



**PRIVATE WATER SUPPLY AND WATER SERVICE DELIVERY IN URBAN  
AUTHORITIES IN UGANDA. A CASE OF WAKISO TOWN COUNCIL, WAKISO  
DISTRICT.**

**BY**

**NATHAN LUJUMWA**

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**DECLARATION**

I, **NATHAN LUJUMWA**, do hereby declare that this dissertation is my original work and has never been submitted to any University or academic Institution for any academic award before.

Signed.....

Date.....

**APPROVAL**

This study was conducted under my supervision and the dissertation has been submitted for examination with my approval as a Supervisor

Signature.....

Date.....

Dr. Stella Kyohairwe

**UMI SUPERVISOR**

Signature.....

Date.....

Mr Michael Kiwanuka

**UMI SUPERVISOR**

## **DEDICATION**

I dedicate this work to all members of my family for their gumption to preserve our strong family ties and values, even under some of the most difficult circumstances imaginable.

In a special way, the study is dedicated to my children Nicole, Nelson and Norman for all the support and sacrifice for the times I have not been able to attend to them while attending to this work even when they needed my attention most.

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For his mercy and grace, God is faithful and all the glory be upon thee. Any errors and omissions are entirely mine.

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## **LIST OF ACCRONYMS**

APWO	Association of Private Water Operators
CBO	Community Based Organization
CVI	Content Validity Index
DCC	District Contracts Committee
DWD	Directorate of Water Development
FGD	Focus Group Discussion
GPOBA	Global Partnership on Output-Based Aid
IFC	International Finance Corporation
IVA	Independent Verification Agent
MDG	Millennium Development Goals
MOWE	Ministry of Water and Environment
NWSC	National Water and Sewerage Corporation
OBA	Out Based Aid
OECD	Organization for Economic Cooperation and Development
O&M	Operations and Maintenance
PEAP	Poverty Eradication Action Plan
PH	Power of Hydrogen
PPPs	Public Private Partnerships
PSP	Private Sector Participation
PWPs	Public Water Points
RGC	Rural Growth Centres

SSP	Small Service Providers
UMI	Uganda Management Institute
UWSD	Urban Water Sector Development
WA	Water Areas
WSSB	Water Supply and Sewerage Board
WSS	Water Supply and Sanitation

## **ABSTRACT**

The study investigated the effect of Private Water Supply on Water Service Delivery in Urban Authorities in Uganda, taking a case of Wakiso Town Council, Wakiso District. Specifically, the study examined the effect of financing, systems design and management of private water suppliers on water service delivery in Wakiso Town Council.

The study was a case study design which used questionnaires and interview guides to observe a sample of 63 respondents.

The findings of the study revealed that financing, system design, and management, of the private water supplier had a positive significant effect on water supply delivery Town councils in Uganda.

The study recommended that the Government of Uganda through Town Councils and the District Councils be involved in financing private water supply, more private water suppliers be allowed into the market and more involvement of the local people in private water supply including sensitization campaigns among residents about private water supply should be carried out.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Introduction**

This study was an investigation of relationship between Private Water Supply and Water Service Delivery in Urban Authorities in Uganda, a case study of Wakiso Town Council, Wakiso District. Private Water Supply was the independent variable while Water Service Delivery was the dependent variable. This chapter presents the background to the study, the statement of the problem, the purpose, the objectives, the research questions, the scope of the study, the significance and operational definitions of terms and concepts.

#### **1.2 Background to the Study**

The background to the study is categorized under historical, theoretical, conceptual and contextual perspectives.

##### **1.2.1 Historical background**

Frustration of service delivery by public sector in the 1970s and 1980s led to the expanded experimentation with private sector provision in many countries (Warner 2008). Private provision of public services was popularized by the United Kingdom and United States Governments of the 1980's after they deliberately adopted the privatization policy. The motives were many but the anticipation of reduced fiscal pressures and higher efficiency underscored the expectations of the Governments.

In the 1980's Governments world over found themselves with large budget deficits in the aftermath of the oil crisis and the subsequent debt crisis; both domestic and foreign borrowing could not sustain financing of the deficits, but make it worse.

(Ancarani, 2003) Private involvement was seen as a way of improving cash flow by reducing the outflow of cash (in the form of subsidies and grants) to the loss making and inefficient state owned enterprises. It was believed that due to incentives originating from agency, property rights and competition the private sector was bound to deliver services more efficiently. The increasing inadequacy of traditional public organizations in satisfying their public clients' requests therefore pushed toward externalization of public service provision (Ancarani, 2003). It was envisaged that private sector involvement enables competition which results in improved outcomes such as greater efficiency, higher quality of service, a clearer focus on clients and better value for money (Parker 2000 in Ancarani 2003); that the private sectors' skillful management and capacity to innovate would lead to increased efficiency (Hemming 2006).

The privatization of water service supply is the subject of what is arguably the most contentious debate in current development discourse. Political battles on this issue are being fought from halls of international conferences to the streets of cities where Governments are increasingly reliant on private sector participation. At the core of these battles is a spectrum of positions, characterized by two fundamentally-opposed approaches. On one hand is the idea of managing water as an economic good in an environment using market-like and market-friendly instruments, where prices function as the main mechanism that guide decisions on allocation, distribution and consumption. (Parker 2000 in Ancarani 2003)

On the other is the idea of managing water as a common good, the property of all, to which access ought to be considered a human right that is respected, protected, promoted, and enforced by States and Governments. In between these two are other approaches that strive to achieve a balance between the proposition of water as an economic good and of water as a human right. (Parker 2000 in Ancarani 2003);

For much of post world war II, the majority of Governments both in the developed and developing Countries entrusted the delivery of services such as transport, telecommunication, energy, water, health, education, policing, defense, etc. to the Public sector/Government departments and State owned Enterprises (Grimsey, 2002; Harris 2003). It was taken for granted that the existence of market failure and imperfections implied that Government was the only plausible provider of most goods and services. In many Countries, the situation was that Government builds or purchases a physical asset, retains ownership, uses public sector employees or a private contractor to deliver the required service (Grout 2003) – the traditional approach to procuring infrastructure and delivery of public service.

However this mode of procuring infrastructure and delivering public services proved untenable as the public sector entities mandated with provision and execution were characterized by insufficient Government investments, budget deficits, inefficiencies, poor pricing policies, corruption, overstaffing, mismanagement, and stagnation (Harris, 2003, Rwelamira 2004) and therefore did not provide value for money to the public clients.

Hence in the last three decades Governments, both the developed and the developing world have been moving away from the traditional approaches; where Government is solely and completely involved, to alternative arrangements that embrace more private sector involvement, in provision and delivery of public service. Concomitant to this are persistent debates on the appropriateness of private provision vis-à-vis public sector provision; whether the public sector or private sector is a more efficient service provider is still a contentious and empirical issue since the results are mixed.

### **1.2.2 Theoretical Background**

This study was underpinned by Boyce (1996) theory of privatization which is fundamentally based on the notion of competition and the efficiency and choice that it engenders. The theory according to the author, Privatization is the practice of engaging the private sector in some aspect of the functions and responsibilities of Government operations. Ultimately, Governments must decide if acquiring a desired service is best done through by their own public agencies or if it should be purchased from private vendors at a price dictated by the market. This simple question of 'make or buy' is the very essence of privatization policy and process. Arriving at an answer to that question, however, is as complex and diverse as the services Governments provide and the public that they serve. (Boycko et al 1996).

Moreover, Kettle (1993) examines privatization and specifically contracting from a different vantage point. He notes that competition is not a magic bullet and that a market cannot be competitive unless the buyer can define what it wants to buy. Kettle asserts that strong, competent government managers trained in contract management who have policy expertise in the service area they are contracting for are needed.

The author's analysis is focused on how power is shared between Government and private markets with findings that suggest Government is not a "smart buyer" of goods and services with public managers often facing legislative and fiscal constraints that limit program efficiency and effectiveness.

One policy area is social services because the emphasis is placed primarily on awarding the contract rather than defining and ensuring that the terms of the contract are being met.

Kettle (1993) specifically questions the extent to which public managers know "what to buy, how to buy it, and how to judge what it has bought." He notes that "the irony is rich," in describing how advocates for entrepreneurial government and privatization cite extreme cases of fraud, waste, and abuse, yet most of the criminal activity has come from government contractors. This occurs as a result of weak oversight and monitoring efforts and administrative capacity shortfalls in which Government does not allocate the necessary resources for efficient contract management and accountability.

A second issue Kettle raises is the blurring of the boundaries between the sectors. The continued reliance on the non profit sector for the delivery of social services has made it difficult to distinguish between public and private accountability.

In highlighting the level of sector indistinguishability, Kettle identifies five standards that compete to shape the public interest. These include efficiency, effectiveness, capacity, responsiveness, and trust and confidence.

He concludes that Government's increasing ties with the market requires aggressive and competent management, with anything less than that being a recipe for not fulfilling the five standards mentioned above and necessary for preventing corruption.

Despite the many privatization possibilities available to the public manager, contracting remains far and away the largest form of privatization used. A 2002 survey conducted for the Council of State Governments by Keon S. Chi, a respected and widely published expert on privatizations, along with Kelley A. Arnold and Heather M. Perkins, asked state budget and legislative service directors what forms of privatization their state currently implements.

The overwhelming majority of directors (86.9%) reported to use contracting; the next most common form was public-private partnership, which was used nearly half as often.

### **1.2.3 Conceptual background**

The key concepts in this study were private water supply and water service delivery. Private water supply refers to any water supply which is not provided by a statutory (public) water undertaker and in which the responsibility for its maintenance lies with the owner or person who uses the supply.

It includes any water system serving or intended to service water for human consumption or for domestic uses or purpose on one lot. A private water system includes public water systems and auxiliary water sources that enter a structure to supplement flushing toilets or laundry washing. (Nickson, Andrew & Francey, 2003)

Private water systems contractor or “contractor” means a person who is registered as a private water systems contractor in accordance with rules of the Administrative Code that constructs or develops a well for use as or as a part of a private water system or otherwise constructs a private water system, installs pumping equipment for a private water system, alters a private water system, repairs a private water system, seals a private water system, or performs any combination of those activities for hire; or, who inspects or evaluates private water systems for hire. (Nickson, Andrew & Francey, 2003).

Water service delivery, on the other, refers to the abstraction from a water resource, conveyance, treatment, storage and distribution of potable water, water intended to be converted to potable water and water for industrial or other use, where such water is provided by or on behalf of a water services authority, to consumers or other water services providers.

This includes all the organizational arrangements necessary to ensure the provision thereof including, amongst others, appropriate health, hygiene and water resource use education, the measurement of consumption and the associated billing, collection of revenue and consumer care.

#### **1.2.4 Contextual background**

The Ugandan water supply and sanitation sector has made spectacular progress in urban areas since the mid-1990s, with substantial increases in coverage as well as in operational and commercial performance. (Mugisha et al, 2006). Sector reforms in the period 1998-2003 included the commercialization and modernization of the National Water and Sewerage Corporation (NWSC) operating in cities and larger towns, as well as decentralization and private sector participation in small towns. (World Water Assessment Programme, 2006). These reforms have attracted significant international attention.

However, 40% of the population still had no access to an improved water source and 57% had no improved sanitation in 2004. Low access to urban sanitation and waste water treatment, compared to the progress achieved on urban water supply, is an area of concern.

It is apparent that while improvements in collection efficiency have been registered, the general trend indicates that the unit cost of water has gone up for both identified and non-identified reasons. The unit cost for water in small towns is higher than for the large towns.

This higher tariff in small towns has continued to negatively affect the accessibility of clean and safe water to the poor in the small towns.

It should be noted that the cost of the water to the consumer is higher than the tariff when the water is not piped into the home (*Performance Sector Report, 2007*).

It is formally known that informal private operators and vendors exist. However, the scope and extent of their contribution in the water and sanitation sector has not been established and or documented. Any attempts to capture and assess this role to the water and sanitation sector will not only help in understanding their contribution but will also bring into perspective the requirements for enhancing efforts towards achieving sector targets and MDGs.

### **1.3 Statement of the Problem**

As of the case with the rest of urban councils of Uganda, Wakiso Town Council has faced water crises. The crisis was not a lack of but a limited access to clean and safe water. According to Wakiso District data from March 2004, it is estimated that almost 50% of the population did not have access to safe drinking water ( Wakiso District, 2005). Wakiso District data further indicates that people travelled as far as 3 km to reach a water source. More than 36,000 residents of Wakiso Town Council are without water because of the high costs of operating the generator that powers the water pump. The water that supplies Wakiso town council is pumped from two boreholes that are found in Kasengejje and Kisimbiri villages. The generator was provided to the Town Council in 2008 by the Ministry of Water and Environment through the Directorate of Water Development.

However the Town Council found it unprofitable to buy fuel to operate the generator that powers the water pumps. The council spends shillings 140,000 to pump water from which they get shillings 160,000. The other alternative would be to power the water pumps using Hydro-electricity but the rampant theft of transformer fuel has made it complicated.

This necessitated to bring in private water suppliers JOBATOV Joint Ventures was therefore contracted. However, it was not clear whether the contracting of JOBATOV has solved the water problem especially regularity, quality, quantity, reliability and accessibility of water in Wakiso Town Council. This necessitated carrying out this study on Private Water Supply and Water Service Delivery in Urban Authorities in Uganda, a case study of Wakiso Town Council, Wakiso District.

#### **1.4 Purpose of the Study**

The purpose of the study was to examine the relationship between Private Water Supply and Water Service Delivery in Urban Authorities in Uganda, taking a case study of Wakiso Town Council, Wakiso District.

#### **1.5 Objectives of the study**

The objectives of the study included the following:

1. To examine the effect of private water financing on water service delivery in Wakiso Town Council
2. To assess the effect of private water supply systems design on water service delivery in Wakiso Town Council
3. To determine the effect of private water supplier management of on water service delivery in Wakiso Town Council

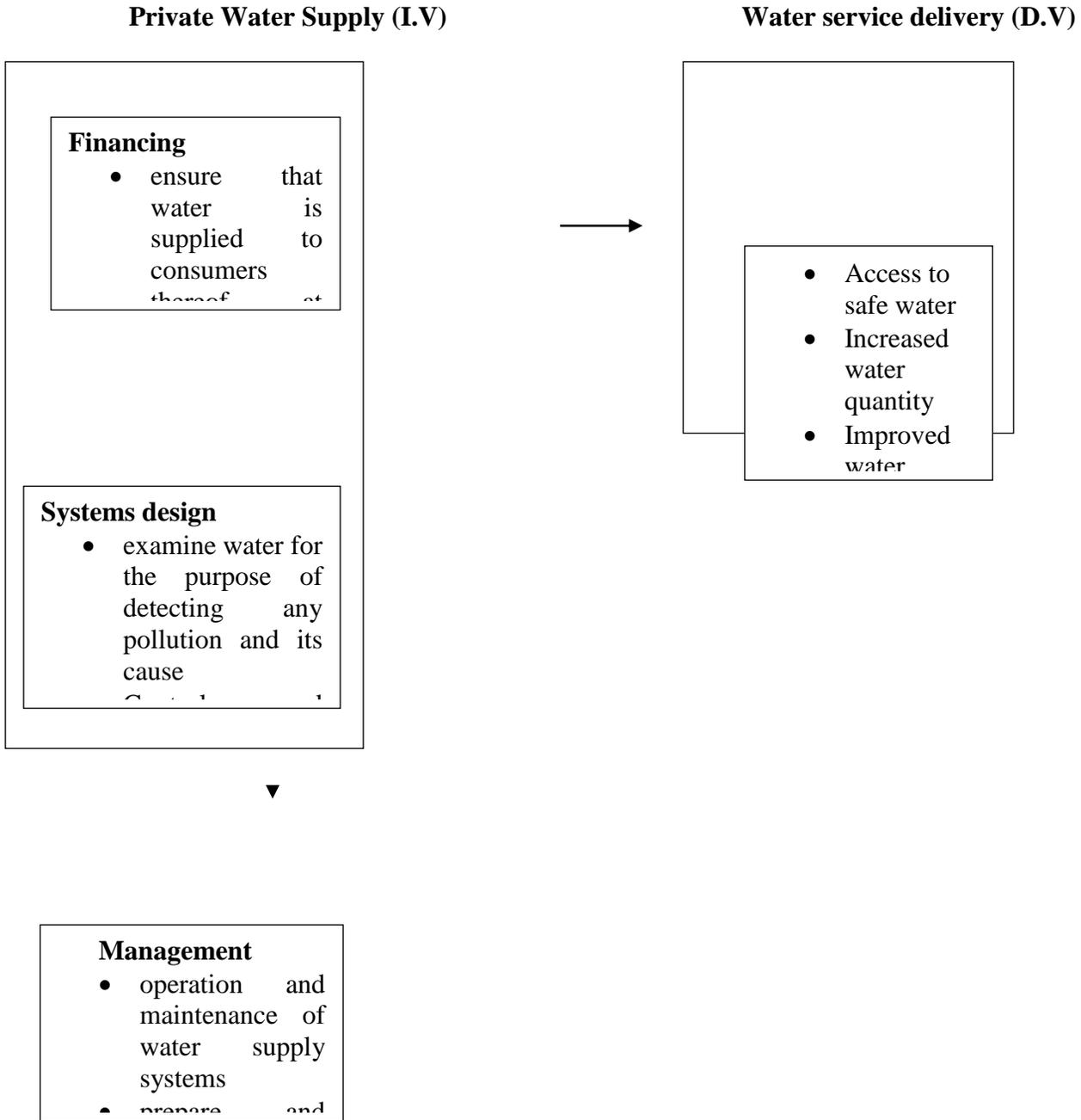
## **1.6 Research questions**

1. What is the effect of private water financing on water service delivery in Wakiso Town Council?
2. How does private water supply systems design affect water service delivery in Wakiso Town Council?
3. What is the effect of private water supplier management of on water service delivery in Wakiso Town Council?

## **1.7 Hypotheses**

1. There is a positive significant relationship between private water service delivery in Urban Authorities of Uganda.
2. There is a positive relationship between systems design of private water suppliers and water service delivery in Urban Authorities.
3. There is a positive relationship between Management of private water supply operations and water service delivery in Urban Authorities.

**1.8 Conceptual framework showing the relationship between the Private water supply and water service delivery in Urban Authorities in Uganda**



### **1.9 Significance of the study**

Any policy decision at macro level, to involve private sector in service delivery for efficiency gains, must first assess whether the salient conditions that justify efficiency are available that is, competition, management, property rights etc, so that if unavailable, Government policy deliberately and simultaneously creates these conditions. This will be especially beneficial to Wakiso Town Council.

The study applied the market phenomena on a developing country and highlights the flaws that need to be addressed. That applying the concept of the market whole sale does not yield anticipated positive results. Introducing a one-fit-all policy, from one context will normally not work if the basic conditions justifying it are not dealt with. Conditions for controlling market failure must be available. This will be relevant to the Ministry of Water and Environment (MWE), and the donor community.

The study will also act as a secondary source of data for future students, academicians, researchers and policy makers in the field of privatisation and public administration and management and other related disciplines.

### **1.10 Justification of the study**

The water sector is one of Uganda's priority areas for poverty eradication. It is Government's desire to increase access to safe water by the population to 100% by the year 2015. Accordingly, the National Water Policy launched in 1999 specifies the guiding principle in the delivery of water services as "some for all, rather than all for some".

The Government has long recognized that resource deficiencies and weakness in the delivery of basic services are a serious constraint to the improvement of the people's welfare. To remove these constraints the National water policy has been refocused on three key approaches: Decentralization of delivery of social services, including water and sanitation. Decentralization involved the devolution of power and responsibilities to Local Authorities with a view to improving the quality, efficiency, and targeting of basic services. Involvement of local communities in decision making about location of water sources was perceived as the best option of increasing people's access to safe water: Commercialization and privatization of delivery of safe water, especially in commercially viable areas. This justified the need for a study on effectiveness of private water supply and water service delivery in Wakiso Town Council, Wakiso District.

## **1.11 Scope of the study**

### **1.11.1 Geographical scope**

Geographically, the study was carried out in Wakiso Town Council, Wakiso district. Specifically, 12 (twelve) zones/cells of the Town Council were covered. These were Kisimbiri zones A, B and C, Mpunga, Kavumba, Konna, Kayunga, Gombe-Kayunga, Salla, Namusera, Kasengejje and Ssenge. Additionally, employees of Wakiso District Local Government, Town Council and those of private water suppliers were engaged.

### **1.11.2 Content scope**

The content scope was limited to the private water supply and water service delivery in Urban Authorities in Uganda. Specifically, the study examined the financing and investments of the private water suppliers, assessed the system designs and management and scrutinized the management and operations of private water suppliers in Wakiso Town Council.

### 1.11.3 Time scope

The project covered the period between 2001 when the private water operators were introduced in Wakiso Urban Authority and 2013

### 1.12 Operational definition of terms

**Quantity** is the simplest indicator conceptually and the most commonly used for monitoring and comparing between services. It is typically measured in terms of liters per capita per day (lpcd).

**Quality** refers to both microbial and chemical quality of the water, including a number of different sub-indicators (i.e. biological contamination and several physical parameters).

**Accessibility** refers to the ease with which people can get water. We feel that if there is a single indicator for this, it is time per day spent fetching water, as this would incorporate a number of traditional barriers to reducing access such as distance and waiting time. This can be measured in minutes per capita per day (mpcd).

**Reliability** (or security) refers to the extent to which the service performs according to expectations. Typically this is expressed as the percentage of time that the service is (not) fully functional.

For the purposes of this study, we used the term '**Privatization**' to mean the partial or total transfer of managerial control of a water undertaking from the public sector to a private operator. This definition of privatization encompasses a number of arrangements ranging from management contracts to leases/concessions and full divestiture. It broadly coincides with the concept of private sector participation (PSP).

Wakiso Town Council is answerable to access to safe water and quality because residents pay a lot of taxes that should be reflected in service delivery.

The key indicators are distance of safe water to the homes of residents, regularity of the water supply and absence of contaminations or water borne diseases in the water provided.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The study investigated the relationship between Private Water Supply and Water Service Delivery in Urban Authorities in Uganda, a case study of Wakiso Town Council, Wakiso District in Uganda. This chapter reviews literature relating to the study. The theoretical framework used reviewed first was premised on the stand point of private water supply and accessibility to safe water. This was a form of a situational analysis. The actual review is presented objective by objective, and finally a summary of review is presented.

#### **2.2 Theoretical review**

In reality privatization has never occurred according to the handbook rules of ordinary market transactions. Not even in advanced market economies can privatization transactions be described by the Walrasian or Arrowian, or Leontiefian equilibrium models, or by the equilibrium models of the game theory. In these economies transactions of privatization take place in a fairly organic way – which means that those are driven by the dominance of private property rights and in a market economy. But despite this fact Western privatization also some peculiar features as compared to ordinary company takeovers, since the state as the seller may pursue non – economic goals. Changes in the dominant form of property change positions and status of many individuals and groups in the society. That's why privatization can even less be explained by ordinary market mechanisms in transition countries where privatizing state-owned property have happened in a mass scale and where markets and private property rights weren't established at the time process of privatization began.

Despite the fact that property rights are the keystone of an economic system and provide the basis for trade and a market economy, until 1960s there almost was no theoretical work on the central role they play in economic development. Until Coase, Demsetz, and Alchian began writing, economists were taking property rights as a given and their economic analysis lied on the assumption that the western-style rules and norms regarding the use and allocation of property were present. This assumption is usually valid in developed capitalistic world, but not in the areas where those institutions are absent.

Along with property right issues phenomenon of privatization has come in the focus of economic analysis in last few decades of previous century. However, people have recognized importance of private property much before that. According to the theory of natural law, property and property rights are considered to be one of the natural rights that belong to people. The idea of natural right has roots in the philosophy of ancient Greeks, even before Aristotle, in the works of Greek stoics (5th century before Christ). Romans stoic school, which put moral values above all other values, took over the idea of natural rights. Digesta, the piece that systematizes and provides easier implementation of very complex Roman law at the time, begins with three famous Ulpianus law commandments 1. Live honestly - *Honeste vivere* 2. Don't offend others - *Alterum non laedere* 3. Everybody should get what belong to him - *Suum cuijue tribuere*. (Novi , 1998)

The third commandment, concerning answer on the question: how everybody could get what belongs to him is related to property rights – one of the basic institutions of the society. The issue of property was not discussed only in economic theory.

Thus one of the characters in Gede's literal opus, the hero from Greek mythology Epimeteus asks his brother Prometheus<sup>3</sup>: "What belongs to you?". Clever Prometheus answers: „Only things that are result of my activity: nothing more and nothing less than that". The whole history of civilization can be viewed in between the Ulpianus' requirement and Prometheus' answer. (Novi , 1998)

When we speak on property rights and privatization in economic terms, as many other economic ideas, this one was also discussed in Adam Smith's work. He writes on privatization in his *An Inquiry into the Nature and Causes of the Wealth of Nations*: „As soon as the land of any country has all become private property, the landlords, like all other men, love to reap where they never sowed, and demand a rent even for its natural produce (Novi , 1998)

“When the crown lands had become private property, they would, in the course of a few years, become well-improved and well-cultivated...the revenue which the crown derives from the duties of customs and excise, would necessarily increase with the revenue and consumption of the people. In every great monarchy of Europe the sale of the crown lands would produce a very large sum of money, which, if applied to the payment of the public debts, would deliver from mortgage a much greater revenue than any which those lands have ever afforded to the crown...”(Novi , 1998)

It is clear that privatization in transition countries has features of economic, political and social phenomenon, but there was no clear answer in theory whether that is the case in the West. Vickers i Yarrow (1988) say that privatization on the West is very high on the political agenda<sup>9</sup>, but they explore its economic consequences,

trying to prove that privatization is just an economic phenomenon, and as such privatization transactions are as same as regularly market transaction with some special features. However, in case studies they've presented in the book, political causes and implications of many activities related to the privatization transactions in the West can not be avoided. In other words political dimension of privatization is evident both in-ex socialist countries with dominate property, and in the societies with dominant private property.

Feasible theories of privatization in modern economic history originate from institutional theory of firm, introduced by Coase, and later developed by Demsetz. Coase has also dealt with issue of privatization within theory of transaction costs (social costs) (Coase, 1960). These theories served as a base for the study of Al Chian and Demsetz, (Demsetz, 1988) O.E. Williamson (Williamson, 1985) and Pejovich who founded the theory of property rights. These theories have its roots in Austrian school of economics and can be related to von Hayek's and von Mises's critics of collective economic systems.( Mises, 1935)

All of these theories describe what conditions are necessary and sufficient so as private property can prevail in a society. These theories suggest that individual economic agents, whether they are individual owners or firms, form foundation of economic system.

If private property is prevailing then individuals and firms can act as autonomous economic agents in economic system. Besides, these theories explain the transactions among economic agents through which property rights can be and are actually being exercised.

Theory of transaction costs, the theory of firm and property rights theory give a clear picture what mass privatization will give as a result at the end.

But, none of them deals too much with the features of the path how to get there. And that was the source of many critics addressed on these theories. But argument that theories of „organic“ evolution of property rights are not giving instructive advices how to transfer society from the point where state or collective property prevails, to the point where private property prevails has not strong point. Especially having in mind the fact that all attempts and empirical studies aimed to determine which privatization method is the most effective and give the best results have failed. The same methods implemented in different countries give completely different results; depending on the circumstances in the environment privatization is taking place.

These theories developed much before the transition process has started and if they had given any instructions on how to privatize, they would probably have failed. (Pejovich, 1990) On the other side, when we speak about the choice of privatization method, even though the theories of organic evolution of property rights don't give clear instructions which privatization method or model will give the best results, they indicate some important features of privatization transaction that can serve as an benchmark for decision makers who manage privatization processes.

The Coase's theorem provides that efficient allocation of resources doesn't depend on original allocation of property rights over resources, if 1) there are no transaction costs and 2) property rights are clearly defined. The transaction costs are costs of exchange of property rights. They include direct costs of exchange (seeking opportunities for exchange, collecting information, negotiation costs, fees economic agents must pay in order to complete exchange transaction) and

costs of maintaining institutional structure needed for any kind of economic activity to take place (judiciary, police, infrastructure). Clearly defined property rights<sup>24</sup> means that the property rights are protected and that owners can freely exercise property rights and use their property according to their free will. The protection of property rights means that the state guarantees inviolability of private property and strong commitment that the state won't usurp private property through high taxes. (Coase, 1960)

## **2.3. Related Literature Review**

### **2.3.1 Financing of Private Water Suppliers and water service delivery**

It is increasingly recognized that a vital role is played in the provision of water and sanitation services in Sub-Saharan Africa by small service providers (SSPs). These come in many forms, including informal private sector suppliers, community-based organizations (CBOs), and households as self-providers.

Recent studies suggest that their share in total services is high, especially when it comes to the services for the poor in both rural and urban areas. For example, there are an estimated 12,000 water schemes managed by communities in rural areas in Ethiopia; CBOs account for about 30 percent of serviced rural population in Kenya; and private informal providers account for 10 percent of the serviced population in urban areas in Kenya (WSP-AF 2003).

As strategies to meet the Millennium Development Goals (MDGs) are explored, the role of these small providers needs to be better understood. While many different measures are necessary to strengthen their role in service delivery, one constraint emphasized in several studies is their lack of access to credit. To remedy this, it is necessary to understand the nature of their demand for finance and explore sustainable measures to improve their access to credit.

The microfinance sector in Sub-Saharan Africa is still relatively young. The vast majority of MFIs in the region is still in the start-up and/or consolidation phase and are grappling with capacity, outreach, and viability issues. (Brook and Smith, 2004).

Output-based subsidies have been proposed as a means of giving private operators the financial incentive to provide better services to poor groups (Brook and Smith, 2004). The basic principle is to provide financial inducements in direct proportion to some desired output, such as water sold to or sewage collected from households in low-income neighborhoods. An output-based aid approach has, for example, been piloted with Aguateros in Paraguay, (Drees et al., 2004).

On the grounds that the Aguateros provided adequate services but tended to concentrate on more affluent consumers, pilot projects were designed to get the local companies to bid for extending connections. The subsidy required per connection (US\$ 150 in the first phase) was less than the implicit subsidy for public utility connections. Indications are that, while it may be difficult to find the optimal bidding and contracting procedures, output-based subsidies through aguateros can provide an important alternative to public provisioning (Drees et al., 2004). Output-based contracts could also be used to help extend other water and sanitation providers from the wealthier areas where they have emerged, to the low-income areas where profits may be insufficient to support acceptable services.

Ironically, private participation, based on concessions giving sole rights to water and sewerage systems to a contractor or concessionaire, can be a major threat to independent water and sewerage providers.

Indeed, the argument that there is a “natural monopoly” in water and sewerage has helped to create situations where monopolies are actually created by contract. A number of the independent water networks that have been documented are threatened by the (uncertain) expansion of the utilities. In Karachi, the fact that a major donor-funded sewerage project was planning to ignore the pre-existing sewers constructed locally became a point of contention (in this case, the sewers were not operated by a private company, but the principle is similar) (Hasan, 1999).

In collaborating with independent water and sanitation providers, Governments need to find a balance that avoids being so antagonistic to independent water providers that the important services they can provide are lost, without being so supportive that customers end up forgoing access to even better and less expensive services from the utility’s network.

### **2.3.2 System Designs of Private Water Supply and water service delivery**

Currently there is no internationally recognized scheme for the regulation or approval of construction products and chemicals although some countries have guidelines, standards, regulations or approval systems. (Virjee, 2002)

Methods used for the treatment of raw water will depend on the properties of the water and the presence and concentrations of any contaminants. Ground waters usually have low levels of colour and turbidity and consistent microbiological quality, although water from shallow wells and some springs may be more variable. Particular problems may include high or low pH value and alkalinity and high concentrations of iron, manganese, nitrate, chlorinated solvents or pesticides.

Surface waters may have high levels of colour and turbidity and exhibit poor microbiological quality. Quality may be variable and deteriorate following periods of heavy rainfall. Other problems may include low Power of Hydrogen (pH) value and alkalinity and high concentrations of aluminum, iron, manganese, nitrate or pesticides. (Toyoshima, 2002)

Pollution and natural variations in water quality are the main problems associated with stream and river sources that need to be considered when siting and constructing an intake.

Water may be pumped directly from the stream or river or it may be collected from the ground in the immediate vicinity of the stream or riverbank. The advantage of the latter is that where the strata have suitable transmissive properties, supplies taken in this way are naturally filtered and of better quality than the river water itself. The intake should be located away from any features that might create turbulence during periods of heavy rainfall and increase the turbidity of the water. This means that intakes should not be situated on bends in the stream or river or at places where sudden changes in level occur. (BG Associates, 2003)

Most commonly, intake pipes are situated in the stream or river protected by a strainer to prevent the ingress of debris, fish and vermin. The inlet pipe feeds a settlement tank that allows particulate material to settle. The outlet of the tank, fitted with a strainer, should be situated above the floor of the tank to prevent contamination by sediment. The tank must be built of a material that will not impair water quality and designed to prevent entry of vermin and debris. The inlet pipe is situated in a small gravel-filled tank buried upside down in the stream or riverbank (alternatively, the tank may be buried in the stream or river bed). The water enters the tank through a substantial thickness of riverbank material.

This type of infiltration gallery will only be appropriate where the riverbank is sufficiently permeable to allow water to enter the tank at an adequate rate. The intake may suffer a gradual loss of capacity through siltation. (Rural Water Supply and Environment Project, 2001)

Spring water can be of good quality but it must be protected from possible contamination once it has reached ground level. In particular, it is necessary to consider the possibility of pollution from septic tanks or from agricultural activities.

A small chamber built over the spring, will protect it from pollution, provide storage for periods of high demand and serve as a header tank. The collection chamber should be built so that the water enters through the base or the side. The top of the chamber must be above ground level and it should be fitted with a lockable watertight access cover. An overflow must be provided appropriately sized to take the maximum flow of water from the spring. The outlet pipe should be fitted with a strainer and be situated above the floor of the chamber. (World Bank, 2003)

The chamber should be built of a material that will not impair water quality and be designed to prevent the entry of vermin and debris. The area of land in the immediate vicinity of the chamber should be fenced off and a small ditch dug upslope of the chamber to intercept surface run-off.

Shallow wells and boreholes are more at risk from contamination than deep wells and boreholes but if built and sited correctly, both may provide good quality water. Similar measures may be taken to protect both sources. The upper section of the shaft must be lined and sealed against the surrounding material to exclude surface water ingress and, in the case of shallow wells and boreholes, water from the upper layer of the aquifer. Such sanitary seals range from 6 to 30 m in depth and must extend above ground level.

Wells are often lined with masonry or concrete pipes and boreholes with steel, plastic or glass-reinforced plastic casings and sealed into the ground by a cement grout injected into the annular space between the casing and the surrounding ground. The shaft lining material should not affect water quality. (Toyoshima, 2002)

Where boreholes are drilled through a perched aquifer into lower water bearing strata, highly variable water quality may be obtained.

Use of such boreholes as sources of potable water should be avoided unless the area through the perched aquifer is sealed. (Toyoshima, 2002)

Provision of clean, safe and reliable water supply is an element of pillar four of the PEAP, which is concerned with improvement of the quality of life of the poor through delivery of social services. Access to safe water and sanitation reduces poverty through a number of ways: First, easy access to safe water, especially in rural areas, reduces the productive time wasted walking long distances to (and waiting at crowded) water points, thereby allowing people to engage in other productive activities (UPPAP II: 126). (Ministry of Finance, Planning and Economic Development, 2002),

In Uganda, water policies have also changed to reflect responsibilities of national governments to provide water. For instance, water is a key issue that is recognized in the Poverty Eradication Action Plan and since 1997, several reforms have been initiated in the water sector: The National Water Policy (1999), The Water Statute (1995), This is in agreement with study findings.

The National Water and Sewerage Corporation Statute (1995), and the Local Government Act (1997) to name a few. Most importantly, the National Water Policy is based on the principle, “Some for All, Rather Than All for Some” adopted from the 1990 “New Delhi Statement” to guarantee access to water for all Ugandans (UNESCO Report, 2006). However, in reality, this is not reflected on the ground.

### **2.3.3 Management of Private Water Suppliers and water service delivery**

In most countries, little attention has been devoted to the role that local companies play, and how they could be convinced to provide better services to the urban poor. This is not different from Wakiso Town Council

If local and national governments are to encourage these companies to play a more significant and positive role, they first need to review existing laws and regulations, particularly where they inhibit local companies from providing better services to the urban poor, or prevent local companies from competing to provide better services. (Chao-Beroff et al. 2000)

Community and civil-society groups may need to consider how they can engage with local companies. International development agencies may need to re-examine their own tendency to assume that more private-sector participation means engaging with national Governments and large multinational water companies, and find better ways of working with local companies. (Chao-Beroff et al. 2000)

Reviews of independent providers indicate that these small water companies are important, and have been growing in importance since the early 1990s, as public water utilities have failed to meet water demands. As indicated in the previous section, local water companies have also been gaining importance in public contracting. (Chao-Beroff et al. 2000)

Increasing the role of local water and sanitation companies is probably less controversial than increasing the role of multinationals. There is no obvious reason; however, to assume that promoting local water and sanitation companies will improve water and sanitation services for the urban poor: the impact will depend on the regulatory environment and the extent to which mechanisms are put in place that give local companies the incentive to provide improved services to low-income groups. Support for local companies should always be considered in relation to alternatives. This is often ignored.

Ideally, there should not be any programmes or projects designed to support local water and sanitation companies, just initiatives to improve water and sanitation provision that decide to support local companies if that is the best decision. There may be justification, however, for removing barriers that prevent local water and sanitation companies from playing a better role. (Lamb et al, 1998).

From a market perspective, the urban poor are likely to benefit from greater competition, particularly when that competition reduces their own dependence on entrenched public bureaucracies or private monopolies.

It can be difficult to distinguish between increasing competition by opening up opportunities for local companies, and restricting competition by creating new forms of (locally owned) private monopolies. As described in early sections of this paper, it can also be difficult to distinguish regulations that encourage quality improvement from those that reduce quantities. Unfortunately, such distinctions can be critical in determining whether promoting local companies is more likely to open up or close down opportunities for improving services in low-income areas. (Plummer, 2002).

The challenge of getting local water and sanitation companies to improve services for the urban poor depends upon the character of local water and sanitation companies. Local companies that compete or collaborate with multinational water companies for Government contracts at least superficially would seem to present a very different challenge from those, more like informal providers, which remain largely unregulated. For the former, the challenge is to create a contractual and regulatory means to exploit the advantages that local companies may have in providing services to low-income areas.

For the latter, the more immediate challenge will typically be to find the means to accommodate independent providers when they are improving service delivery. (Plummer, 2002).

For local companies operating under contract to government agencies, ensuring that the urban poor benefit is likely to entail designing the bidding procedures and contracts to give the contractors the greatest incentive to service low-income areas. This is unlikely to be achieved without some direct engagement on the part of urban poor groups and their representatives.

However, many of the issues are common to other pro-poor water and sanitation contracting, and do not need to be revisited here. The issues and options involving small local companies and small locations also raise a number of specific questions, involving local capacities and procedures (Plummer, 2002). As discussed in previous sections, local companies might be expected to be more interested in smaller contracts, and contracts in smaller locations. For a variety of reasons, however, while local companies may provide opportunities for providing better services to the urban poor, these opportunities will need to be strived for, rather than assumed.

Decisions about whether local contractors or multinationals (or public utilities) can provide better water and sanitation services to the urban poor clearly should not be divorced from the local context, including for example which local companies have an interest in competing for water and sanitation contracts, and how this is likely to evolve over time.

Ideally, countries would provide a framework within which the full range of possible providers, ranging from informal enterprises and local and multinational companies, to governmental and non-governmental organizations, can compete, politically as well as economically. (Many would argue that political competition should set the framework for economic competition.) Even where this ideal is far from attainable, improving the quality of political and economic competition is likely to be central. (Plummer, 2002).

A recent review of different forms that small water enterprises take noted that not only are both regulated and largely unregulated private water-network operators described in the literature, but also that regulation has important implications for their operation. Experience to date suggests that regulation can bring disadvantages as well as advantages, as follows (Myers, 2003 draft).

National and Local Authorities often face serious difficulties engaging constructively with independent water and sanitation operators. In most countries, the regulatory framework is designed around large monopoly providers, without serious consideration given to small independent providers. This can lead to a wide range of regulatory failures (Solo, 2003).

The regulation of monopoly providers, both public and private, has also proved to be difficult. Some would argue that regulation ill conceived and poorly implemented is worse than no regulation at all. But debates about whether there is a need for more or less regulation are similar to debates about whether there is a need for more or less private participation: they focus attention on what ought to be a secondary issue, particularly if the goal is to improve water and sanitation services to the urban poor.

To achieve this goal, more regulation may be involved in some locations, and less regulation in others. But, in most locations, it is likely to require regulatory reform – and how these reforms affect local companies can be critical to their success. (Solo, 2003).

#### **2.4 Summary of Literature Review**

The literature reviewed seems to be having a consensus on the contribution of private water supply on water service delivery generally. However the literature does not focus directly on private water providers and water service delivery especially in urban Councils of Uganda. The literature does not also suggest whether private water operations can improve accessibility to safe and clean water in terms of quality, quantity and regularity in urban local governments. It is such gaps like inadequate literature about Uganda's scenario and Wakiso Town Council particularly private water delivery in the literature that this study went out to fill.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

The study investigated the relationship between private water supply and water service delivery in urban authorities in Uganda, using a case study of Wakiso Town Council, Wakiso District. This chapter highlights the methods that were used to carry out the study. The chapter specifically presents the research design, study population, sample size and selection, sampling techniques and procedure. The chapter also presents the data collection methods and instruments, pre-testing of instruments, procedure for data collection, and data analysis.

#### **3.2 Research Design**

The study adopted a case study design. This design was chosen because it enabled an in depth investigation of the study problem. (Robert, 1994). The case study used both quantitative and qualitative approaches to complement each other. The inclusion of qualitative data measurement helped to illuminate other closely related problems that otherwise would not emerge with quantitative measurement tools. On the hand, quantitative data measurement made generalization of findings possible.

#### **3.3. Study population**

The population for the study included employees of private water suppliers, opinion leaders/ residents of Wakiso Town Council, both employees of Wakiso Town Council and Wakiso District Council. Conclusively, gender disparities and accommodation of age and physical sensitivities was considered.

Other respondents constituted key informants from the various sectors alluded to safe water provision like Wakiso Town Council in all, 20 employees of Wakiso District Council and Wakiso Town Council were selected, 15 employees of private water operators were also selected , 23 opinion leaders and 5 members of the Town Council executive committee were selected.

### 3.4 Sample Size and selection

The sample size was 54 basing on the statistical tables of Krejcie and Morgan (1970) cited in Amin (2005) for determining sample size. Sampling procedures are presented in table 1 below:-

**Table 1 showing the sample size**

<b>Category of respondents</b>	<b>Access Population</b>	<b>Sample size</b>	<b>Sampling Technique</b>
District/ Town Council Technical Planning committee members	20	16	simple random sampling
Employees of private water suppliers	15	12	simple random sampling
Opinion Leaders	23	20	simple random sampling
Town Council Executive committee	5	5	Purposive sampling
<b>Totals</b>	63	54	

*Source: Customized District and Town Council staff structures, 2005*

### **3.5 Sampling techniques and procedure**

Both random and non random sampling techniques were used in selecting elements in the samples. In particular, simple random and purposive sampling techniques were used respectively.

Simple random sampling was used to select respondents among the Technical Planning Ccommittee, Staff of private water suppliers and Opinion Leaders, using the lottery method (Amin 2005). The process involved assigning numbers to all elements in that access population category, displaying them on a board, putting them in a box and picking one at ago, randomly selecting numbers until the determined sample size for that population category. Simple random sampling was preferred in order to avoid bias, by giving an equal and independent chance to all elements in that access population category

On the other hand, purposive sampling was used to select Town Council Executive Committee members. Purposive sampling was chosen because this category had more relevant information in respect to the objectives of the study (Mugenda and Mugenda 2003) and (Amin 2005).

### **3.6 Data collection methods**

During data collection, the study used both qualitative and quantitative methods. These included surveys, face to face interviews, documentary review, and observation.

#### **3.6.1 Surveys**

Quantitative data was collected through questionnaire survey. The questionnaires were self administered to 18 respondents who filled them and were collected later after two weeks by the researcher. This was less expensive and saved time (Sekeran 2003).

Responses took the form of a rating on some scale (1 to 4) on a scale from “agree” to “disagree”), gave categories from which to choose (from potential categories of partner institutions with which a program could be involved), or required estimates of numbers or percentages of time in which participants engaged in an activity (from home to the water source).

### **3.6.2 Interviews**

Two types of interviews used in evaluation research like this one were: structured interviews, in which a carefully worded questionnaire is administered, and in-depth interviews, in which the interviewer does not follow a rigid form. In the former, the emphasis is on obtaining answers to carefully phrased questions. Interviewers are trained to deviate only minimally from the question wording to ensure uniformity of interview administration. In the latter, however, the interviewers seek to encourage free and open responses, and there may be a tradeoff between comprehensive coverage of topics and in-depth exploration of a more limited set of questions.

In-depth interviews were used and encouraged capturing respondents’ perceptions in their own words, a very desirable strategy in qualitative data collection. This allowed the meaningfulness of the experience from the respondent’s perspective.

### **3.6.3 Observations**

Observation was also appropriate for soliciting data for this study. Observational techniques were methods by which the study gathered first hand data on programs, processes, or behaviors that were being studied. The observation method provided enabled an opportunity to collect data on a wide range of behaviors in their natural settings. For instance, local people were seen trekking long distances to collect water from local sources such as springs, wells and boreholes, this implied that they were not connected to the piped water system.

### **3.6.4 Document review**

Documents were got from Wakiso Town Council and Ministry of Water and Environment. Documents were appropriate for this research especially that they were available locally, Inexpensive, Grounded in setting and language in which they occur, Useful for determining value, interest, positions, political, climate, public attitudes, Provide information on historical trends or sequences, Provide opportunity for study of trends over time and are Unobtrusive

### **3.7 Data collection instruments**

Data collection instruments included the following

#### **3.7.1. Questionnaires**

This had both structured and unstructured items. Selected respondents answered both open-ended and close-ended questions that included questions that had been generated by all the hypotheses in the literature review. Questionnaires were administered to officials of the District Council, Town Council and the general public. For this research, the researcher himself delivered the questionnaires. He gave the respondents the questionnaires and collected them later after they had filled them.

#### **3.7.2 Interview**

Interviews were conducted with employees of private water suppliers and Wakiso Town Council as key informants. Information collected using this method related more to the roles played in private water provision. This method involved contact between the researcher and respondents. These two were involved in a question–answer situation with the aim of eliciting necessary information. It is here that interview guides were applied.

### **3.7.3 Documentary Review Checklist**

Secondary source of information like the libraries, contract agreement, internet, newspapers, journals and magazines among others were used. This constituted research from both published and un published literature for example from dissertations, annual reports and publications like books recorded about private water supply. This enabled the researcher to get a wiser view of the topic under investigation.

## **3.8 Validity and reliability**

### **3.8.1 Validity**

The content validity of the instruments entailed the giving of the tools to experts (like water engineers and employees of Wakiso Town Council in the water department) who judged them through carefully and critically examining or inspecting the items which were in the instruments. The instruments were given to evaluate the relevance of each item in the instruments to the objectives. The experts rated each item on the scale very relevant (4), quite relevant (3), somewhat relevant (2) and not relevant (10).

Validity then was determined using the Content

Validity Index (CVI) which is given by the formula below

$$\text{CVI} = \frac{\text{Sum of items rated 3 or 4 by judges}}{\text{Total number of items in tools}}$$

Total number of items in tools

The research instruments were distributed to 9 experts to comment on whether they were valid. A total of 28 items were rated with 3 or 4 by the experts hence a CVI=0.82, a ratio high and above the target 0.70 recommended by Kathuri and Pals(1993).

### 3.8.2 Reliability

The researcher carried out statistical tests to ensure that the key research instruments used were reliable. A pilot study of randomly selected respondents was done. Mugenda and Mugenda (2003) suggested that the pilot sample may range from 1-10% and in this study 9%(6 respondents was taken. The pre-test was carried out using Cronbach’s coefficient alpha. As Sekarani(1992) points out that the closer the Cronbach’s Alpha to 1, the higher the internal reliability. Although Kathuri and Pals recommended for the Alpha to be at least 0.70, not all items scored that for instance systems design.

Important to note is that all variables scored close to one hence making the tools reliable.

**Table2: Reliability statistics**

Variable	Cronbach’s alpha	Cronbach,s based on standardized items	Number of items
Private water suppliers financing	.714	.714	4
Private water suppliers system design	.636	.670	10
Private water suppliers management	.579	.544	7

The Cronbach’s alpha results from the field data in Table 2 above showed an average coefficient of 0.64 which is above the 0.5 recommended by Amin (2005). This implied that the instruments were reliable

### **3.9 Procedure for data collection**

After approval of the proposal by the review panel, the researcher proceeded to the field for data collection with the introductory letter from the higher degrees department of UMI. This letter acted as an assurance to the respondents that the researcher's intention was purely academic and building confidentiality so as to enhance data collection. The researcher then went to the field to collect data. The data was then analyzed and interpretation of the findings, conclusions and recommendations were made.

### **3.10 Data analysis**

Data management exercise constituted coding, cleaning and editing of the collected data. The aim was to iron-out any inconsistencies elicited during data collection.

#### **3.10.1 Quantitative data analysis**

Quantitative data analysis involved the use of both descriptive and inferential statistics in the Statistical Package for Social Scientists (SPSS). Descriptive statistics entailed determination of means and measures of dispersion such as frequencies, percentages and standard deviations. Data was processed by editing, coding, entering, and then presented in comprehensive tables showing the responses of each category of variables. Inferential statistics included correlation analysis using a correlation coefficient and regression analysis using a regression coefficient in order to answer the research questions. According to Sekaran (2003), a correlation study is most appropriate to conduct the study in the natural environment of an organization with minimum interference by the researcher and no manipulation. A correlation coefficient was computed because the study entailed determining correlations or describing the association between two variables.

### **3.10.2 Qualitative data analysis**

Qualitative data analysis involved both thematic and content analysis, and was based on how the findings related to the research questions. Content analysis was used to edit qualitative data and reorganize it into meaningful shorter sentences. Thematic analysis was used to organize data into themes and codes were identified (Sekaran, 2003). After data collection, information of same category was assembled together and their similarity with the quantitative data created, after which a report was written. Qualitative data was interpreted by composing explanations or descriptions from the information. The qualitative data was illustrated and substantiated by quotation or descriptions.

## CHAPTER FOUR:

### PRESENTATION ANALYSIS AND INTERPRETATION OF RESULTS

#### 4.1 Introduction

The study investigated the relationship between Private Water Supply and Water Service Delivery in Urban Authorities in Uganda, a case study of Wakiso Town Council, Wakiso District in Uganda. This chapter presents the findings, analyses and interprets and the findings. Findings are presented in line with the objectives of the study. The chapter first presents the response rate, followed by the background information of respondents and the empirical findings.

#### 4.2 Response rate

The study response rate was computed using a formula  $R = \frac{\text{Number of complete surveys}}{\text{Number of participants contacted}} \times 100$

The findings are as below

**Table3: Response rate**

Tool	Target response	Actual response	Percentage
Questionnaire	37	34	91.8
Interview guide	26	20	76.9
Total	63	54	85.7

From table 3. above, out of the total 37 questionnaires administered, 34 responded giving a response rate of 91.8%. Out of 26 respondents targeted for interviews, only 20 were actually interviewed implying a response rate of 76.9%. The overall response rate was, therefore, 85.7%. This response rate was over and above the 70% put by Mugenda and Mugenda (2003), being good enough to validate the study findings.

### 4.3 Background characteristics of respondents

The background characteristics of respondents were investigated by the study. These in particular included: gender, marital status, age and occupation, and the findings are presented in the next subsections.

#### 4.3.1 Gender distribution of respondents

. The study observed the gender distribution of respondents and results are summarized in the Table 4 below.

**Table 4: Gender findings of respondents**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>
Male	51	80
Female	12	20
<b>Total</b>	<b>63</b>	<b>100</b>

*Source: Primary data*

The table 4 above shows gender findings of respondents. Females comprising a least proportion of 12 (20%) respondents and their male counter parts constituting the biggest percentage of 51(80%). This could have been because more males dominate urban governance than females in Uganda.

Despite the observed disparity in the gender distribution among respondents, the important implication was that both male and female were represented in the study.

#### 4.3.2 Marital Status of respondents

The study observed the marital status of the respondents and the findings are summarized in table 5 below:

**Table 5: Marital status of respondents**

Status	Frequency	Percentage
Single	16	24
Married	42	66
Divorced	05	10
<b>Total</b>	<b>63</b>	<b>100</b>

*Source: Primary data*

From table 5 above, findings indicate that the majority of respondents 42 (66%) were married, 16 (24%) single with only 5 (10%) divorced.

The implication of the above data is that all marital statuses were represented in the study making generalization of the findings possible.

#### **4.3.3 Age of the respondents**

The study observed the age structure of the respondents and the findings are presented in table 6 below.

**Table 6: Age of respondents**

Age range	Frequency	Percentage
18-30	14	22
30-45	44	70
45 and above	5	08
<b>Total</b>	<b>63</b>	<b>100</b>

*Source: Primary data*

The table 6 above illustrates the age structure of respondents the majority of whom 44 (70%) falling between age of 30-45, followed by those aged between 18-30 with 22% and those above 45 being only 8%. Generally, the respondents were mature enough to understand and appreciate the study since 78% were at least 35 year and above such respondents could be relied on to give accurate and valid information in the study.

#### 4.3.4 Occupation of respondents

The study established the occupation status of respondents and findings as summarized in Table 7 below;

**Table 7: Occupation of respondents**

<b>Occupation</b>	<b>Frequency</b>	<b>Percentage</b>
Local Gov'ts Technocrats	20	32
Jobatov Engineers	3	05
Jobatov administrators	4	06
Jobatov casual laborers	8	13
Politicians	8	12
Businessmen	9	14
Peasants	11	18
<b>Totals</b>	<b>63</b>	<b>100</b>

**Source: Primary Data from the field**

Table 7 above shows the occupation of respondents. From the table above, the Local Government Technocrats represented the highest percentage with (32%), followed by peasants with (18%) Businessmen (14) Jobatov casual laborers (13%), Politicians (12%) Jobatov Administrators (6%) and Jobatov Engineers (5%).

This implies that people doing variety of jobs were captured in the study hence getting varying opinions and responses relative to the study problem.

#### 4.4 Empirical findings

##### 4.4.1 Financing of the Private Water Suppliers and Water Service Delivery

The first objective of the study was to establish the effect of private water suppliers on water service delivery. A number of question items were used to examine this objective measured using 5 items scored on five point Likert scale of (5) = strongly agree-SA, (4) = agree- A, (3) = not sure-NS, (2) = disagree-DA, (1) = strongly disagree-SD. The findings are presented in table 8 below.

**Table 8: Financing of the Private Water Suppliers and Water Service Delivery**

	SA	A	N	D	SD	Mean	Std
<b>Financing and water service delivery</b>							
Water supply is financed by the town council	12	14	4	16	07	10.6	6.1
The funding above is sufficient	5	4	6	21	08	8.8	4.3
The funding is regular	18	4	10	15	6	10.6	6.1
User fees are charged on water supply	36	11	-	-	-	9.4	4.8
Customers are satisfied with the financing	7	10	8	12	5	8.4	2.2

*Source: Primary data*

**Key SA(5)=Strongly Agree A(4)=Agree N(3)=Neutral D(2)=Disagreed SD(1)=Strongly Disagreed**

Table 8 above shows the respondents responses on what private water suppliers invest in. 92% of the respondents pointed out that private water suppliers invest in pipe extensions.

It is increasingly recognized that a vital role is played in the provision of water and sanitation services in Sub-Saharan Africa by small service providers (SSPs). These come in many forms, including informal private sector suppliers, community-based organizations (CBOs), and households as self-providers.

The above is in line with Recent studies that suggest that their share in total services is high, especially when it comes to the services for the poor in both rural and urban areas. For example, there are an estimated 12,000 water schemes managed by communities in rural areas in Ethiopia; CBOs account for about 30 percent of serviced rural population in Kenya; and private informal providers account for 10 percent of the serviced population in urban areas in Kenya (WSP-AF 2003).

Also 60% of respondents were of the view that private water supplier in Wakiso Town Council invests in operations and maintenance of the water system.

Water treatment chemicals were another area that the study identified as an investment avenue.

This is represented by 41% response while staff salaries fetched a 30% response rate.

More so, 78% of the respondents pointed out that the private water supplier invests in electricity and repairs, installation of generator. Relatedly, private water supplier has invested in installation of a 30 KVA standby generator as was pointed out by the senior assistant engineering officer of Wakiso District Council.

From the table above, the study also established that private water supplier has an initial capital investment. This revelation was in tandem with what the water and environmental engineer pointed out through the interview. He pointed out that Jobatov invested an initial capital of 120,000,000 Ugandan shillings.

Another source of funding that the study identified was water fees collections. One technician of JOBATOV that the researcher interviewed pointed out that they charge 50 shs per 20 litre jerrycan of water. He had this to say;

*‘To be able to break even, we charge 50 ug.shs per 20 litre jerrycan This money is used especially for maintenance, payment of electricity bills, paying staff salaries, and fuel for generator among other expenditures.*

This was in line with what the researcher established through interviews with District and Town Council staff that the District and Town Council do not play any role in the financing of private water operations other than paying for the water these institutions consume.

#### **4.4.2 Hypothesis: Relationship between private water suppliers financing and access to safe/clean water.**

Null hypothesis = Ho: There is no significant relationship between private water suppliers financing and access to safe/clean water

Alternative hypothesis = Ha: There is a significant relationship between private water suppliers financing and access to safe/clean water

**Results:**

**Table 9: Test results for private water suppliers financing and access to safe/clean water in Urban Authorities of Uganda.**

	<b>Independent variable</b>	<b>p-Value</b>
<b>Access to safe clean water</b>	<b>Private Water Suppliers Financing</b>	
	Water Pipe extensions	<b>0.008</b>
	Operation and maintenance	<b>0.007</b>
	Water treatment chemicals	<b>0.001</b>
	Electricity and repairs	<b>0.006</b>

The above table shows the fisher exact test result of the relationship between private water suppliers financing and access to safe/clean water.

The p-value of the four dimensions; water pipe extension, operation and maintenance, water treatment chemicals and electricity  $< 0.05$ , thus the  $H_0$  is rejected for these two dimensions and  $H_a$  is kept. That is; there is a significant relationship between private water suppliers financing and access to safe/clean water.

**4.4.3 System Design of Private Water Supply on Water Service** The second objective of the study was to asses the effect of system design of private water supply on water service delivery.

The findings are presented in table 10a below

**Table 10a:**

	SA	A	N	D	SD	Mean	Std
<b>System Design of Private Water Supply</b>							
There are steps the community goes through in getting a water facility	32	18	2	-	-	10.4	5.9
The community is involved in the process of acquiring a water facility	16	13	3	2	4	7.8	5.1
There are conditions a community must go through to get a water facility	26	12	1	5	2	9.2	5.5
The community is satisfied with the conditionality of the water facility	12	23	2	5	8	10	5.7
The local people are involved in the design of the water facility	10	12	6	10	2	8	4.1
The town council is involved in the design of water facilities	24	13	5	1	-	8.6	4.8

*Source: Primary data*

**Key SA(5)=Strongly Agree A(4)=Agree N(3)=Neutral D(2)=Disagreed DD(1)=Strongly**

**Disagreed**

The researcher asked respondents how water systems are designed in Wakiso Town Council. Responses from qualitative data that was obtained through interviews revealed that the current arrangement is by design build, operate and management contract with private supplier as was pointed out by the Senior Engineering Officer of Wakiso District.

The Ministry of Water and Environment engage private consultants. According to the branch manager of JOBATOV, Wakiso,

*‘it is the private water service provider who does the system design with assistance from the Ministry of Water and Environment. The water system has been designed in a way that there are three water pumps and one reservoir supplying the whole Town Council’*

The local people were also actively involved in the design and delivery as the table below can testify.

The above correlates with (UPPAP II: 126) that states that Provision of clean, safe and reliable water supply is an element of pillar four of the PEAP, which is concerned with improvement of the quality of life of the poor through delivery of social services. Access to safe water and sanitation reduces poverty through a number of ways: First, easy access to safe water, especially in rural areas, reduces the productive time wasted walking long distances to (and waiting at crowded) water points, thereby allowing people to engage in other productive activities (UPPAP II: 126). (Ministry of Finance, Planning and Economic Development, 2002),

**Table 10b: The effect of System Design of Private Water Supply on Water Service Delivery in Wakiso Town Council**

No	Actions	Number of times cited	Percentage
1	Water facilities where the community applied for the facility	58	92%
2	Water facilities where the community met the required community contributions	59	93%
3	Water facilities where the community participated in the sitting of the facility	56	88%
4	Water facilities where water user committees were formed	63	100%
5	Water facilities with the required representation of women on the water user committee	32	50%
6	Water user committee that were active at the time of the study	60	95%
7	Community members who participated directly in the care of the water facility	36	57%

*Source: Primary Data from the field*

The Table above shows that mobilization was effective in all the areas except for gender issues (i.e. the desired response was obtained in two-thirds or more of the water facilities).

This implies that in the design of system design of private water supply in Wakiso Town Council, the local people and communities are highly involved in very many aspects. This automatically creates an effect on the water service delivery.

For example there are community members that participated directly in the care of the water facility and those that participated in the silting of the facility.

Secondary data revealed that the water and sanitation sector is guided by several policies and guidelines executed through different structures. The overall aim is to ensure good practices. Policy implementation in the water sector is based on the Demand Responsive Approach (DRA) which requires that communities participate in decisions regarding water and sanitation such as the identification of type of facility and its location, repair and maintenance.

This approach also places an obligation on the community to contribute 10% of the construction costs and contribute towards maintenance and repair. This is intended to instill a sense of ownership on the part of the community but also to ensure the services provided are based on local needs, priorities and affordability. The important structures in a District are Local Councils, the Private Sector, Local Government staff and grass-root structures like the Water and Sanitation Committees (WATSANs), Water User Groups and Small-Scale Service Providers (SSPs).

Data from interviews and focus group discussions however showed that Community awareness of PSP activity is extremely low. There was lack of understanding, on the part of communities, Government staff and Local Leaders, of the private sector processes and the pertinent inter-relationships. Local leaders are not sharing information with communities. This has complicated project monitoring and reduced community ownership as reflected in their reluctance to pay the 10% contribution.

More so the study found out that there is little participation in decision-making. The communities are not aware of their entitlements to participate in decisions to acquire a facility, its site selection or type of technology. There is also a long lapse between requests for facilities and response leaving the community in doubt as to whether eventual provision of facilities is in response to their request.

Mechanisms to ensure sustainability are weak; the lack of transparency has undermined trust and discouraged community sustainability mechanisms like contributions for repairs and preventive maintenance. The District supervisory staff e.g. community Development and Health Assistants are inadequate which undermines the mobilization and monitoring activities and community capacity building to enhance their negotiating power. In nine out of 12 zones the WATSAN committees are not in place and those in place are not perfectly doing their job. Women members are confined to gender stereotyped activities and often not consulted on construction.

There are constraints on monitoring private sector activities by Local leaders. The main constraints are:

- ◆ Lack of awareness of the contractual obligations for example the defects liability period
- ◆ Lack of information and guidelines on monitoring, rendering community leaders ineffective
- ◆ Absence of a monitoring structure; the process is largely top-driven often not responding to community complaints, which has compelled some communities to provide their own alternatives,

However, Qualitative data further showed that the local people are involved through their area local leaders who communicate their interests to the various parties as pointed out by the accounts assistant of JOBATOV whom the researcher interviewed. This was indeed proved to be true when the researcher interviewed the local leaders in the 12 zones in Wakiso Town Council. The chairman of Kayunga zone for instance revealed to the researcher that whenever they are going to install pipes in his area, he is consulted and local people are employed as casual laborers in the installation: he had this to say;

*'Whenever a water facility is to be installed in my area, my local people are given first priority.  
For instance digging up trenches where pipes will pass is done by the youths in my area'*

Another area of involvement by the local people is through population estimates and projections. Area zonal chairmen pointed out that the Town Council always requires them to update the number of people residing in their area.

The study established that the Town Council is equally involved in the design of the water system in Wakiso Town Council. When the researcher asked Town Council and District Council employees how the Town Council is involved, it was pointed out that the Town Council are the system owners in that the private water operator has to coordinate directly with the Town Council. More so, the Town Council provides the geographical length of the system design and expected population projections.

Through the various interviews and Focus Group Discussions the study found out that Wakiso District is responsible for the compilation and approval of work plans and budgets derived from Lower Local Governments, submitting them for the approval of the Central Government, and also for overall monitoring and accountability. The lower level councils assist in mobilizing and sensitizing communities, assisting them to identify appropriate projects and monitoring and reporting on their implementation. Health and Community Development Assistants employed by Local Government assist the communities to form Water User Committees (WUCs) before construction starts.

Communities comprise of villages of about 100 households, averaging six to seven members each. Water sources belong to either an individual household or a community. Water collection is mainly the responsibility of women and children.

Difficult terrain and water scarcity are the major water source problems especially in Wakiso District. The communities are supposed to monitor and report the private sector activities to the Town Council office which in turn reports to the District on a quarterly basis.

The private sector does the construction work through contracts which are most often awarded using an open tendering process, although selective bidding is also used at the discretion of the District Contracts Committees (DCCs). The private sector participants range from large to small, foreign to local, companies or NGOs, and may operate across Districts or Lower Local Governments. Water vendors form part of the private sector. They sell water at a fee negotiated at individual level and operate mainly in rural growth centers in areas with no formal water connections or systems.

#### **4.4.4 Testing hypothesis on Relationship between system design of private water suppliers and water service delivery in Urban Authorities**

##### **Hypothesis:**

Null hypothesis = Ho: There is no significant relationship between system design of private water suppliers and water service delivery in Urban Authorities

Alternative hypothesis = Ha: There is a significant relationship between system design of private water suppliers and water service delivery in Urban Authorities.

**Table 11: Test results for system design of private water suppliers and water service delivery in Urban Authorities**

	<b>Independent Variable.</b>	p-Value
	<b>System design of private water suppliers</b>	
<b>Water service delivery</b>	Water pumps	0.000
	Water Reservoir	0.000
	Water treatment chemicals	0.000
	Repairs and maintenance	0.006

The above table shows the fisher exact test result of the relationship between system design of private water suppliers and water service delivery in Urban Authorities. All of the dimensions have P-values < 0.05, thus the Ho is rejected and the Ha is for all the dimensions. Meaning there is a significant relationship between system design of private water suppliers and water service delivery in Urban Authorities.

#### **4.4.5 The effect of Management of private water suppliers in Wakiso Town Council**

The last objective of the study was to examine the effect of management of private water suppliers in Wakiso Town Council.

Respondents were asked about who are the private water suppliers in Wakiso town council.

Through their response, it was established that there is only one private water supplier in Wakiