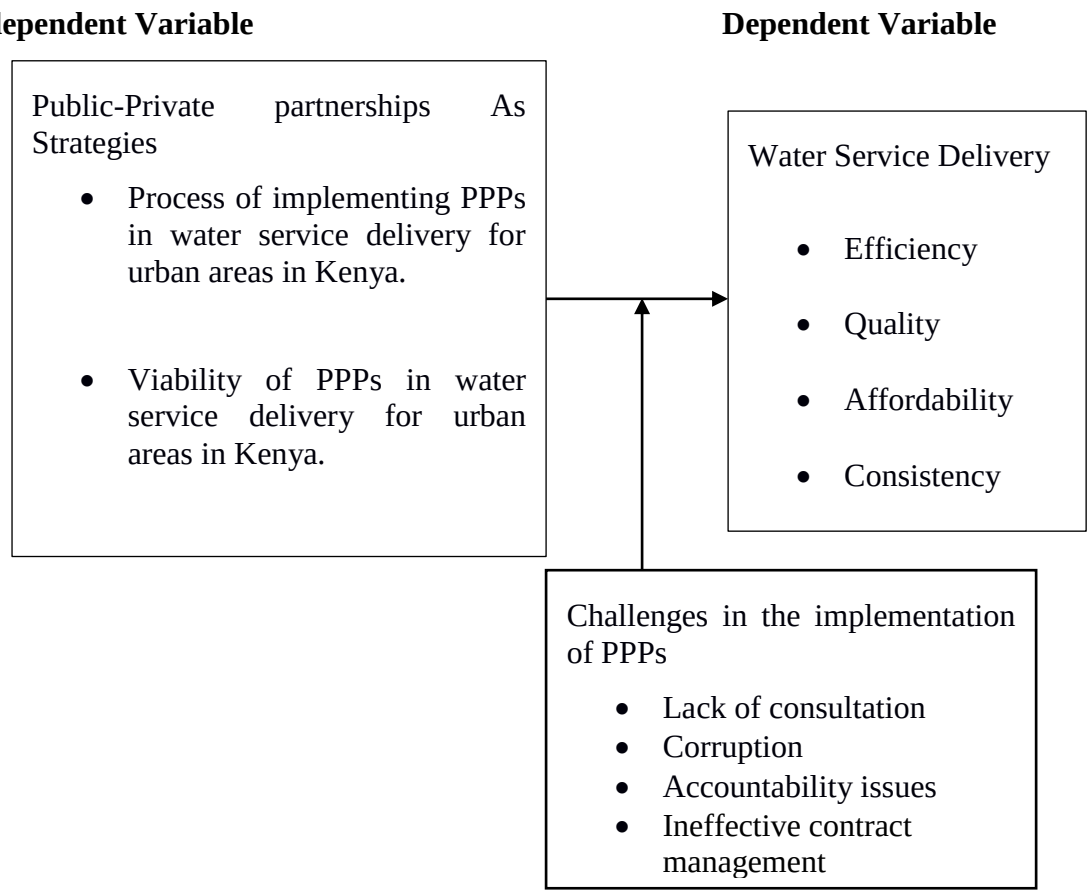


Figure 2:1 Concept Framework
Source: (Author, 2017)

2.10 Summary

The chapter presented the conceptualization of public-private partnerships strategy and water service delivery. Further, empirical literature of past studies in this thematic area was undertaken and evaluated. A critique of the existing literature departs from the studies in the empirical literature was conducted to identify knowledge gaps of the study. Despite the call for public-private partnership in the provision of public goods, the viability of the PPP contract in enhancing the provision of public goods and services remains contentious among scholars. There are those scholars who argue that public-private partnership is not efficient in the provisions of public goods and services (Mu, DeJong & Koppenjan, 2011; Bakker, 2010) while other scholars argue that PPP is a solution in the provision of public goods and services (Abubakari,

Buabeng & Ahenkan, 2013; Obosi, 2017). Theories that guide this study were also presented and include agency theory, public choice theory and game theory. Finally, a conceptual framework depicting the relationship between a public-private partnership strategy and water service delivery was presented.

CHAPTER THREE

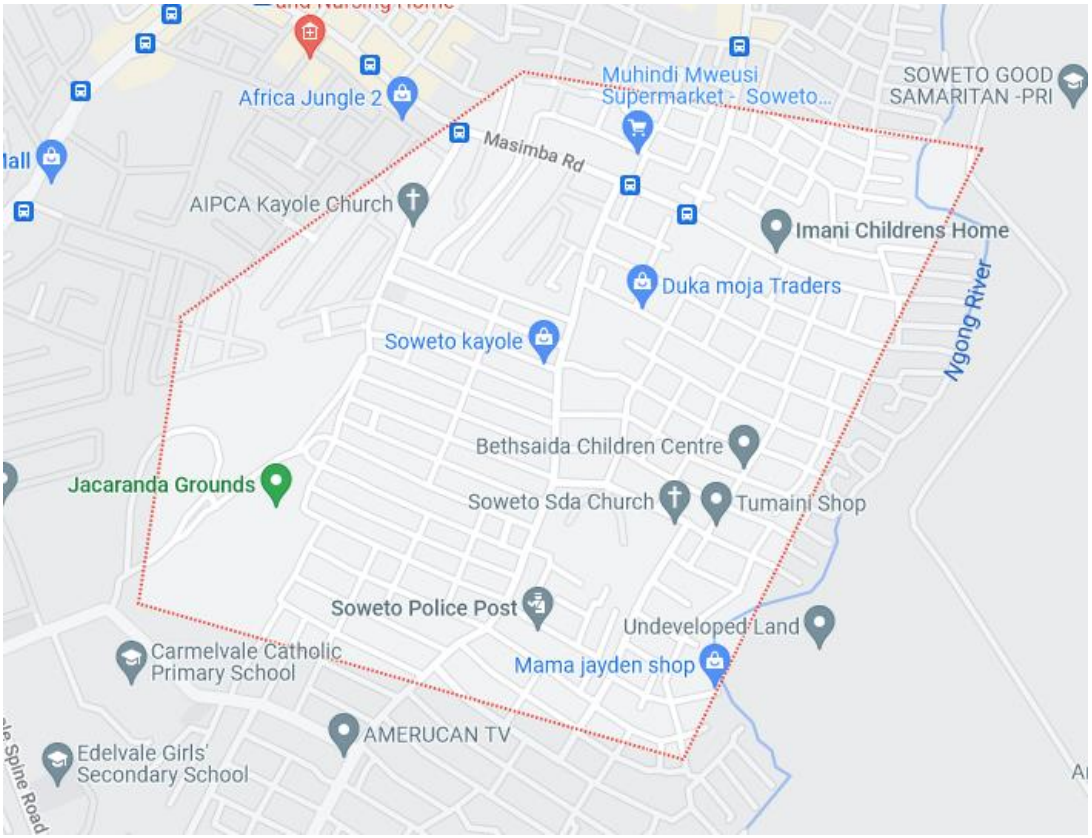
RESEARCH METHODOLOGY

3.1 Overview

The chapter has systematically articulated the process involved in undertaking the study based on the set objectives. Areas of concern include: - study area, research design, sampling and data collection procedure as well as data analysis and ethical considerations.

3.2 Study Area

This study was conducted in Kenya with a specific focus on Nairobi Kayole Soweto Village in Nairobi. This settlement is located at Embakasi Division in Nairobi's Eastland's' area. The settlement was formed as a result of the transfer of poor people from the city Centre to the outskirts. The map of Kayole Soweto Village is attached in Appendix III. According to Njambi (2013), the average monthly income is Kes12, 000 / $150. The settlement is densely populated with an estimate of 1600 households. Piped water is accessible at more than 35 standpoints. Water is sold at approximately 2/- and 3/- per 20 liters vessel.



Map of Kayole-Soweto Village

Source: https://www.google.com/maps/place/Soweto,+Nairobi/

3.3 Research Design

The study was a case study where a detailed and intensive analysis of a single case (Kayole, Soweto) was carried out. The study adopted a case study research design. A case study is useful when research questions entail ‘Why’, ‘What’ and ‘How’. Case studies are often employed to depict or understand a problem or indicate good practice, gaining a rich understanding of the context of the research and the processes being enacted (Newing et al., 2011). The researcher can inquire on how and why questions to understand make the study more comprehensive. Cases studies are bound by time and researchers tend to gather comprehensive data by employing a variety of data gathering procedures through a sustained period (Meyer, 2015). The case was

aimed at bringing out an in-depth understanding of how the partnership operates as well as its contribution to the residents of Kayole, Soweto.

3.4 Target Population

The population is the total collection of elements about which inference is made to all possible cases which are of interest in the study (Sekeran & Bougie, 2010). It is a group of individuals, objects or items from which samples are taken for measurement or it is an entire group of persons or elements that have at least one thing in common. The units of analysis were the standpoints of piped water in Kayole-Soweto Village. The study population was 135 households in the Kayole-Soweto area. The study also targeted 4 experts in the Maji Mashinani PPP project as well as PPP project consultant. The units of observation were the household heads and PPP experts from Maji Mashinani public-private partnership.

3.5 Sampling technique and sample population

A sample is a subset of a population (Desu, 2012). The study adopted Yamane (1967) formula to estimate the sample size for the household heads. The study used the random sampling technique to identify households to participate in the study. The study used the formulae below to estimate the sample size:

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

Where:

n = sample size

N = population size

e = the level of precision

1 = Constant

$n = 135/ 1+ 135 (0.05)^2$

= 100≈ 100 households heads

Random sampling was appropriate as it ensures equal representation of participants in the study by eliminating any possible bias. Due to the limited number of experts, the study used purposive sampling to include all 4 PPP experts at Maji Mashinani.

3.6 Instruments of data collection

Instruments of data collection were questionnaires and interview guides. Questionnaires were administered to household heads while the interview session was held with experts from Maji Mashinani PPP.

3.6.1 Questionnaires

The study employs semi-structured questionnaires to collect data (Appendix I). The questionnaires consisted of semi-structured questions that allowed the respondents to select answers from given choices and elaborate on their answers. Marshall and Rossman (2010) point out that, questionnaires are appropriate for studies since they collect information that is not directly observable as they inquire about feelings, motivations, attitudes, accomplishments as well as experiences of individuals. 100 sets of questionnaires were printed for distribution to household heads at Soweto Kayole area. The method involved preparing a set of questions guided by the study objectives, which were administered to the respondents in person. The collection of data was scheduled in December 2017 for a total of 2 weeks. A total number of 100 sets of questionnaires were used and 80 sets of questionnaires for the households. Out of the 100 households, 20 did not give consent to participate in the research.

Some of the challenges encountered in the collection of data were the literacy level of some of the respondents who were not able to use the research tool. In such cases, the researcher read out the questions to the respondents and filled the questionnaires with the responses provided. Another challenge in the use of the questionnaire was that some of the respondents did not understand how to fill in the questionnaire. However, this was resolved by guiding the heads of the household on how to fill them.

Another challenge was the respondents' reluctance to participate in the research as they thought that the research was carried out on behalf of the Nairobi Water and Sewerage Company and the Maji Mashinani Project. The researcher clarified that the research was for academic purposes and provided the research letter from Moi University and research permit from NAWASCO.

3.6.2 Interview guides

The interview guide (Appendix II) was also developed as per the objectives guiding the study and interview session held with 4 key informants from Maji Mashinani PPP. Interview session with key informants was held at Maji Mashinani PPP project on 17th December 2017 between 9.30 am-12.30 am. The use of in-depth interview technique allows an in-depth understanding of the topic under study by facilitating one on one conversation with the respondents. It also allows triangulation of findings by complementing quantitative data collected via questionnaire.

3.7 Data Collection Methods and Procedures

Leavy (2015) define data collection procedure as the precise, systematic gathering of information relevant to the research sub-problems. The study employed semi-structured questionnaires. Questionnaires were self-administered to household heads

in persons at Soweto Kayole Area. Marshall and Rossman (2014) point out that, questionnaires are appropriate for studies since they collect information that is not directly observable as they inquire about feelings, motivations, attitudes, accomplishments as well as experiences of individuals.

3.8 Pilot Study

A pilot is a small study preceding the actual study. The pilot test is conducted to detect weaknesses in design and instrumentation and to provide proxy data for the selection of a probability sample (Cooper & Schindler, 2011). A pilot test is conducted to test for reliability and validity of the data collection instruments. In ascertaining reliability test, a pilot test was conducted at Kibera informal settlements. In 2012, the public-private partnership water project was set up in Kibera supported by the government of Kenya and the World Bank. The respondents who participated in the pilot study were not included in the final study.

3.8.1 Reliability

Reliability is the consistency of measurement or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects (Cronbach, 1951). Reliability refers to the repeatability, stability or internal consistency of a questionnaire. The study used the test-retest method, which involves administering the same scale or measure to the same group of respondents at two separate times. Shuttleworth and Wallace (2009) argue that in the test-retest method, the instrument is administered at two different times, and then the correlation between the two sets of scores is computed. The time-lapse for the set-reset method for this study was one week.

3.8.2 Validity

Validity refers to whether a questionnaire is measuring what it purports to measure (Heale & Twycross, 2015). Validity is the accuracy and meaningfulness of inferences, which are based on the research results. Validity exists if the data measure what they are supposed to measure (Joppe, 2010). It describes validity as the degree of congruence between the explanations of the phenomena and the realities of the world. While absolute validity is difficult to establish, demonstrating the validity of a developing measure is very important in research (Leung, 2015). Content validity was obtained through thorough discussions with the supervisors who are research experts, to ascertain the validity of the instruments.

Validity was enhanced by engaging the study with water experts at Nairobi water and sewerage Company. Both construct and content validity were used in this investigation. The questionnaire was separated into numerous sections for construct validity to ensure that each segment examined information for a specific aim and had the same close linkages to the study's conceptual framework.

The questionnaire was thoroughly scrutinized by water specialists at Nairobi Water and Sewerage Company to verify content authenticity. They were asked to assess the questionnaire's statements for relevance. The instrument was changed suitably based on the evaluation before the final data collection exercise. Their feedback was used to verify that content validity was improved.

3.9 Data Analysis Techniques and Procedures

Data analysis refers to the application of reasoning to understand the data that has been gathered to determine consistent patterns and summarize the relevant details revealed in the investigation. The data gathered were both quantitative and

qualitative. The qualitative data collected using the interview guide was analyzed using content analysis. Content analysis is watchful, point by point efficient assessment and understanding of the written document, with a view of identifying pattern, themes and meanings. Interview responses were analyzed thematically, presented in a narrative and prose, compared and triangulated with quantitative results to conclude.

The quantitative data collected using questionnaire was analyzed using SPSS software. The statistics generated included descriptive statistics and inferential statistics. The specific descriptive statistics included frequencies, mean scores and standard deviation. The inferential statistic was in the form of regression analyses was employed to determine the relationship between public-private partnership strategy and water service delivery at Soweto Kayole Area. The multiple regression model estimated was;

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon}$$

Where;

Y = Water sevice delivery

X_1 = PPP implementation

X_2 = Viability of PPPs

X_3 = Challenges in the implementation of PPPs

In the model, β_0 = the constant term while the coefficient β_i = 1….3 was used to measure the sensitivity of the dependent variable (Y) to unit change in the predictor variables X_1, X_2,and X_3. The error (ϵ) term captures the unexplained variations in the model. The analysis of variance (ANOVA) was employed to reveal the overall model

significance. A critical p-value of 0.05 was used to determine whether the individual variables are significant or not. Results were presented using tables and figures.

In-depth interviews were conducted with the 4 experts to gain a deeper understanding of their experiences and perspectives. The interviews were recorded and transcribed into scripts. The transcripts were then analyzed using Dedoose, a qualitative data analysis software. Dedoose was used to identify recurring themes, patterns, and connections in the data. This analysis process allowed for a rich and nuanced understanding of the participants' experiences.

3.10 Ethical Consideration

Ethical considerations related to the moral standards that the researcher should consider in all research methods in all stages of the research design (Basit, 2013). Studies used in this study were cited appropriately to avoid plagiarism. Plagiarism level was checked, and a report attached to confirm the originality of the study. The participants in the study were asked for their consent before taking part in the study. Consent letter and Ethical Review Committee (ERC) form was sought from the university before actual data collection.

Research Permit and authorization was sought from NACOSTI and Nairobi City County Ministry of Water and Sanitation. All responses were treated confidentially, and anonymity of respondents was observed. There were no study participant’s identifiers like names that would link the participant to any data instead study numbers were created and coded information used. Only the study participants and the researcher had access to the data.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Overview

The chapter presents the outcome of the study. The three components discussed include the presentation of data, analysis of data and interpretation of data.

4.2 Response Rate

The study targeted 100 household respondents, out of which 80 households participated in the filling of questionnaires, contributing to the response rate of 80%. Mugenda and Mugenda (1999), that a response rate of at least 50% that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good, and a response rate of 70% and over is excellent. Moreover, all the key respondents (4) participated in the research, therefore achieving a 100% response rate. The data collected can therefore be considered accurate and reliable.

4.3 Demographic Characteristics of Respondents

This demography (age, gender and occupation) section was valuable in accurately describing the characteristics of the targeted population. The age of the population ascertained whether the respondents were economically active and able to influence budgeting for household needs. For instance, water and gender distribution revealed women were responsible for household management and therefore having an influence on water usage. The occupation of the respondents revealed the different ways in which water is used and therefore insight into water service delivery.

Further to this, the study sought to find out whether the household respondents were residents of the area to ensure the reliability of the data collected. 100% of the

respondents were residents of Kayole, Soweto. Therefore, the information about PPP water service delivery in the area.

4.3.1 Gender distribution in respondents

Therefore, having most of the respondents as women were instrumental in acquiring clear-cut answers. Table 4.1 illustrates the distribution of gender in the participants engaged during the study.

Table 4.1: Gender distribution of the respondents

Gender	Frequency	Percentage
Male	32	40
Female	48	60
Total	**80**	**100**

Source: Author (2019)

The study found out that the majority (60%) of the respondents were women, while the minority (40%) of the respondents were male. Moreover, it was observed that women are tasked with household chores, and water acquisition is a backbone of efficient housekeeping. Water insecurity weakens the ability of social protection to promote gender equality and female empowerment. The burden of water collection and lack of water facilities can restrict female participation in some types of social protection programs and the education and employment opportunities, they aim to promote. Water insecurity also undermines social protection efforts to promote health, nutrition and food security. Women, therefore, should be involved at all levels of programming in water promotion in these settlements to improve the population's well-being. According to Angoua, Dongo, Templeton, Zinsstag and Bonfoh (2018) women play an important role of women in ensuring access to clean water in these specific environments.

4.3.2 Respondents' age distribution

The study collected data based on age due to the role it plays in decision making.

The researcher was keen on collecting data based on age due to the influence it has on decision making. This is especially the case due to the gap in experience between the younger and older age groups.

Table 4.2 represents the age distribution in the respondents. The majority (52%) were between 21-35 years; a quarter were 36-50 years, 18-20 years and 66 and above years each attributed to a twentieth of the total respondents while there was no record of any respondents below the age of 18.

This illustrates that the majority of the respondents were adults who engage in income-generating activities. These respondents were either members of a household or heads of households with an understanding of the impact of PPP on water service delivery in their households as well as an ability to make informed decisions as shown in Table 4.2.

Table 4.2: Respondents' age distribution

Age cohort	Frequency	Percentage
Bellow 18 years	0	0
18 - 20 years	4	5
21 - 35 years	42	52.5
36 - 50 years	20	25
51 – 65 years	10	12.5
66 years and above	4	5
Total	**80**	**100**

Source: Author (2019)

4.3.3 Occupation categories of respondents

The study investigated the occupation of respondents in student, homemaker, employed for wages, self- employed, unemployed and retired categories.

This would accurately give information on who the main beneficiaries are, and the alternative ways water service delivery is used in the area.

Knowledge on the occupation of respondents is vital as it gives an accurate estimate of the level of incomes as well as identify whether there are other uses for water apart from household chores as illustrated by figure 4.1

Figure 4.1: Occupation of respondents
Source: Author (2019)

According to figure 4.1 majority (63%) of the respondents are self-employed and have their business within Soweto area 15% of the respondents are employed out of Soweto area 8% being homemakers, 9% were unemployed and a minority twentieth (5%) are retired. This would imply that the main beneficiaries of the project are self-employed with their businesses in the area. Therefore, not only do they use water for their household needs but also in their businesses, increasing the frequency and quantity of water use in a given period. These households from a group of key beneficiaries who are most interested in and affected by the success or failure of the PPP project. The results agree with Kajimo-Shakantu, et al. (2014) that occupation of

persons determines the level of income and their ability to access water services. Likewise, the results agree with Frone and Frone (2018) who noted that persons with low paying occupation in the informal settlements have a problem of accessing safe and adequate water.

4.3.4 Training on PPP and number of years of work of key respondents

The study established that 50% of the household heads had undergone training on Public-Private Partnerships, while the other 50% learned about PPPs through work experience. On the other hand, 25% of the respondents had 6-8 years working experience in PPP related projects, while the remaining 75% had 3-5 years of experience. This shows that majority of the respondents were knowledgeable on PPPs and had experience working with them. The results agree with Buabeng (2015) training on public-private partnership contracts may enhance the performance of PPPs in the water sector and thus enhance water accessibility.

4.4 Implementation process of PPPs in water service delivery in urban areas in Kenya

This study found out that in the realization of set objectives by PPPs in water service delivery, the implementation process of PPPs is critical. The implementation of PPPs involves identifying candidate projects and managing the project. A good PPP for this matter will be a project that is cost-benefit justified with a value for money and fiscally responsible. According to the report, successful PPP programs go through constant and rigorous screening during their development stages. The preparation stage is broken into intensive and expensive phases that guarantee continues achievement of the set criteria. This is a result of the activities throughout the PPP life

cycle being dependent on each other. Information collected from the experts pointed out that several key aspects of the implementation process were recurrent.

The experts were knowledgeable on the different types of PPPs, with a good number (40%) of the respondents being familiar with Out Based Model, 30% confirmed to know about Build Operate Own and Transfer, 20% familiar with Build Own Transfer while the minority (10%) had knowledge Lease model.

The findings established that Output-Based Aid (OBA) would be the best alternative model in service delivery for urban areas of a developing country like Kenya as it is designed as a pro-poor intervention hence most favourable model in water service delivery for urban areas in Kenya, especially slum and settlement areas such as Kayole, Soweto. This implies that the OBA PPP model would be more effective as a strategy in water service delivery for urban areas.

Data collected from the experts indicated varying degrees of familiarity on the various types of PPPs. It was established that 75% were familiar with all having worked on them in the region such as Uganda, Tanzania, Egypt, and Algeria 25% were familiar with Output-based aid (OBA), build, own, operate, transfer (BOOT), Build–operate–transfer (BOT) and not lease. This elaborates the different circumstances and conditions present in a country favouring the interaction between public and private sector in water projects. Some of the key issues arising in the implementation of PPP projects in water service delivery were Stakeholder management; the process of PPPs; risk analysis and mitigation. The results agree with Abubakari, Buabeng and Ahenkan (2013) undertook a study titled implementing public-private partnerships in Africa for urban water service delivery in Ghana and found that implementation ambiguities

translated into delays in the implementation process of PPPs in the water sector. The results also agree with Bruchez (2014) who investigated public-private partnerships (PPPs) in South Africa and established that too few large-scale infrastructure projects are implemented through PPPs and in sectors that are not considered as ideal according to the literature.

4.4.1 Level of familiarity with PPP models for water service delivery

The knowledge and familiarity with different PPP models by key respondents were essential to establish that they could give accurate recommendation for the best model to be used in water service delivery for urban areas in Kenya.

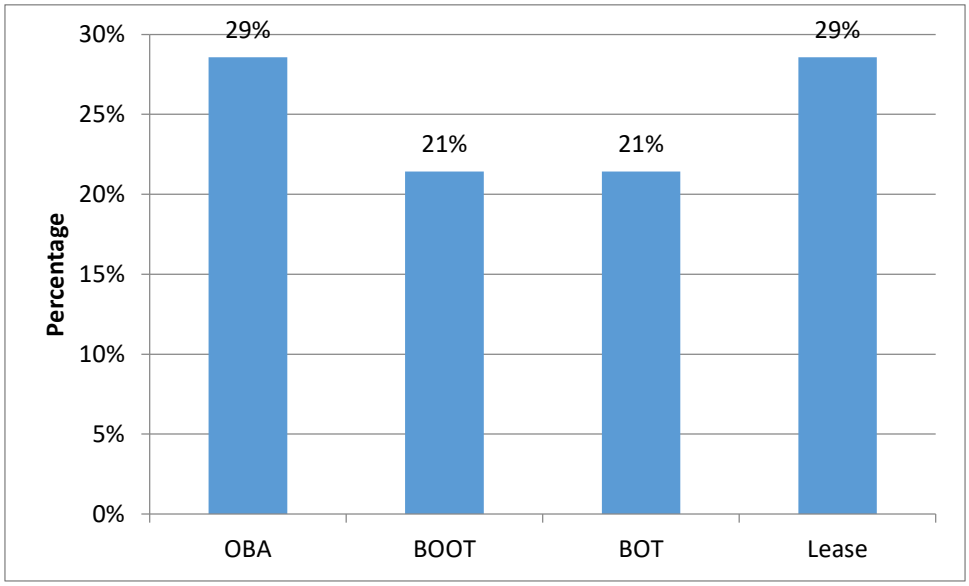


Figure 4.2: Level of familiarity with PPP models for water service delivery
Source: Author (2019)

The study established that the majority (29%) of the key respondents was more familiar with the Output-based aid (OBA) and lease models compared to build, own, operate, transfer (BOOT) and Build–operate–transfer (BOT) models. This would therefore imply that the key respondents are familiar with all PPP models and have more knowledge and expertise on OBA and Lease models in water service delivery.

According to Van Dijk (2008), Public-Private Partnerships frequently used concession contracts (a long-term right to extract a natural resource on behalf of the government) and occasionally included a Build Operate Transfer (BOT) contract to ensure the required investments.

4.4.2 Most suitable PPP model for water service delivery for urban areas in Kenya

PPPs in the water sector exist in various models/types. Identifying the most suitable PPP model is essential in achieving the desired results in water service delivery in a cost-effective way. With prior knowledge and expertise on PPP models of key respondents in the water sector, the key respondents concluded that the OBA model is most suitable for water service delivery for urban areas in Kenya.

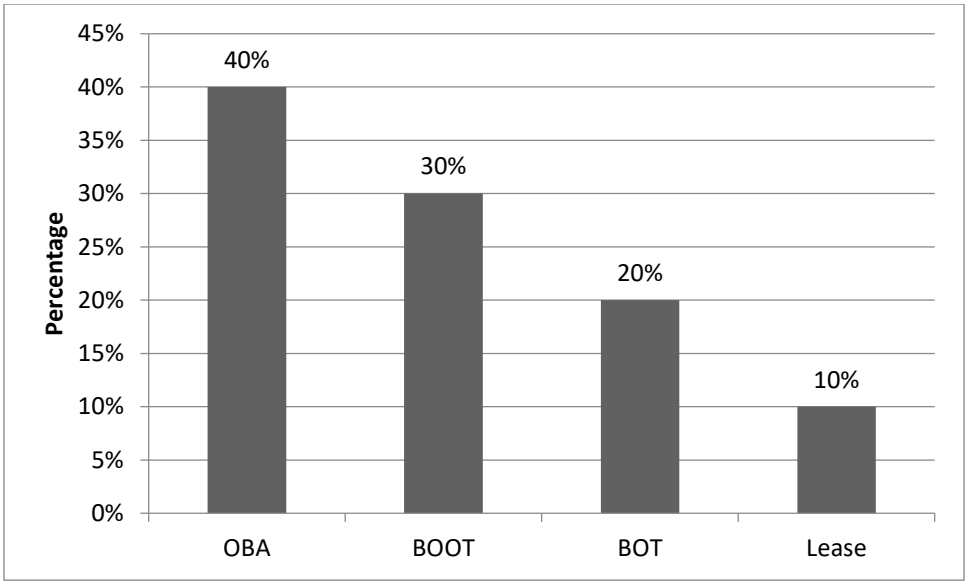


Figure 2.3: Most suitable models for water service delivery.
Source: Author (2019)

The study found that the OBA was the most favored while Lease model was least favored when using PPPs for water service delivery for urban areas in Kenya. It would, therefore, imply that OBA as a model would best achieve effective and

efficient results in water service delivery for the population in urban areas, in Kenya. The results agree with Obosi (2017) who investigated the impact of public-private partnership on water service delivery in Kenya and found that OBA is the public-private partnership strategy compared to BOOT. The results, however, contrast Mfunwa, Taylor and Kreiter (2016) who investigated public-private partnerships for social and economic transformation in Southern Africa and established that BOT is the public-private partnership strategy compared to OBA.

4.4.3 Criteria to determine if a project is suitable for a PPP strategy.

The respondents highlighted factors used as criteria to determine the suitability of a project for PPP strategy. These factors included expertise (100%), budget (75%), risks, and mitigation measures (75%). In an interview with PPP experts, one KII noted,

> *"…*effective PPPs take time to establish and then yield results. For PPP to be successfully initiated and implemented, the presence of a conducive and enabling legal and regulatory framework is a critical prerequisite*"* PPP experts 1 [Key Informant, 2018]

Often, projects that have a large budget that the government cannot independently fund due to financial constraints are considered for PPP partnership to undertake the project. The Private partner provides part of/ the much-required funds to ensure that the project goes through its life cycle smoothly. The results agree with Kajimo-Shakantu, Kavela and Shakantu (2014) who investigated applicability and constraints of delivering water infrastructure via a public-private partnership and indicated that institutions do not allocate sufficient budget towards new water infrastructure development and maintenance.

Due to the complexity of specific projects and the lack of expertise in handling the project, the government is considering a PPP arrangement, with a keen interest in the skills/specialization of the potential private partners. This could also include the ability of the private party to utilize more modernized and effective technology to enhance quality in deliverables of the project. The results agree with Frone and Frone (2018) who looked on issues of efficiency for public-private partnerships in the water sector in Romania and established that the advisory team is one of success driver of PPP implementation. Likewise, Raunio (2016) who studied the successful implementation of public-private partnerships to local communities: Providing water supply services in Sub-Saharan Africa established that expert input is important in enhancing PPP implementation.

With projects come risks. However, big and complex projects might have more complex risks which the government might not have the ability to mitigate properly. Such projects then might be considered as potential PPP projects, with a focus on a private partner who has previously worked on a similar project and might have effective mitigation measures in place. This would imply that PPPs are instrumental in filling the public agent's resource gap which is not limited to funds and external factors affecting the project lifecycle and the ability of the public agency to transfer some of the responsibility to the private party. Matji and Ruiters (2015) studied a conceptual framework for public-private partnerships model for water services infrastructure assets in the Limpopo and Gauteng provinces and identified various risks that affect PPP implementation, including technical/project risk, financial risk, contractual risk, skills and knowledge transfer, roles and responsibilities of state institutions, affordability and revenue flows, value for money, ownership of water services infrastructure assets. Frone and Frone (2018) also established that the risk of

falling demand and thus the risk of non-payment of charges for the water and wastewater services, because of the high rates and low affordability of the population, was common among poorly implemented PPPs.

4.4.4 Critical parts of the implementation process

The study investigated the vital parts of the implementation of a project. The major prevailing factors were Monitoring and evaluation (100%), stakeholder management (75%), continued risk and mitigation (75%) and resource mobilizing (50%). In an interview session key informant interviewee noted:

> *"…*successful PPP programs go through constant and rigorous screening during its development stages. The preparation stage is broken into intensive and expensive phases that guarantee continues achievement of the set criteria. The process involves identifying priority projects and screening them for the potentiality of being a PPP; developing and appraising successful projects; preparing draft PPP contracts; and managing the PPP transactions (marketing, checking bidders, evaluating proposals, and identifying and finalizing contract)*"* PPP experts 2 [Key Informant, 2018]

Constant monitoring and evaluation throughout the project are essential to ensure that the project is on the right path about setting milestones, timeframe, funds, resources as well as a lookout for unplanned for risks or shortcomings. This ensures that such concerns are dealt with promptly to avoid the project stalling. The results agree with Nwokorie (2018) who investigated public-private partnership coordination the case of Tanzanian Water Sector and found that Tanzanian Water Sector lacked any mechanism for monitoring and accountability to hold the government or private sector responsible and accountable for the project breach and failure. Also, according to Fombad (2013), accountability in PPPs will become effective if appropriate accountability structures and anti-corruption measures are in place, as well as effective mechanisms to ensure stakeholder consultation, transparent procurement

processes, open access to information, contract monitoring, and appropriate risk transfer. In an interview session:

> *"*...PPPs distribute the risks between the public and private sectors depending on the strength of each entity to handle certain risks and on the expectation that the private sector will assume substantial risks in its long -term engagement in delivering infrastructure and public services. Risk assessment in PPPs is a different exercise than the assessment of risk in traditional public contracts mainly because risks are shared in PPPs and the public entity can be able to focus on other things other than the infrastructural service delivery)*"* PPP experts 3 [Key Informant, 2018]

It is important to ensure that stakeholders identified are analyzed to keep track of any shift in interests. Similarly, communication between the project and the stakeholders should be treated as a priority so as to ensure that they perform efficiently on the responsibilities allocated to them. The results agree with Matji and Ruiters (2015) who noted that stakeholder engagement studies are critical in public-private implementation. According to Fombad (2013), if appropriate accountability structures and anti-corruption measures are put in place, as well as effective mechanisms to ensure stakeholder consultation, transparent procurement processes, open access to information, contract monitoring, and appropriate risk transfer, accountability in PPPs will become effective.

Despite risk identification and mitigation measures put in place before the implementation process, there could be emerging of new risks and therefore need for mitigation strategies to be put in place for the emerging risks. This ensures that the project activities in the implementation phase go according to plan to avoid time and budget overrun. The results agree with Matji and Ruiters (2015) who identified PPPs risks as technical/project risk, financial risk, contractual risk, skills and knowledge transfer, roles and responsibilities of state institutions, affordability and revenue flows, value for money; ownership of infrastructure; socio-political concerns/issues,

funds following functions, technology and innovation, and open and transparent procurement process. Lack of technical, management and legal capacity of municipalities make it difficult for public-private partnership models to be successfully implemented in local government. According to Frone and Frone (2018), because of the high rates and low affordability of the people, especially in rural regions, the risk of diminishing demand, and thus the potential of non-payment of charges for water and wastewater services, was noted.

Availability of resources (time, money, people) where and when needed is vital towards ensuring that the project implementation activities are carried out accurately and effectively to ensure quality in the set goals and reduce waste in these resources. This would, therefore, imply that the implementation process involves different parties who are key to the overall implementation process. The results agree with Raunio (2016) studied successful implementation of public-private partnerships to local communities in providing water supply services in Sub-Saharan Africa and established that lack of financial resources and human resources influences the implementation of public-private water programs.

4.4.5 Process of PPPs in Kenya

The process of PPPs varies from state to state because it is informed by policies, legal frameworks, funding procedures, as well as procurement processes. It is therefore important to identify and understand the process of PPPs in Kenya, specifically in the water sector. PPPs that work take time to establish and then produce results. A friendly and supportive legal and regulatory framework is a fundamental prerequisite for PPP to be successfully established and implemented (Tsitsifli & Kanakoudis, 2008). There will almost certainly be disagreements, and service delivery will be

delayed or degraded. A functioning legal and regulatory framework decreases opportunistic inclinations (Kuttner 1997), aligns partners' interests, and gives private partners trust by acting as a buffer against political meddling from government agencies (Frone & Frone, 2018).

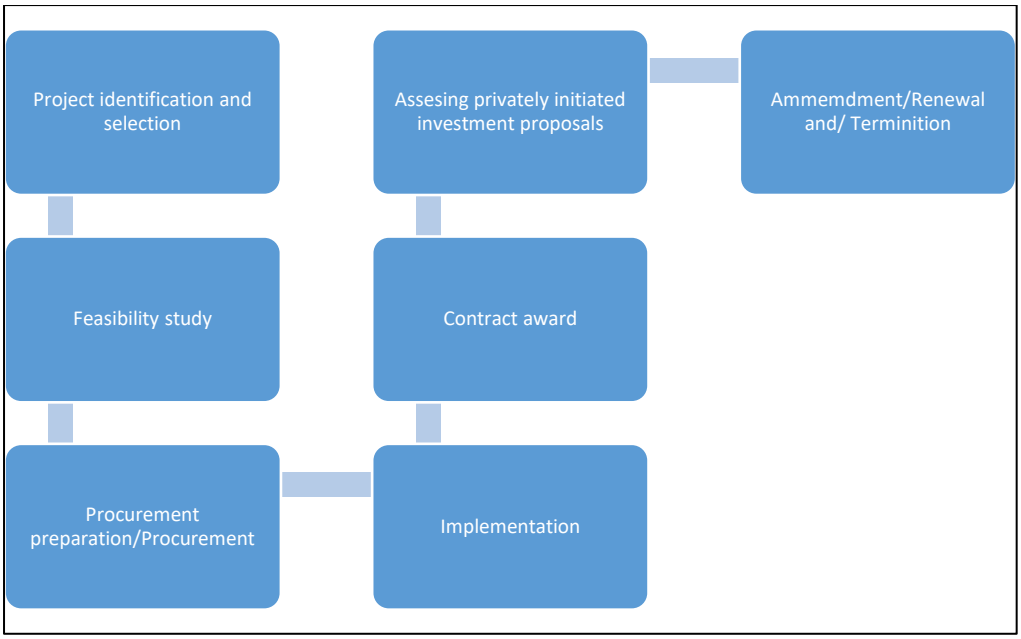


Figure 4.4: Process PPPs of in Kenya
(Source: Public-Private Partnerships' act, 2013)

The process above represents the steps of PPP projects in Kenya. Based on the findings of the study, the project begins with singling out a project from several other alternative projects and ends with amendment, renewal or termination of a project. The above highlight the main procedures for PPP projects in Kenya. Despite each stage involving different activities, they all contribute towards a successful PPP project. The implementation of PPPs involves identifying candidate projects and managing the project. A good PPP for this matter will be a project that is cost-benefit justified with value for money and fiscally responsible. According to Qian, House, Wu, and Wu (2020), the central government's steadfast pursuit of PPPs as a policy

instrument, water sector reforms, and local governments' excellent implementation are among the primary drivers driving China's spectacular expansion of PPP projects.

4.4.6 Stakeholder Management

Based on the findings, involving the different PPP stakeholders in delivering water services is crucial. This is due to the legitimacy and influence on the success or failure of the PPP project by the stakeholders. The stakeholders can be grouped into the public, government, labour, consumers, special interest groups, potential suppliers of goods and services, investors, transaction advisers as well as the media. This, therefore, highlights the diversity in interests and values of stakeholders and the roles they play towards the success of PPPs, not only in the water sector but in all sectors.

Identifying stakeholders is one of the major steps for informing the stakeholder management process. This has a great impact on how effective the PPP project life cycle would be as well as its efficiency in meeting the desired goals and targets. The findings emphasized the importance of acknowledging the existence of different levels of stakeholder management. This would ensure that the stakeholders most affected by the project are involved more compared to those who are indirectly affected by the project. This would go a long way towards delivering the desired output effectively.

Method of stakeholder management was highlighted to be vital to the success of the PPP projected. This step includes analyzing what information stakeholders have regarding the project, where they get their information, and how accurate these sources are. It also involves coming up with a good communication mechanism between the stakeholders and the project and how to do so promptly. The results agree with Matji and Ruiters (2015) who noted that stakeholder engagement studies are

critical in public-private implementation. According to Fombad (2013), if appropriate accountability structures and anti-corruption measures are put in place, as well as effective mechanisms to ensure stakeholder consultation, transparent procurement processes, open access to information, contract monitoring, and appropriate risk transfer, accountability in PPPs will become effective.

4.4.7 External risks to the PPP projects and the mitigation process

Similar to partnerships and projects, the PPPs encounter risks that determine how successful a project is. The risks and mitigation responsibilities are shared between the partners based on which partner is best placed to handle certain risks in the water sector in Kenya. It is vital to identify the common risks that come with PPPs and the partner (public or private) that is charged with the responsibility of dealing with these risks.

Table 4.3: Risks and mitigation process

Respondent Percentage	Risks	Risk Allocation	Mitigation Measures
50%	Foreign Currency value fluctuation.	Government	Create a fund from taxpayer revenue.
50%	Competition from other service providers.	Government	Conducting an accurate baseline survey.
75%	Political instability	Government	Cultivate project legitimacy with the stakeholders.
25%	Demand alternative	Government	Estimate yearly consumption with the rainy season in mind.
50%	Maintenance and operation	Donor	Constant monitoring and evaluation.
75%	Funding	Donor	Having a functional operational account.
75%	Design and construction	Donor	Capacity Development

Source: Author (2019)

In the study, there was a range of external risks identified by the experts. However, the above mentioned were identified. They included: foreign currency value shift, competition from other service providers, political instability, demand alternative, maintenance and operation, funding, and design and construction. The results agree with Matji and Ruiters (2015) who studies conceptual framework for public–private partnerships model for water services infrastructure assets in the Limpopo and Gauteng Provinces and identified various risks that affect PPP implementation that include technical/project risk, financial risk, contractual risk, skills and knowledge transfer, roles and responsibilities of state institutions, affordability and revenue flows, value for money; ownership of infrastructure; socio-political concerns/issues, funds following functions, technology and innovation, and open and transparent procurement process. Frone and Frone (2018) also established that the risk of falling demand and thus the risk of non-payment of charges for the water and wastewater services, because of the high rates and low affordability of the population, was common among poorly implemented PPPs.

4.5 Viability of PPPs in water service delivery in urban areas in Kenya

4.5.1 Benefits of PPPs as Strategies in water service delivery in urban areas in Kenya

The study examined the benefits of exploring PPPs as strategies in water service delivery in urban areas, and the following merits prevailed from the respondent's view; filling the resource gap (100%); risk transfer and mitigation (100%); customizable PPP models (25%); Economic growth (75%). The results agree with Matji and Ruiters (2015) who studies a conceptual framework for public-private partnerships model for water services infrastructure assets in the Limpopo and

Gauteng Provinces and identified various risks that affect PPP implementation that include technical/project risk, financial risk, contractual risk, skills and knowledge transfer, roles and responsibilities of state institutions, affordability and revenue flows, value for money; ownership of infrastructure; socio-political concerns/issues, funds following functions, technology and innovation, and open and transparent procurement process. Frone and Frone (2018) also established that the risk of falling demand and thus the risk of non-payment of charges for the water and wastewater services, because of the high rates and low affordability of the population, was common among poorly implemented PPPs.

Owing to the limitation of resources and the diverse needs faced by governments, especially in service delivery, PPPs play an important role in filling that gap. PPPs often provide these resources in the form of funds, expertise, machinery and technology, to ensure the objective is met and in an effective way. Public-Private Partnerships can provide several specific benefits to the public sector. They can provide cost-effective solutions where the PPP can achieve lower prices, improved levels of service through innovation, and lower risk for the public sector (Bovis, 2010). The findings support those of Ndandiko (2016), who looked at public-private partnerships as a mode of procuring public infrastructure and service delivery in developing countries and found that in the absence of strong public and/or private sector institutions and an adequate framework, a haphazard introduction of PPP in local governments could worsen infrastructure and service delivery, making it unlikely to benefit the public client.

Through PPPs, the government can share the burden of managing risks with the private partner. In this partnership, risks are divided based on the ability of each

partner to manage these risks. Frone and Frone (2018) also established that the risk of falling demand and thus the risk of non-payment of charges for the water and wastewater services, because of the high rates and low affordability of the population, was common among poorly implemented PPPs. The results agree with Matji and Ruiters (2015) who studies a conceptual framework for public-private partnerships model for water services infrastructure assets in the Limpopo and Gauteng Provinces and identified various risks that affect PPP implementation that include technical/project risk, financial risk, contractual risk, skills and knowledge transfer, roles and responsibilities of state institutions, affordability and revenue flows, value for money; ownership of infrastructure; socio-political concerns/issues, funds following functions, technology and innovation, and open and transparent procurement process.

Despite the requirement of PPPs to meet the standards put forward by PPP act 2016, the choice of PPP model can be tailored to fit the scope of the project, type of stakeholders, problem to be solved, amount of funds needed and available as well as the environment in which the project is taking place. This enhances the effectiveness of the project in meeting the goals set. This would therefore imply that the key respondents are familiar with all PPP models and have more knowledge and expertise on OBA and Lease models in water service delivery. According to Van Dijk (2008), Public-Private Partnerships, often concerned concession contracts (a long-term right to extract some natural resource on behalf of the government) and sometimes had a Build Operate Transfer (BOT) contract added to it to assure the necessary investments.

Through stable infrastructure in the sector, PPPs ensure reliability on service delivery and quality of this service, which can be used to enhance various economic activities linked to the service being delivered. This would insinuate that PPPs as strategies are very effective in ensuring efficient and quality delivery of water services in the urban areas, and as a result, not only enhances urban but national development that is sustainable. According to Frone and Frone, (2018) economic risk is jeopardizing the efficiency of the water companies and normally does not foster the creation and development of some forms of PPPs for the much required and needed development of the water supply. Also, Raunio (2016) noted that water scarcity is an on-going challenge that will continue to affect the globe. However, it is a challenge that modern economies can answer if common interest is achieved. In many areas, water scarcity is more of a socio-economic problem than a lack of water resources.

4.5.2 Determinants of success of PPPs in water service delivery for urban areas in Kenya

The key informants highlighted the following factors as the prevailing factors determining the success of PPPs in water service delivery; Clear set goals (100%), Stakeholder management (100%), clearly defined roles and responsibilities (75%), and return on investment (25%).

The goals set should be specific, measurable, accurate, realistic and timely. Therefore, the milestones of the project should be in line with these characteristics for effectiveness. The goals should be broken down into much smaller activities to ensure efficient monitoring and evaluation throughout the PPP project. An efficient and effective policy framework, which consists of a legal and institutional framework, is an attractive factor for the private partners in a PPP arrangement. These authors are

also of the thought that a clear policy framework is instrumental in ensuring that all the involved parties have a good grasp of the PPP process. The results agree with Rostiyanti and Tamin (2010) that the successful implementation of PPs translates to the achievement of the desired goals of the partnership.

The goals set should be specific, measurable, accurate, realistic and timely. Therefore, the milestones of the project should be in line with these characteristics for effectiveness. The goals should be broken down into much smaller activities to ensure efficient monitoring and evaluation throughout the PPP project. The results agree with Matji and Ruiters (2015) who noted that stakeholder engagement studies are critical in public-private implementation. According to Fombad (2013), if appropriate accountability structures and anti-corruption measures are put in place, as well as effective mechanisms to ensure stakeholder consultation, transparent procurement processes, open access to information, contract monitoring, and appropriate risk transfer, accountability in PPPs will become effective.

To ensure accountability, the duties and responsibilities of both the public agent and the private actor should be explicitly outlined in a contract. This also reduces conflict between the two parties throughout the project's lifecycle. Matji and Ruiters (2015) studied a conceptual framework for public-private partnerships model for water services infrastructure assets in the Limpopo and Gauteng provinces and identified various risks that affect PPP implementation, including technical/project risk, financial risk, contractual risk, skills and knowledge transfer, roles and responsibilities of state institutions, affordability and revenue flows, value for money, ownership of water services infrastructure assets.

Before the project begins, the rate at which the private party recovers its interest should be agreed upon. This enhances transparency in expectations for both parties. Often return on investment is done through agreed tariffs between the public agent and public partner. The roles and responsibility of both the public agent and the private actor should be clearly defined in a contract to ensure accountability. This also minimizes conflict between the two parties during the lifecycle of the project.

Accurate identifying of stakeholders is key in ensuring the monitoring and evaluation of respondents' interests and values to ensure that they stay involved in the project. Managing communication channels and alternatives to the channels to be used ensures that accurate information is circulated and that effective decisions are made. The results agree with Matji and Ruiters (2015) who noted that stakeholder engagement studies are critical in public-private implementation. According to Fombad (2013) accountability in PPPs will become effective, should appropriate accountability structures and anti-corruption measures be put in place, and should effective mechanisms to assure stakeholder consultation, transparent procurement processes, open access to information, contract monitoring and appropriate risk transfer be activated.

4.5.3 Factors contributing to an effective and efficient policy framework.

The study investigated the factors contributing to the effective policy framework for PPPs as strategies in water service delivery for urban areas in Kenya. The prevailing factors were Roles and responsibilities (100%), stakeholder support (75%), specific and discrete (75%) quality of policies (75%) and adequate funding (50%),

Clearly defined roles between actors by the policy framework are critical in Public-private partnerships. This ensures that there is no overlapping of duties between

parties and therefore promotes accountability and efficiency. The results agree with Matji and Ruiters (2015) who identified PPPs risks as technical/project risk, financial risk, contractual risk, skills and knowledge transfer, roles and responsibilities of state institutions, affordability and revenue flows, value for money; ownership of infrastructure; socio-political concerns/issues, funds following functions, technology and innovation, and open and transparent procurement process. According to Frone and Frone (2018) looked on issues of efficiency for public-private partnerships in the water sector in Romania and identified the risk of falling demand and thus the risk of non-payment of charges for the water and wastewater services, because of the high rates and low affordability of the population, especially in the rural areas.

The framework designed to govern PPPs should be supported by the relevant institutions, agencies and administrative policy. This ensures that it is used as a reference point in guiding PPPs on different projects as well as having standards by which the PPPs should operate on. The results agree with Nwokorie (2018) investigated public-private partnership coordination in the case of Tanzanian Water Sector. The study utilized qualitative methodology to review secondary data on the failed Dar es Salaam Water and Sewerage Authority of Tanzania and City Water Services and noted that management did not provide a window for dialogue with stakeholders on relevant issues capable of attracting opposition. Also, Fombad (2013) noted that accountability in PPPs will become effective, should appropriate accountability structures and anti-corruption measures be put in place, and should effective mechanisms to assure stakeholder consultation, transparent procurement processes, open access to information, contract monitoring and appropriate risk transfer be activated.

The policies should generate data that is a result of primary research. This ensures that there is accurate monitoring and evaluation as well as decision making to ensure efficiency. As a result, the policies developed should offer transparency in implementation and reliability in results. The working policy framework should be because of a thorough study of existing issues in the sector, comparison of policies existing in similar nations and addressing similar issues to accurately come up with an effective approach that would be efficient for the specific state, sector and addressing the identified issues. The findings support Obosi's (2015) assertion that public institutions that have increased private sector engagement have outperformed those that have not, implying that the more the public-private sector collaboration, the higher the quality of public service delivery. Participation in PPP implementation, according to Asare and Frimpong (2013), will allow customers to see how pricing and service quality will be influenced, the level of service they may expect, and their rights under the partnership agreement. Consumers will also be able to communicate their concerns and complaints regarding service delivery through participation frameworks.

Funding of monitoring and evaluation processes for these policies is essential in ensuring that the framework is relevant, the implementation is effective, reliability of the policy by the relevant stakeholders and that it meets the expectations it is set to. This would, therefore, include systems to be used in coordination, control as well as oversight. The results agree with Kajimo-Shakantu, Kavela and Shakantu (2014) who investigated applicability and constraints of delivering water infrastructure via a public-private partnership and identified funding, institutional capacity and skills have been identified as hindering the water supply infrastructure development.

4.5.4 Measurement of Water service delivery

For the study viability of water service delivery is measured by three parameters.

4.5.4.1 Efficiency

To measure the efficiency of water service delivery, the research focused on the tools used in monitoring the use of water, as well as the reliance of this tool in ensuring that the meters are reliable as well as ensure water delivery is up to standard.

Table 1:4: Presence of meters in households/plots

Category	Frequency	Percentage
Yes	61	76
No	19	24
Total	**80**	**100**

Source: Author (2019)

The majority of the respondents have meters installed. This would, therefore, mean that water services are accounted for and can be monitored. This, therefore, enhances the reliability and effectiveness of the monitoring process and decision making based on the findings. Efficient and effective provision of public services and goods is problematic in many societies and countries. According to Leigland (2018), the state lacks the capacity and resources to deliver public goods and services solely. Thus, the private sector is drawn upon through myriad means to supplement the provision of certain services and goods to the people.

4.5.4.2 Frequency of Meter reading

The researcher sought to investigate the consistency of the meter reading, using the intervals of once a month, twice a month, once after installation, not aware and never, as illustrated by figure 4.5.

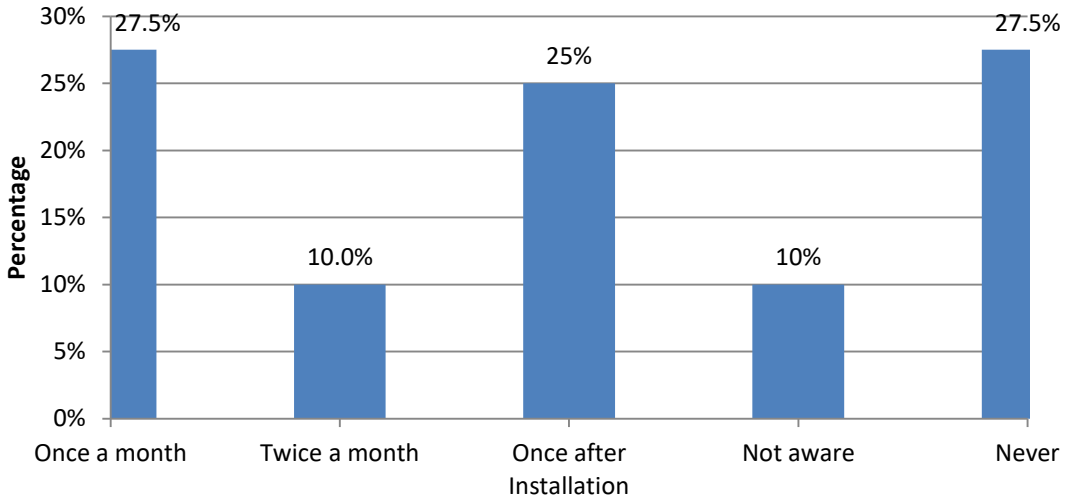


Figure 4.2: Frequency of meter reading

Source: Author (2019)

From figure 4.5, there is no uniformity in the number of times the meter is read in a month. Most respondents (28%) reported that their meter was only read once and never followed by once after initial installation and lastly the minority (10%) twice a month and not aware of how often the meter reading was done. This would, therefore, mean that some of the consumers pay more often compared to others. It also would mean that the monitoring of water service delivery would not be reliable and conclusive. The findings support Isoke and van Dijk's (2014) findings that access to drinking water in developing-country urban informal settlements remains a difficulty for the poor and is dependent on the technology used.

4.5.4.3 Meter reading responsibility

The study found out that majority of the meter reading is done by Nairobi Water and Sewerage Company (99%) and the minority (1%) done by the respondents and forwarded to the company through mobile phone.

This implies that Nairobi Water and Sewerage Company does most of the work in managing meter readings for the beneficiaries. Further to this, it would mean that they can accurately and effectively keep track of water service quality and standards and consequently, issues arising with the water service delivery.

4.5.4.4 Meter reading and bill correspondence

The study examined the relationship between the meter readings and the amount of money quoted by the water bill. The majority (53%) of the respondents did not agree with the bill generated from the reading, a quarter of the respondents agreed while the minority (11%) were either not aware or did not have a meter in place as illustrated by figure 4.6.

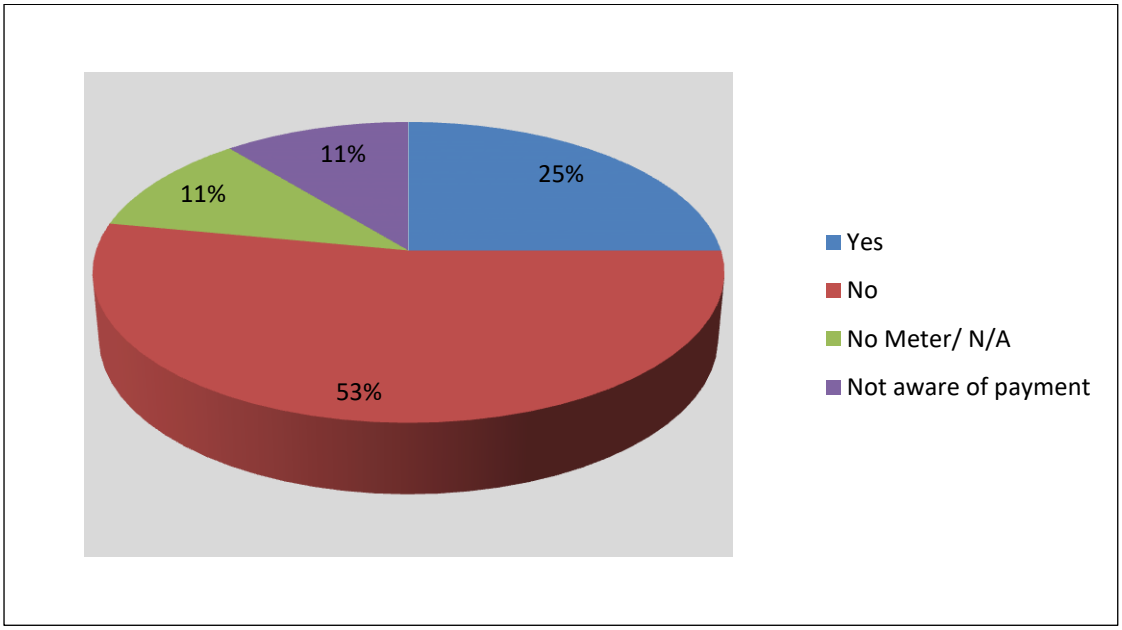


Figure 4.6: Respondents' views on meter reading and bill correspondence
Source: Author (2019)

There is a lack of consistency in the correspondence of the meter reading and charges from the respondents. This would illustrate that there is a high possibility that most of the beneficiaries are not satisfied with the water service delivery, due to unmatched cost and meter reading. Lack of meters for some of the beneficiaries would mean that

water use, and the cost is not accounted for and therefore inefficient. Not knowing the cost of water would mean that the beneficiaries might not appreciate the benefit of PPP water service delivery or play a role in cost efficiency monitoring.

4.5.5 Quantity

4.5.5.1 Frequency of water supply in a week

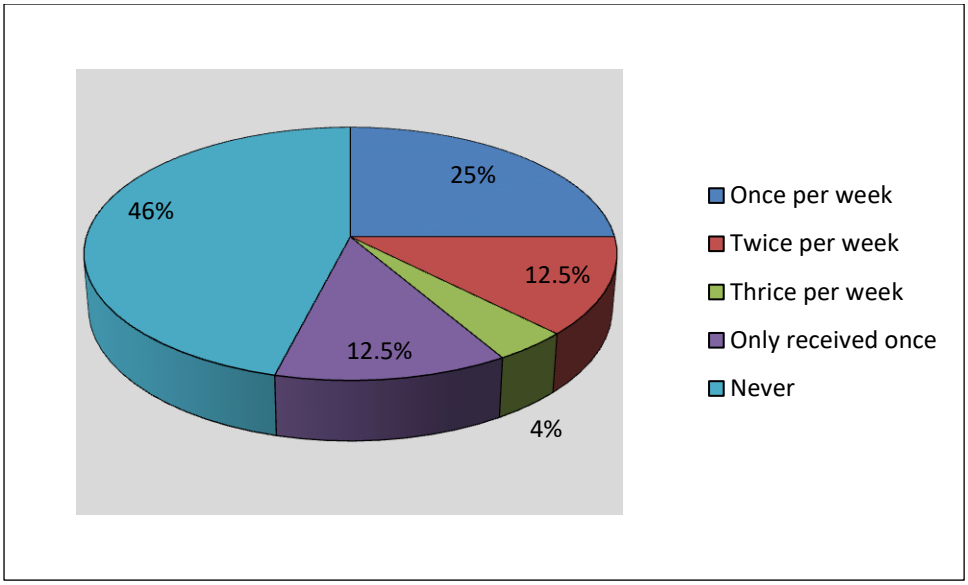


Figure 4.7: Frequency of water supply in a week

Source: Author (2019)

From figure 4.7, most of the respondents report to never receiving water since the implementation of the PPP project, while a quarter of the respondent's report having only been supplied water once, and the rest once, twice and thrice a week. The supply of the service is not standardized therefore, lack of equality in benefit from water service delivery project.

> "I have not received water since the project was implemented, and it pains me to know that the adjacent plot receives water a few times a week. Why then do I pay the standard charge which is included in my rent if I have to use extra money to buy the hard and salty water from the water vendors?"

4.5.5.2 Consistency in water service delivery

The majority (66%) of the respondents did not find the water service delivery consistent while only 34% were confident about the consistency as illustrated by Table 4.6.

Table 4.5: Respondents' view on the consistency of water service delivery

Category	Frequency	Percentage
Yes	27	34
No	53	66
Total	**80**	**100**

Source: Author (2019)

From Table 4.5, it can be concluded that the PPP project is not very reliable to its beneficiaries and could mean that the project has not met its objectives in providing an adequate amount of water.

4.5.5.3 Adequacy in the amount of water supplied for household use.

A greater part of the respondents (79%) was of the view that water supplied was not adequate, while 21% were contented with the amount of water supplied about their household chores. This would, therefore, mean that most of the households look for alternative means to meet the gap left by what the project is intended to deliver. This would conclusively mean that the beneficiaries would incur more cost on top of the standard monthly charges having to look for other options, such as buying water from the vendors to ensure that they have an adequate amount of water to carry out different activities which use water. Adequacy and quality of water are evaluated by monitoring programs put in place (OECD, 2009). The results agree with Isoke and van Dijk (2014) that access to drinking water in urban informal settlements of developing countries remains a challenge for the poor and depends on the technology selected.

4.5.5.4 Utility of water other than for the household purpose

The study investigated the alternative uses of water by the residents of Soweto Kayole to determine the level of demand for water services in the area. The majority (62.5%) did not limit the use of water on house chores only, while 37.5% only used water for household chores.

Table 4.6: Utility of water other than for the household purpose

Category	Frequency	Percentage
Yes	50	62.5
No	30	37.5
Total	**80**	**100**

Source: Author (2019)

Table 4.6 illustrates that water is mainly utilized for household purposes, which include cooking, drinking, bathing, cleaning, and flushing the latrine. Other minor uses include using the water for other purposes which were mostly business, with most of these respondents having businesses that range from grocery selling to "vibanda hotels". This shows that water has diverse uses that is not limited to household chores for the households of Kayole.

4.5.6 Quality

4.5.6.1 Knowledge on parameters of measuring the quality of water

Knowledge of the parameters used in measuring the quality of water by the respondents would inform them of their ability to keep track of quality standards in water service received. The respondents were asked to give a list of parameters in measuring water quality. The dominant parameters were Taste (48%); Water clarity (40%); Smell (5%); Fresh (5%); treated (2%) as illustrated by figure 4.6.

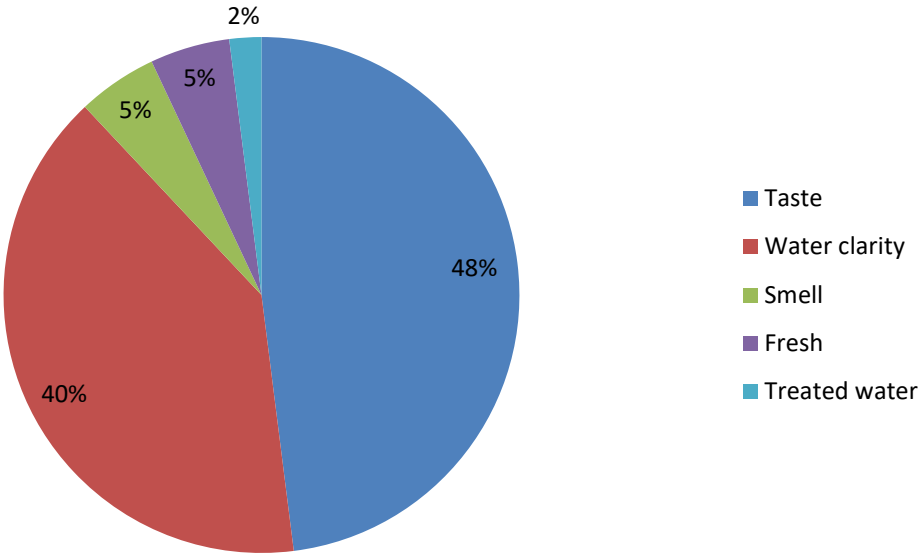


Figure 4.8: Respondents' view on parameters of measuring the quality of water.
Source: Author (2019)

From 4.8, it can be concluded that quality of water is often measured by use of the sense of taste, sight, smell and the period between water being drawn and utilized which may not always be reliable. According to Chan and Ameyaw (2013), water service delivery involves four critical dimensions of performance: access (coverage expansion), quality of service, operational efficiency, and tariff levels/ cost-sharing. Moreover, Obosi (2015) also noted that efficient water service delivery entails water quality, metering, Hours of supply, Water coverage, Average downtime. The analysis of the impact of Public-Private Partnerships on access to adequate and safe water focuses on concessions (where most of the investment is funded by the private partner) and leases-afterimages (where it is mostly funded by the public partner). Accessibility of water services refers to increased coverage of safe and adequate water, thereby reducing the distance covered by consumers to collect water. Often

water PPPs have substantially improved service quality, especially by reducing water rationing.

4.5.6.2 Quality of water before the PPP project

The study determined the quality of water before the implementation of PPP in Soweto as a basis of comparison and verification of change in the quality of water service delivered. A larger part of the respondents (36%) was of the view that water was of low quality, a quarter (27%) viewed it as high, 18% moderate, 10% low while the minority (9%) reported the quality to be very high as shown in figure 4.7.

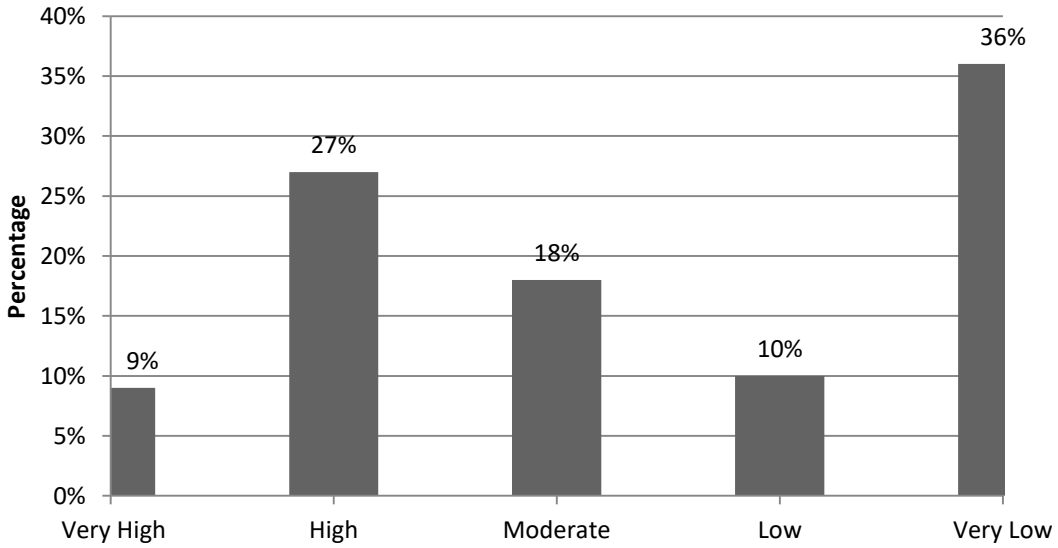


Figure 4.9: Quality of water before the implementation of PPP water service delivery

Source: Author (2019)

From Figure 4.9, it would be concluded that water quality for residents of Soweto, Kayole was poor. Water quality has two indicators; objective based on scientific data and subjective based on the user's perception of water based on its drinkability, the physical features including color and turbidity. The results agree with Raunio (2016) although poor quality water is usually associated with poor access to water, this does

not happen all the time. Some people are not faced with water accessibility problems but poor-quality water and low coverage of connected piped water. It is expected that privatization is to improve the quality of water supply if accompanied by regulations relating to quality standards such as safety, pressure, service levels, equipment, technologies, and procedures.

4.5.6.3 Quality of water after implementation of PPP project

The study examined the quality of water after the implementation of the project at Kayole, Soweto, to determine whether the PPP project affected the quality of water delivered to the residents.

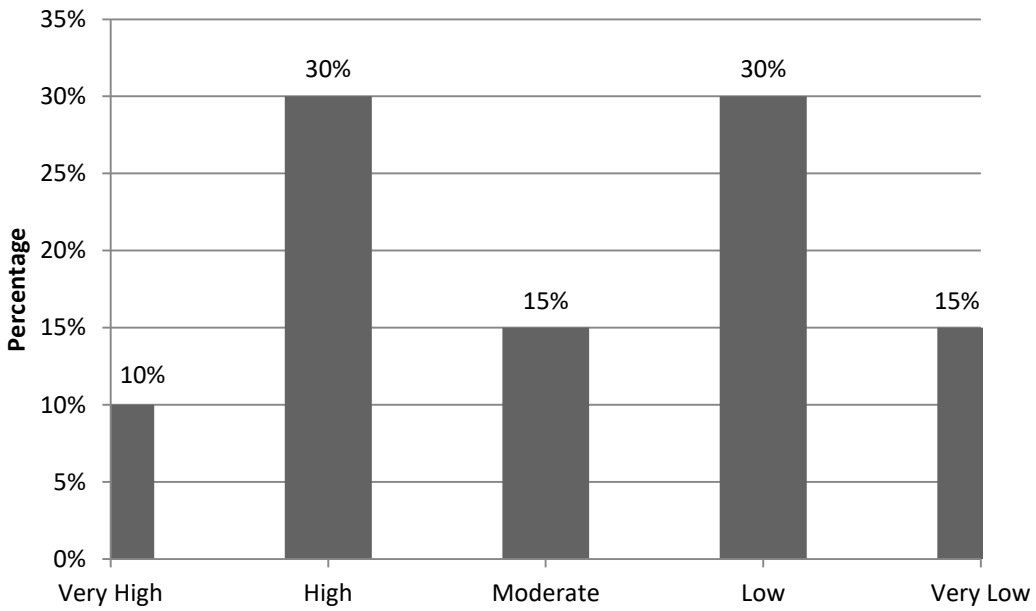


Figure 4.8: Quality of water after the implementation of PPP water service delivery

Source: Author (2019)

As illustrated by Figure 4.8, most of the respondents were of the view that the quality of water was high and very high in comparison to the water before the PPP project implementation. This would, therefore, mean that there was a great improvement in the quality of water service delivered because of PPP strategy implementation.

According to Chan and Ameyaw (2013), water service delivery involves four critical dimensions of performance: access (coverage expansion), quality of service, operational efficiency, and tariff levels/ cost-sharing. Moreover, Obosi (2015) also noted that efficient water service delivery entails water quality, metering, Hours of supply, Water coverage, Average downtime.

4.5.7 Affordability

4.5.7.1 Comparison between the amount of money spent on water services, before and after the PPP project.

The blue bars represent the estimated cost of water before the implementation of water service delivery PPP, while the red bars represent the estimate of the cost for water services after the implementation of the PPP, which is inclusive of a standard charge estimated at sh.250 per month for each household.

Table 4.7: Comparison of the amount of money on water services, before and after the PPP project

Variable	Obs	Mean	Std. Dev.	Min	Max
Amount of money on water services, after PPP project	80	931	830.7901	120	3200
Amount of money on water services, before the PPP project	80	1180.375	831.39	368	3450

From Table 4.7, it is evident that the households spend less on water after the implementation of the project, especially with the standard charge implementation for every household. This would, therefore, mean that the households can access water services, after the PPP intervention. The affordability of water includes considerations for connection costs and monthly charges or tariffs. Opponents of privatization argue that the water costs will increase because of privatization. However, it is argued by Wu, Schuyler House and Peri (2016) that the urban poor are not necessarily going to be losers because of privatization and that price increases shall be outweighed by an

increase in access and service can also be muted by regulations and subsidies aimed specifically to cater for the poor. The unaffordability rate of water tariff measured by the ratio of household monthly expenditure to household income has been increasing in urban areas.

4.5.8 Challenges of PPPs in water service delivery

Lack of water: The study found out that there were beneficiaries who had never received water since the water service delivery was implemented. The following quote serves to support the preceding view.

> "None of the households in my plot have received water since the water supply from the project began. We, therefore, resulted in disconnecting the meter. It is an injustice paying the standardized monthly fee for water not supplied."

Expensive due to monthly pay and lack of water: The study indicated that the stakeholders (beneficiaries) were of the view that the current standard water charges are too high, especially considering the inconsistency and inadequacy of water supply to a majority of Soweto households. Biased supply of water: The findings showed that there was a lack of uniformity in the water supply in Soweto. It was noted that households in some plots received water on more days than others. In other cases, adjacent plots had never received water since the beginning of the project or recorded receiving water less than three times throughout the project.

The findings of the study were that despite having some improvements such as taste and softness of water compared to the supply before the project, the quality of water is still wanting. The respondents emphasized the presence of particles and smell for the first few hours of receiving water on the designated days in a week. Claims of nepotism in management: Some respondents were of the view that the management

positions in the PPP project were not equally distributed among all ethnic groups residing in Soweto. This has greatly influenced the view that there is nepotism, therefore, lack of employment from the project for certain ethnic groups. Therefore, there is inequality in economic gains from employment throughout the project lifecycle.

Allegation of collusion between water service providers (NWSC) and water vendors: Some respondents were of the view that the NWSC was collaborating with private water vendors to benefit them in more sales and profits. The allegations emanated from the situation where water project tap was closed on most days within the week forcing the households to purchase water from the private vendors. Suspicion of bribes from people getting water: Findings indicated that there might have been collusion between the PPP project and the households receiving water consistently. This was informed by the fact that some plots within a line received water more frequently than others for no substantive reason. This has compromised the legitimacy of the project by the beneficiaries.

Availability of water at inconvenient hours of the day: The findings demonstrated that the availability of water during working hours (8.00 am to 5.30 pm) strained the beneficiaries in terms of collecting water and storing it. This was especially so due to having a common water collection point for households within a plot, hence giving some households the upper hand. Increase frequency of water and for longer hours: The study found out that increase in the frequency of water service delivery and for longer than the normal hours would ensure that the residents had an adequate amount of water for household chores and their small enterprises.

The study pointed out that the suspicion of bribery, water politics and inequality in water service delivery was compromising the legitimacy and confidence that the household of Soweto has in the project. This would be achieved through the uniform frequency of water to the households as well as hours. This will greatly enhance the effectiveness of the monitoring and evaluation as well as stakeholder management and overall success of the project. Proper electricity supply for water pumping: Where there are storage tanks for water from the project, there should be a good supply of electricity as well as a backup generator to ensure a continuous supply of water even when there is no electricity.

Increase water quality: Despite the project improving the quality of water being delivered to the plots as compared to what they were recently received, there is more to be done. The respondents complained of a smell for the first few hours of water service delivery on the delivery days. Piped water into houses: The findings demonstrated that having a common water collection point was not as effective due to small conflicts when fetching water, as well as straining when carrying water from the collection point to their houses.

Constant stakeholder involvement: A clear path of communication between the stakeholders and the project would ensure that the stakeholders are aware of the progress of the project and that they can efficiently raise their concerns relating to the project. This will clear up any misunderstanding and solve existing problems within the project. Sensitivity to equal distribution of water among ethnic groups: Due to this being concern by the beneficiaries of the water service delivery PPP, there should be mechanisms put in place to ensure that labor given to the locals is equally distributed among the ethnic groups.

4.5.8.1 Importance of baseline survey

The study found that 100% of the respondents were of the view that the baseline survey was essential in ensuring PPP project success. The prevailing factors were; Project efficiency (75%); Monitoring and evaluation (100%); Resource acquisition (50%). Project efficiency identifies issues to be addressed by the project, establishes the potential risks, stakeholders and scope of the project. This is instrumental in accurately prioritizing tasks in monitoring. Under monitoring and evaluation, a baseline survey ensures accurate setting of parameters to be used to measure the progress of a project. It also ensures that the identified risks are identified promptly and managed effectively.

Moreover, in terms of resource acquisition, baseline survey gives guidance on the accurate resources to be acquired to ensure the smooth running of the project and that it meets the set goals. This would indicate that baseline study is a major instrument of enhancing efficiency and quality of the outcome desired by the project. The findings are consistent with those of Ndandiko (2016), who looked at public-private partnerships as a mode of procuring public infrastructure and service delivery in developing countries and found that in the absence of strong public and/or private sector institutions and an adequate framework, a haphazard introduction of PPP in local governments could worsen infrastructure and service delivery, making it unlikely to benefit the public client. According to Van Dijk (2008), Public-Private Partnerships frequently used concession contracts (a long-term right to extract a natural resource on behalf of the government) and occasionally included a Build Operate Transfer (BOT) contract to ensure the required investments.

4.6 Inferential Statistics Informing the Study

The inferential statistics informing the study was also performed. They include a model summary of the study, analysis of variance and regressions discussed below.

4.6.1 Analysis of variance

Table 4.8 provides the results on the analysis of the variance (ANOVA). It was necessary to use ANOVA to show the overall significance of the model.

Table 4.8: Analysis of variance

Indicator	Sum of Squares	df	Mean Square	F	Sig.
Regression	40.373	3	13.458	23.32	.000b
Residual	43.821	76	0.577		
Total	84.194	79			

Table 4.8 results indicate that the overall model was statistically significant. Further, the results imply that the independent variables which include implementation of public-private partnership strategy, the viability of public-private partnership and challenges in the implementation of PPPs are good predictors of water service delivery. This was supported by an F statistic of 23.32 and the reported p-value (0.000) which was less than 0.05 level of significance. Therefore, the result findings from the ANOVA showed that the model is satisfactory in explaining the relationship between public-private partnership and water service delivery.

4.6.2 Model summary of the relationship between variables

This section presented the coefficient of determination of the model. The results presented in Table 4.9 present the fitness of the model used in the regression model in explaining the study phenomena.

Table 4.9: Model summary of the relationship between variables

Indicator	Coefficient
R	0.692
R Square	0.480

Table 4.9 presents the implementation of a public-private partnership strategy, the viability of public-private partnership and challenges in the implementation of PPPs were found to be satisfactory variables in explaining water service delivery. The coefficient of determination, often known as the R square, of 48% supports this. This suggests that the implementation of a public-private partnership strategy, the viability of a PPP, and problems in PPP implementation account for 48% of the variation in the dependent variable, water service delivery.

4.6.3 Regression analysis of independent variables and dependent variables

Regression analysis was carried out to establish the overall effect of the independent variables to the dependent variables. The independent variables were regressed against the dependent variable. Result findings of the regression were presented in table 4.10.

Table 4.10: Regression analysis of independent variables and dependent variables

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	-0.388	0.225		-1.72	.087
PPP implementation	0.291	0.053	0.275	5.503	.000
Viability of PPPs	0.262	0.05	0.264	5.258	.000
Challenges in the implementation of PPPs	-0.228	0.05	0.223	-4.531	.000

Table 4.10 on regression of coefficients results shows that public-private partnership and water service delivery are positively and significantly related (r=0.291, p=0. 000). The coefficient .291 implies that a unit change in the implementation of PPPs results in a .291 increase in service delivery. The results further indicate that the viability of

public-private partnerships and water service delivery is positively and significantly related (r=0.262, p=0.000). The viability of public-private partnerships will also lead to increased water service delivery by 0.262 units.

It was further established that challenges in the implementation of PPPs and water service delivery are negatively and significantly related (r=-0.228, p=0.000). The coefficient of the regression results implies that a unit increase in challenges in the implementation of PPPs results in a decrease in water service delivery by -0.228.

Thus, the optimal model for the study is.

Water service delivery = -0.388+ 0.291PPP implementation+ 0.262Viability of PPPs-0.228Challenges in the implementation of PPPs

Public-Private Partnership as a strategy of public service management reform was acknowledged in the 1990s as crucial to sustainable development initiatives especially in the developing countries (Van Dijk, 2008). A PPP is a system in which the public and private sectors work together to produce public goods. Private enterprise principles are partnering with public administration to improve the quality and efficiency of public service delivery (Tochitskaya, 2007). A public-private partnership, according to the OECD (2008), is an agreement between the government and one or more private partners (which may include operators and financiers) in which the private partners deliver the service in such a way that the government's service delivery objectives are aligned with the private partners' profit objectives, and the effectiveness of the alignment is dependent on a sufficient risk transfer to the private partners.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Overview

This chapter presents a summary of findings, conclusions of the study and recommendations.

5.2 Summary of Findings

The summary of findings is presented based on the three objectives of the study.

5.2.1 Implementing PPPs in water service delivery in urban areas in Kenya.

The study has shown that the respondents have knowledgeable on the different types of PPPs, with a good number (40%) of the respondents being familiar with Out Based Model, 30% confirmed to know about Build Operate Own and Transfer, 20% familiar with Build Own Transfer while the minority (10%) had knowledge Lease model. The Out Based Model is most favourable for urban areas in Kenya, as it is designed as a pro-poor model. Regression results also showed that the implementation of public-private partnership and water service delivery is positively and significantly related. The results agree with Abubakari, Buabeng and Ahenkan (2013) undertook a study titled implementing public-private partnerships in Africa for urban water service delivery in Ghana and found that implementation ambiguities translated into delays in the implementation process of PPPs in the water sector. The results also agree with Bruchez (2014) who investigated public-private partnerships (PPPs) in South Africa and established that too few large-scale infrastructure projects are implemented through PPPs and in sectors that are not considered as ideal according to the literature. According to Van Dijk (2008), Public-Private Partnerships, often concerned

concession contracts (a long-term right to extract some natural resource on behalf of the government) and sometimes had a Build Operate Transfer (BOT) contract added to it to assure the necessary investments.

The study has established that the stages of PPP implementation in Kenya include project identification and selection, feasibility study, procurement preparation/procurement, assessing privately initiated investment proposals, contract award, and project implementation amendment/termination/renewal of the project depending on the outcome of the project. The results agree with Frone and Frone (2018) who looked on issues of efficiency for public-private partnerships in the water sector in Romania and established that the advisory team is one of success driver of PPP implementation. Likewise, Raunio (2016) who studied the successful implementation of public-private partnerships to local communities: Providing water supply services in Sub-Saharan Africa established that expert input is important in enhancing PPP implementation. Frone and Frone (2018) also established that the risk of falling demand and thus the risk of non-payment of charges for the water and wastewater services, because of the high rates and low affordability of the population, was common among poorly implemented PPPs.

5.2.2 Viability of PPPs in water service delivery for urban areas in Kenya

The study established that the benefits of exploring PPPs as strategies in water service delivery in urban areas and the following merits prevailed from the respondent's view, filling the resource gap, risk transfer and mitigation, customizable PPP models, Economic growth. Model results also revealed that the viability of public partnership strategies and water service delivery are positively related. The results agree with Matji and Ruiters (2015) who noted that stakeholder engagement studies are critical in

public-private implementation. According to Fombad (2013If appropriate accountability structures and anti-corruption measures are put in place, as well as effective mechanisms to ensure stakeholder consultation, transparent procurement processes, open access to information, contract monitoring, and appropriate risk transfer, PPP accountability will become effective. According to Frone and Frone (2018), because of the high rates and low affordability of the people, especially in rural regions, the risk of diminishing demand, and thus the potential of non-payment of charges for water and wastewater services, was noted.

The study establishes that the prevailing factors determining the success of PPPs in water service delivery; clear set goals, clearly defined roles and responsibilities, return on investment, Stakeholder management, clearly defined roles and responsibilities, return on investment, Stakeholder management. On the other hand, the major factors contributing to the effective policy framework for PPPs as strategies in water service delivery for urban areas in Kenya. The prevailing factors were: Roles and responsibilities, stakeholder support, adequate funding, specific and discrete and quality of policies. The results agree with Matji and Ruiters (2015) who noted that stakeholder engagement studies are critical in public-private implementation. According to Fombad (2013) accountability in PPPs will become effective, should appropriate accountability structures and anti-corruption measures be put in place, and should effective mechanisms to assure stakeholder consultation, transparent procurement processes, open access to information, contract monitoring and appropriate risk transfer be activated. According to Van Dijk (2008), Public-Private Partnerships, often concerned concession contracts (a long-term right to extract some

natural resource on behalf of the government) and sometimes had a Build Operate Transfer (BOT) contract added to it to assure the necessary investments.

The study shows that there is no uniformity in the number of times the meter is read in a month. The majority of respondents reported that their meter was only read once and never followed by once after initial installation and lastly the minority; twice a month and not aware of how often the meter reading was done. The meter reading is mainly done by Nairobi Water and Sewerage Company (99%) and the remaining (1%) done by the respondents and forwarded to the company through mobile phone. The results agree with Isoke and van Dijk (2014) that access to drinking water in urban informal settlements of developing countries remains a challenge for the poor and depends on the technology selected.

The study showed that the majority (53%) of the respondents did not agree with the bill generated from the reading, a quarter of the respondents agreed while the minority (11%) were either not aware or did not have a meter in place. Further to this, the majority of the respondents report never receiving water since the implementation of the PPP project, while a quarter of the respondent's report having only been supplied water once, and the rest once, twice and thrice a week. Some of the key issues arising in the implementation of PPP projects in water service delivery were Stakeholder management; the process of PPPs; risk analysis and mitigation. The results agree with Abubakari, Buabeng and Ahenkan (2013) undertook a study titled implementing public-private partnerships in Africa for urban water service delivery in Ghana and found that implementation ambiguities translated into delays in the implementation process of PPPs in the water sector. The results also agree with Bruchez (2014) who investigated public-private partnerships (PPPs) in South Africa and established that

too few large-scale infrastructure projects are implemented through PPPs and in sectors that are not considered as ideal according to the literature.

The study further affirmed that a greater part of the respondents (79%) was of the view that water supplied was not adequate while 21% were contented with the amount of water supplied about their household chores. However, a good percentage (79%) were of the view that water supplied was not adequate, while 21% were contented with the amount of water supplied about their household chores. This is especially so because the majority (62.5%) did not limit the use of water on house chores only, while 37.5% only used water for household chores.

The study further affirmed the participation of the respondents in monitoring and evaluation of water services through their proved knowledge on the parameters used in measuring the quality of water by the respondents would inform on their ability to keep track of quality standards in water service received. The dominant parameters used were; Taste (48%); Water clarity (40%); Smell (5%); Fresh (5%); treated (2%). This was used by the respondents for both the water service delivery by the PPP as well as the private vendors. The results agree with Matji and Ruiters (2015) who noted that stakeholder engagement studies are critical in public-private implementation. Also, Fombad (2013) noted that accountability in PPPs will become effective, should appropriate accountability structures and anti-corruption measures be put in place, and should effective mechanisms to assure stakeholder consultation, transparent procurement processes, open access to information, contract monitoring and appropriate risk transfer be activated.

5.2.3 Challenges in the implementation of PPPs in water service delivery for urban areas in Kenya

The study showed that 100% of the respondents were of the view that the baseline survey was essential in ensuring PPP project success. The prevailing factors were; Project efficiency (75%); Monitoring and evaluation (100%); Resource acquisition (50%). It was further established that challenges in the implementation of PPPs and water service delivery are negatively and significantly related. Further to this, Constant stakeholder involvement through a clear path of communication between the stakeholders and the project was a challenge. Therefore, stakeholders were unaware of the progress of the project and that they could not raise their concerns relating to the project efficiently, this created misunderstanding and unsolved problems within the project. According to Frone and Frone, (2018) economic risk is jeopardizing the efficiency of the water companies and normally does not foster the creation and development of some forms of PPPs for the much required and needed development of the water supply. Also, Raunio (2016) noted that water scarcity is an on-going challenge that will continue to affect the globe. However, it is a challenge that modern economies can answer if common interest is achieved. In many areas, water scarcity is more of a socio-economic problem than a lack of water resources.

The study found out that there were beneficiaries who had never received water since the water service delivery was implemented and respondents were of the view that the current standard water charges are too high, especially considering the inconsistency and inadequacy of water supply to most Soweto households. Nevertheless, despite having some improvements such as taste and softness of water compared to the supply before the project, the quality is still wanting. The respondents emphasized the presence of particles and smell for the first few hours of receiving water on the

designated days in a week. The findings are consistent with those of Ndandiko (2016), who looked at public-private partnerships as a mode of procuring public infrastructure and service delivery in developing countries and found that in the absence of strong public and/or private sector institutions and an adequate framework, a haphazard introduction of PPP in local governments could worsen infrastructure and service delivery, making it unlikely to benefit the public client. According to Van Dijk (2008), Public-Private Partnerships frequently used concession contracts (a long-term right to extract a natural resource on behalf of the government) and occasionally included a Build Operate Transfer (BOT) contract to ensure the required investments.

The study indicated respondents' allegation of collusion between water service providers (NWSC) and water vendors: Some respondents were of the view that the NWSC was collaborating with private water vendors to benefit them in more sales and profits. The allegations emanated from the situation where water project tap was closed on most days within the week forcing the households to purchase water from the private vendors. The results agree with Isoke and van Dijk (2014) that access to drinking water in urban informal settlements of developing countries remains a challenge for the poor and depends on the technology selected.

5.3 Conclusions of the Study

The following conclusions were made from the study:

The study established that the implementation of public-private partnership influences water service delivery. The results conclude that implementing public-private partnership has enhanced water service delivery in Kayole Soweto informal settlement. The implementation of PPPs involves identifying candidate projects and managing the project. A good PPP for this matter will be a project that is cost-benefit

justified with value for money and fiscally responsible. According to the report, successful PPP programs go through constant and rigorous screening during their development stages. The preparation stage is broken into intensive and expensive phases that guarantee continues achievement of the set criteria. This is a result of the activities throughout the PPP life cycle being dependent on each other. Information collected from the experts pointed out that several key aspects of the implementation process were recurrent.

It was also concluded that that viability of Public-private partnership enhances water service delivery. A PPP dialogue process helps to make water governance effective, to build institutional capacity in developing countries, but on top of that to involve other stakeholders, namely private sector participants in achieving the development goals. The dialogue may also help to improve the understanding between parties as it will help to identify key areas for action and to raise the importance of efficient water service delivery.

The study also concluded that challenges are affecting the implementation of the public-private partnership strategy. The PPPs are also marred with problems of availability of baselines from which progress can be measured. Various challenges arising from the implementation of PPPs were identified in the implementation of PPPs. Some of the challenges include accountability challenges that include lack of public consultation and transparency, corruption, a lack of competition, accounting issues, ineffective contract management, failure to monitor performance, and failure to ensure value for money and equitable risk allocation.

It can be concluded that shareholder or beneficiary management from the planning phase of the project. In the case where the beneficiaries are tenants, both landlords

and tenants should actively be involved in the monitoring and evaluation, as well as income considered before setting tariffs or constant pay. Moreover, the efficient and effective legal framework is essential in ensuring that the roles and responsibilities of both public and public parties are differentiated, and accountability is enhanced. Finally, PPPs as strategies for water service delivery in urban areas is more efficient if it is tailor-made to fit the dynamics of a specific urban area. A good factor in ensuring this is establishing different uses of water in the specific area, emphasis on quality of services.

5.4 Recommendations

The following recommendations were made from the findings of this study.

i. Customer/beneficiary orientation should be part of monitoring and evaluation, to ensure to effectively meet their needs and keep track of arising issues.
ii. The process of implementing public-private partnership projects is very critical in the actual success and operations of water-related PPP project. The study recommends systematic monitoring and assessment of water PPP project by all concerned stakeholders that include government, private sector and members of the community.
iii. Public-private supported water projects are viable if addressing the need for providing adequate, safe and affordable water services. The study recommends the need of government through the Ministry of Water to establish institutional frameworks that will support the expansion of public-private partnership water-related projects to other informal settlements in Nairobi City County.

iv. Some of the challenges arising from the implementation of PPPs were identified in the implementation of PPPs and include accountability lack of public consultation and transparency, corruption, a lack of competition, accounting issues, ineffective contract management, failure to monitor performance, and failure to ensure value for money and equitable risk allocation. The study recommends the creation of community-private and government PPP implementation framework to guide the successful deployment of PPP related water projects while enhancing accountability and transparency.

v. Investing in a baseline survey, especially where there needs to be a constant charge as a way of paying for the services. This will ensure that the beneficiaries are not strained in keeping up with the payments.

vi. Efficient stakeholder management is essential from the planning stage to the project termination phase. This ensures that the shareholders are aware of the process and can play an important role in ensuring that the goals are met. This further reduces conflict between the shareholders and the project and further enhances the legitimacy of the project.

vii. Community members need to be involved in strengthening the institutions responsible for planning, implementation and management of water resources. The water-related services should be transferred to the community and/or private sector with appropriate “Public-Private Partnership” model. These holds promise for the gradual removal of the large disparity between stipulations for disproportionate water supply to urban areas. Each operator, community or private, should have infrastructure development as part of the lease agreement for water service provision.

5.5 Suggested Areas for Further Research

The following are the areas suggested for further studies from the results of this study.

i. Conduct research on Public-Private Partnership legal framework in water service delivery for urban areas in Kenya.

ii. Conduct research on mechanisms for establishing an investment return rate for Public-Private Partnerships in Kenya.

iii. Conduct further research on relevant Public-Private Partnership models in water service delivery for developing countries.

REFERENCES

Abedin, M. N. (2010). *Public-private partnership in service delivery: an evaluation of the national sanitation program of Bangladesh* (Doctoral dissertation, BRAC University).

Abubakari, M., Buabeng, T., & Ahenkan, A. (2013). Implementing public-private partnerships in Africa: the case of urban water service delivery in Ghana. *Journal of Public Administration and Governance*, *3*(1), 41-56.

Airoldi, M., Chua, J., Gerbert, P., Justus, J., &Rilo, R. (2013, February 26). *Meeting the Infrastructure Challenge with Public-Private Partnerships: Bridging the Gap.* Retrieved on 22 May, 2017 from Tourism_meeting_the_infrastructure_challenge_with_public_private_partnerships/

Alfen, H. W., Kalidindi, S. N., Ogunlana, S., Wang, S., Abednego, M. P., Frank-Jungbecker, A., ... & Zhao, G. (2009). *Public-private partnership in infrastructure development: case studies from Asia and Europe*. Weimar: Verlag der Bauhaus-Universität.

Ameyaw, E. E., & Chan, A. P. (2015). Risk allocation in public-private partnership water supply projects in Ghana. *Construction Management and Economics*, *33*(3), 187-208.

Ameyaw, E. E., & Chan, A. P. (2016). Critical success factors for public-private partnership in water supply projects. *Facilities*.

Angoua, E. L. E., Dongo, K., Templeton, M. R., Zinsstag, J., & Bonfoh, B. (2018). Barriers to access improved water and sanitation in poor peri-urban settlements of Abidjan, Côte d'Ivoire. *PloS one*, *13*(8), e0202928.

Asare, B. E., & Frimpong, M. K. (2013). Public-private partnerships and urban sanitation: Do expectations meet realities in Madina-Ghana? *Journal of African Studies and Development*, *5*(5), 113-124.

Atieno, O. J. (2014). Implementation of Public-Private partnerships in Kenya's Public Sector (Doctoral dissertation, University of Nairobi).

Babatunde, 0.S. and Opawole, A. (2012). Critical success factors in public-private partnership on infrastructure delivery in Nigeria. Journal of facilities management. 10(3): 212-225.

Bakker, K. (2010). *Privatizing water: governance failure and the world's urban water crisis*. Cornell University Press.

Barclay, M., & Holderness, C. (1989). "Private benefits from control of public corporations", *Journal of Financial Economics* 25, 371-395.

Barough, A. S., Shoubi, M. V., & Skardi, M. J. E. (2012). Application of game theory approach in solving the construction project conflicts. *Procedia-Social and Behavioral Sciences*, *58*, 1586-1593.

Basit, A. (2015). Pakistan's Militant Rehabilitation Programme: An Overview. *Counter Terrorist Trends and Analyses*, *7*(9), 10-17.

Beh, L. S. (2010). Public-private partnerships in China: A responsive participation. *Journal of US-China Administration*, *7*(9), 30-35.

Bekka, K. (2012). Public Private Partnership for infrastructure development: Acquiring new skills for a new age. *HDR, Silver Spring, MD*.

Bovis, C. (2010, November). Public-private partnerships in the 21st century. In *erA forum* (Vol. 11, No. 3, pp. 379-398). Springer-Verlag.

Bruchez, N. (2014). Public private partnerships (PPPs) in South Africa: to what extent are PPPs suitable for the long-term development of infrastructure in South Africa? *Retrieved*, *7*(16), 2019.

Buabeng, T. (2015). Implementation of a public-private partnership in local government in Ghana: A study of Ga West and Adentan Municipal Assemblies in the Greater Accra Region. *African Journal of Governance and Development*, *4*(2), 17-32.

Campbell, C. (2011). Limits to agency: Exploring the unintended (and unattended) consequences of action. *Sociology and the unintended: Robert Merton revisited*, 45-62.

Chan, A. P., & Ameyaw, E. E. (2013). The private sector's involvement in the water industry of Ghana. *Journal of Engineering, Design and Technology*. 11 Iss 3 pp. 251 – 275.

Chima, P., & Kasim, U. (2018). Public-private partnership as a strategy for e-governance funding in Africa: The gains and the pains. *International Journal of Public Policy and Administration Research*, *5*(2), 37-47.

Cooper, D.R. and Schindler, P.S. (2011). Business Research Methods, 11th, edition. McGraw-Hill Publishing, Co. Ltd, New Delhi-India

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *psychometrika*, *16*(3), 297-334.

Dagdeviren, H. (2008). Waiting for miracles: The commercialization of urban water services in Zambia. *Development and Change*, *39*(1), 101-121.

de Palma, A., Leruth, L., & Prunier, G. (2012). Towards a principal-agent based typology of risks in public-private partnerships. *Reflets et perspectives de la vie économique*, *51*(2), 57-73.

Desu, M. M. (2012). *Sample size methodology*. Elsevier.

Dubina, I. N. (2015). Game theory and business simulation game approaches innovation ecosystem analysis. *International Journal of Arts & Sciences*, *8*(4), 45.

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of management review*, *14*(1), 57-74.

Espigares, J. L. N., & Torres, E. H. (2009). Public and private partnership as a new way to deliver healthcare services. In *XVI Encuentro de Economía Pública: 5 y 6 de febrero de 2009: Palacio de Congresos de Granada* (p. 74).

Espigares, J. L. N., & Torres, E. H. (2009). Public and private partnership as a new way to deliver healthcare services. In *XVI Encuentro de Economía Pública: 5 y 6 de febrero de 2009: Palacio de Congresos de Granada* (p. 74).

Farah, M. A. (2015). *Lean supply chain management practices and organizational performance in the public water sector in Kenya* (Doctoral dissertation).

Farber, D. A. (2017). Public choice theory and legal institutions. *The Oxford Handbook of Law and Economics*, *1*, 181-201.

Farquharson, E., Torres, C., Yescombe, E., &Encinas, J. (2011). How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets. *Public-Private Infrastructure Advisory Facility*, pp. 1-198.

Fombad, M. C. (2013). Accountability challenges in public–private partnerships from a South African perspective. *African Journal of Business Ethics*, *7*(1).

Frone, S., & Frone, D. F. (2018). Issues Of Efficiency For Public-Private Partnerships In The Water Sector. *Studies And Scientific Research. Economics Edition*, (27).

Gassner, K., Popov, A., & Pushak, N. (2008). Does the private sector deliver on its promises? Evidence from a global study in water and electricity.

Gubler, Z. J. (2012). Public Choice Theory and the Private Securities Market. *NCL Rev.*, *91*, 745.

Guth, W. D., & MacMillan, I. C. (1986). Strategy implementation versus middle management self-interest. *Strategic management journal*, *7*(4), 313-327.

Harris, C., & Vellutini, A. (2012). Public-Private Partnerships Reference Guide. *Public-Private Infrastructure Advisory Facility*, 1-230.

Hatfield, T. (2015). Environmental impact assessment for proposed changes to operations of the weir on St. *Mary Lake, Salt Spring Island, BC. Consultant's report prepared for North Salt Spring Waterworks District by Ecofish Research Ltd*.

Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-based nursing*, *18*(3), 66-67.

Henderson, J., & McGloin, E. (2004). North/South infrastructure development via cross-border PPP mechanisms. *International Journal of Public Sector Management*.

Horowitz, J. K., Just, R. E., & Netanyahu, S. (1996). Potential benefits and limitations of game theory in agricultural economics. *American journal of agricultural economics*, *78*(3), 753-760.

Hulme, D. (2001). Reinventing the Third World state: service delivery and the civic realm. *The Internationalization of Public Management: Reinventing the Third World State, Cheltenham (UK)*, 129-152.

Iossa, E., & Saussier, S. (2018). Public private partnerships in Europe for building and managing public infrastructures: an economic perspective. *Annals of Public and Cooperative Economics*, *89*(1), 25-48.

Isoke, J., & van Dijk, M. P. (2014). Factors influencing selection of drinking water technologies for urban informal settlements in K ampala. *Water and Environment journal*, *28*(3), 423-433.

Jensen, M. C., & Meckling, W. F. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3, 305-360.

Jensen, O. (2017). Public–private partnerships for water in Asia: a review of two decades of experience. *International journal of water resources development*, *33*(1), 4-30.

Kacker, S. D., Osborne Miller, T., & Ramanujam, S. R. (2014). *Running water in India's cities: a review of five recent public-private partnership initiatives* (No. 84384, pp. 1-72). The World Bank.

Kahyaoğulları, B. (2013). Public-private partnerships in developing and developed countries: the UK and Turkish cases.

Kajimo-Shakantu, K., Kavela, L., & Shakantu, W. (2014). Applicability and constraints of delivering water infrastructure via public private partnership. *Social and Behavioural Sciences*, *119*, 867-876.

Karamage, F., Zhang, C., Ndayisaba, F., Nahayo, L., Kayiranga, A., Omifolaji, J. K.,. & Liu, T. (2016). The need for awareness of drinking water loss reduction for sustainable water resource management in Rwanda. *Journal of Geoscience and Environment Protection*, *4*(10), 74.

Kedenda, A. R. (2010). *Public private partnership for infrastructure development: a comparative study of Kenya and India* (Doctoral dissertation, University of Nairobi, Kenya).

Koimett, E. (2013). *Public-Private Partnerships in Kenya.* Nairobi: Ministry of Finance.

Leigland, J. (2018). Public-private partnerships in developing countries: The emerging evidence-based critique. *The World Bank Research Observer*, *33*(1), 103-134.

MacLean, S. M. (2011). Public choice theory and House of Lords reform. *Economic Affairs*, *31*(3), 46-48.

Malik, M., Karangwa, L., Muzola, A., Sano, J., Hategekimana, E., Nteziyaremye, F., ... & Rutaganda, J. M. (2017). Rural WASH programming: experiences from Rwanda.

Marin, P. (2009). *Public-Private Partnerships for Urban Water Utilities: a review of experience in developing countries* (Vol. 8). World Bank Publications.

Marshall, C., & Rossman, G. B. (2014). *Designing qualitative research*. Sage publications.

Matji, M. P., & Ruiters, C. (2015, May). Conceptual framework for public–private partnerships model for water services infrastructure assets: case studies from municipalities in the Limpopo and Gauteng Provinces. In *Proceeding of the AMPEAK Asset Management Conference* (pp. 24-27).

McQuaid, R. (2000). The theory of partnership: why have partnerships. In S. Osborne (ed.), *Public-Private Partnerships. Theory and practice from an international perspective* (pp. 9-35). London; New York: Routledge.

Mfunwa, M., Taylor, A., & Kreiter, Z. (2016). Public-private partnerships for social and economic transformation in Southern Africa: progress and emerging issues. *Southern African Journal of Policy and Development*, *2*(2), 5.

Migan, S. A. (2015). *Benin: Innovative Public Private Partnerships for Rural Water Services Sustainability*. World Bank.

Mitnick, B (1986). *The theory of agency and organizational analysis.* Unpublished working paper, University of Pittsburg.

Mitnick, B. M. (1973). Fiduciary rationality and public policy: The theory of agency and some consequences. In *1973 Annual Meeting of the American Political Science Association, New Orleans, LA. In Proceedings of the American Political Science Association*.

Mohammed, A., A., & Saidi, A., M. (2018). Public-Private Partnership: Ghanaian Perspective of Urban Water Supply. *International Journal of Engineering & Technology*, 7 (3.18) (2018) 49-52.

Morris, P. (2012). *Introduction to game theory*. Springer Science & Business Media.

Mu, R., De Jong, M., & Koppenjan, J. (2011). The rise and fall of Public–Private Partnerships in China: a path-dependent approach. *Journal of Transport Geography*, *19*(4), 794-806.

Mueller, L. (1979). Sensitivity enhanced detection of weak nuclei using heteronuclear multiple quantum coherence. *Journal of the American Chemical Society*, *101*(16), 4481-4484

Mugenda, O. M., & Mugenda, A. G. (1999). *Research methods: Quantitative and qualitative approaches*. Acts press.

Muzenda, D. (2009). Increasing private investment in African energy infrastructure. *Ministerial and Expert Roundtable, NEPAD-OECD Africa Investment Initiative*.

Ndandiko, C. (2016). Public Private Partnerships as modes of procuring public infrastructure and service delivery in developing countries: Lessons from Uganda. In *Proceedings of the International Public Procurement Conference* (pp. 693-710).

Newing, H., Eagle, C., Puri, R. K., & Watson, C. W. (2011). *Conducting research in conservation* (Vol. 775). Oxfordshire: Routledge.

Njambi, L. (2013). Kayole Soweto Project. Informal Settlements. *Nairobi City Water and Sewerage Company, KENYA*.

Nokulunga, M., Didi, T., & Clinton, A.(2018). The role of public private partnership in improving service delivery in South Africa. 42ndAUBEA Conference 2018: Educating Building Professionals forthe Future in the Globalised Worl d.

Ntshangase, B. A. (2002). *Public private partnership for service delivery in South Africa* (Doctoral dissertation).

Nwokorie, E. C. (2018). Public-Private Partnership Coordination: Lessons from Tanzanian Water Sector. DOI: https://doi.org/10.1007/978-3-319-31816-5_3548-1.

Obosi, J. O. (2015). *The Public Service Delivery Challenge: A Public-Private Partnership in Water Service Provision in Kenya*. Scholars' Press.

Obosi, J. O. (2017). Impact of public-private partnership on water service delivery in Kenya. *Open Journal of Political Science*, *7*(2), 211-228.

OECD (2008). Public-private partnerships: in pursuit of risk sharing and value for money, GOV/PGC/SBO (2008)1/REV1, Public Governance and Territorial Development Directorate Public Governance Committee, OECD, Paris.

Okeyo, J. K. (2013). *The public service delivery challenge: a public-private sector partnership in water service provision in the Lake Victoria Basin, Kenya* (Doctoral dissertation, University of Nairobi).

Ong'olo, D. O. (2006). Public-private partnerships (PPP) practice and regulatory policy in Kenya.

Organisation for Economic Co-Operation and Development (OECD). (2009). *Private sector participation in water infrastructure*. IWA Publishing.

Osborne, S. (2000). *Public-private partnerships*. London: Routledge.

Panda, B., & Leepsa, N. M. (2017). Agency theory: Review of theory and evidence on problems and perspectives. *Indian Journal of Corporate Governance*, *10*(1), 74-95.

Perry, J. L., & Wise, L. R. (1990). The motivational bases of public service. *Public administration review*, 367-373.

Pinda, M., P. (2010). National Public Private Partnership (PPP) Policy in Tanzania. https://tanzania.eregulations.org/.

PPP Act for Zambia. [accessed 2018 Jun 13]. https://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/ppp_testdumb/documents/zambia_ppp_act_2009.pdf.

Prasad, M. (2006). *The politics of free markets: The rise of neoliberal economic policies in Britain, France, Germany, and the United States*. University of Chicago Press.

Qian, N., House, S., Wu, A. M., & Wu, X. (2020). Public–private partnerships in the water sector in China: a comparative analysis. *International Journal of Water Resources Development*, *36*(4), 631-650.

Raunio, S. (2016). Successful implementation of Public-Private Partnerships to local communities: Providing water supply services in Sub-Saharan Africa. Helsinki Metropolia University of Applied Sciences.

Roehrich, J. K., Lewis, M. A., & George, G. (2014). *Are public–private partnerships a healthy option? A systematic literature reviews. Social Science & Medicine, 113, 110–119.*

Rondinelli, D. A. (2004). International goals and strategies for Afghanistan's development: reconstruction and beyond. *Beyond Reconstruction in Afghanistan: Lessons from Development Experience*, 11-31.

Rostiyanti, S. F., & Tamin, R. Z. (2010, March). Identification of challenges in public private partnership implementation for Indonesian toll road. In *Proceedings of the First Makassar International Conference on Civil Engineering, March* (pp. 9-10).

Russell, C. S. (2013). *Collective decision making: Applications from public choice theory*. Routledge.

San Cristóbal, J. R. (2015). The use of Game Theory to solve conflicts in the project management and construction industry. *International Journal of Information Systems and Project Management*, *3*(2), 43-58.

Sekaran, U., & Bougie, R. (2010). Research Methods for Business: A Skill Building Approach (5th edition). New Jersey: John Wiley and Sons

Shughart, W. F., & McChesney, F. S. (2010). Public choice theory and antitrust policy. *Public Choice*, *142*(3-4), 385-406.

Shuttleworth, W. J., & Wallace, J. S. (2009). Calculating the water requirements of irrigated crops in Australia using the Matt-Shuttleworth approach. *Transactions of the ASABE*, *52*(6), 1895-1906.

Steijn, B., Klijn, E. H., & Edelenbos, J. (2011). Public private partnerships: Added value by organizational form or management? *Public Administration*, *89*(4), 1235-1252.

Sutcliffe, M. & Bannister, S. (2014). Africa. In United Cities, & Local Governments. *Basic Services for All in an Urbanizing World*. Routledge.

Syll, L. P. (2018). Why game theory never will be anything but a footnote in the history of social science. *Real-world economics review*, 45.

Than, I. I. C. L. P. (2002). Public choice theory.

The Public Private Partnerships Act 2013 No.15 of 2013. (2013, January 25). *Kenya Gazette Supplement*, pp. 307-355.

Tochitskaya, I. (2007). Public Private Partnership. *Minsk: German Economic Team in Belarus*.

Tsitsifli, S., & Kanakoudis, V. (2008). Best Practices of PPP projects in the water services sector. In *Management of Innovative Business, Education & Support systems International Conference* (pp. 675-690).

UNICEF report (2015). Study into relative effectiveness of Public Private Partnership (PPP) arrangements for Rural Water Supply. https://www.unicef.org/esa/sites/unicef.org.esa/files/2018-09/UNICEF-2015-PPP-RWS-Study-Report.pdf.

Valipour, A., Yahaya, N., Noor, N. M., Valipour, I., & Tamošaitienė, J. (2019). A SWARA-COPRAS approach to the allocation of risk in water and sewerage public–private partnership projects in Malaysia. *International Journal of Strategic Property Management*, *23*(4), 269-283.

Van Dijk, M. P. (2008). Public? private partnerships in basic service delivery: impact on the poor, examples from the water sector in India. *International Journal of Water*, *4*(3-4), 216-234.

World Bank Group (2014). Water PPP in the Middle East and North Africa region (MENA): An Overview. Geneva: The World Bank Group.

World Bank. (2017). *World development report 2017: Governance and the law*. The World Bank.

Wu, X., Schuyler House, R., & Peri, R. (2016). Public-private partnerships (PPPs) in water and sanitation in India: lessons from China. *Water Policy*, *18*(S1), 153-176.

Yamane, T. (1967). Statistics: an introductory analysis. New York: Harper and Row

Zen, F. (2019). Public–private partnership development in Southeast Asia. *Realizing The Potential of Public–Private Partnerships To Advance Asia's Infrastructure Development*, 255.

Zhong, L., Mol, A. P., & Fu, T. (2008). Public-private partnerships in China's urban water sector. *Environmental Management*, *41*(6), 863-877.

APPENDICES

Appendix I: Questionnaire

Dear Respondent,

My name is Christine Muhoro, a postgraduate student at Moi University-School of Arts. I am conducting a study on the *Implementation of Public-Private Partnership Strategies in Water Service Delivery.*

I would appreciate it if you took your time and respond to my questions. This information gathered will be strictly used for academic purposes only and will be treated with utmost confidence.

Section A: Respondent's Information

1.) Respondent's gender information

Female ☐

Male ☐

2.) How old are you?

Bellow 18 years

18 - 20 years ☐

21 - 35 years ☐

36 - 50 years ☐

51 – 65 years ☐

66 years and above ☐

3.) What is your employment status?

Homemaker ☐

Self- employed ☐

Employed for wages. ☐

Unemployed ☐

Retired ☐

Section B: Quality

1.) How consistent is the water service?

Very High ☐

High ☐

Moderate ☐

Low ☐

Very Low ☐

2.) On average, how much did you spend on water per 20 Liters vessel per month before the water service delivery project?

_____

ii) On a monthly basis, how much do you spend on water services now?

_____

iii) In your opinion, is the water service affordable?

If no explain _____

3.) How do you know that water is of good quality? _____

4.) ii) How was the quality of water before the water service delivery project?

Very high ☐

High ☐

Moderate ☐

Low ☐

Very Low ☐

5.) How is the quality after the water service delivery project?

Very High ☐

High ☐

Moderate ☐

Low ☐

Very Low ☐

Section C: Efficiency

1.) Do you have a meter?

Yes ☐

No ☐

2.) How often is it read/ checked? _____

3.) Who is responsible for checking the meter? _____

4.) To your knowledge, does the meter reading correspond to the water bill/charges?

Yes ☐

No ☐

Section D: Quantity

1.) How often do you get water supply services in a week?

_____

2.) Is this frequency consistent?

Yes ☐

No ☐

3.) Is the water supplied in a week adequate for household use?

Yes ☐

No ☐

4.) What other uses for water do you have apart from household use?

Yes ☐

No ☐

If no explain_____

Section E: Challenges

1) What challenges have you encountered as a result of the water service delivery project?
2) In your opinion, what improvements could be done on what already exists from the project to improve water service delivery?

Appendix II: Key Informant Questionnaire

Dear Respondent,

My name is Christine Muhoro, a postgraduate student at Moi University-School of Human Resource and Development. I am conducting a study on the *Implementation of Public Private Partnership Strategies in Water Service Delivery.*

I would appreciate it if you took your time and respond to my questions. This information gathered will be strictly used for academic purposes only and will be treated with utmost confidence.

Section A: Respondent Information

1. Years of experience 3-5 ☐ 6-8 ☐ 9-11 ☐ 13-15 ☐ Above 15 ☐
2. Gender Male ☐
   Female ☐
3. Training on PPP and/or water service delivery
   Yes ☐
   No ☐

SECTION B: Implementation of PPPs in Water Service Delivery in Kenya.

1. Which of the following types/models of PPPs are you familiar with?
   OBA ☐
   BOOT ☐
   BOT ☐
   Lease ☐

2. In your opinion, which type/model of PPP do you think is most suitable for water service delivery?
   OBA ☐
   BOOT ☐
   BOT ☐
   Lease ☐
3. What criteria determine if a project is suitable for a PPP?

4. In your opinion, do you think the implementation process is vital towards the success of a PPP project in water service delivery?

   Yes ☐

   No ☐

   Explain_____

5. To the best of your knowledge what are the critical parts of the implementation process?

   _____

SECTION C: Viability of PPPs in Water Service Delivery in Kenya.

6. In your experience, what are the benefits of using PPPs as strategies?

   _____

7. What determines the success of a PPP in water service delivery?

   _____

8. How are risks allocated in PPPs projects for water service delivery?

   _____

9. How is the return on investment determined in a PPP project for water service delivery?

   _____

10. To the best of your knowledge, how would you define an effective and efficient policy framework for PPPs in water service delivery?

    _____

SECTION D: Challenges in PPP Implementation

11. In your opinion, does the preparation phase of a project determine its success?

    _____

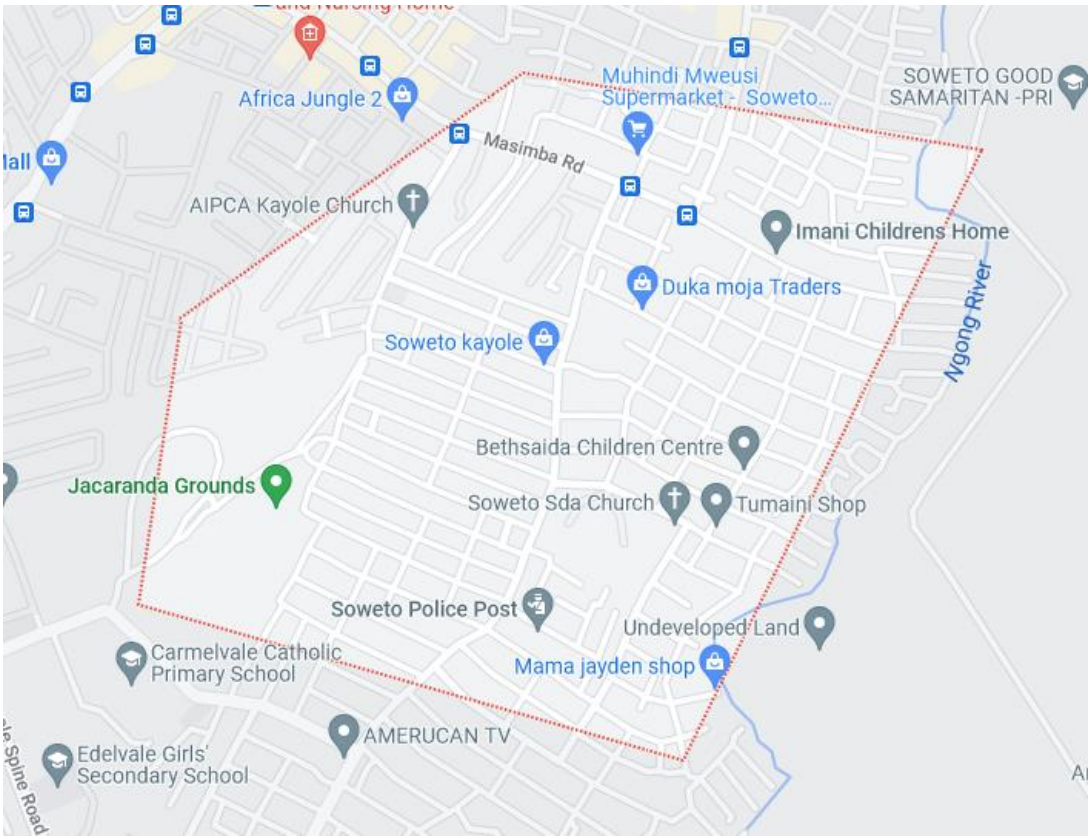
12. How important is a baseline study to the implementation stage of a water service delivery PPP project?

    _____

13. In your opinion, do the current institutional frameworks enhance success of water service delivery PPPs?

    _____

Appendix III: Map of Kayole Soweto Kenya



Appendix IV: Research Permit NACOSTI

THIS IS TO CERTIFY THAT:
MISS. CHRISTINE WANJIRA MUHORO
of MOI UNIVERSITY, 61117-200
Nairobi,has been permitted to conduct
research in *Nairobi County*

on the topic: *PUBLIC-PRIVATE PARTNERSHIPS STRATEGY IN WATER SERVICE DELIVERY, FOR URBAN AREAS.*

for the period ending:
30th July,2019

Permit No : NACOSTI/P/18/80523/23856
Date Of Issue : 1st August,2018
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation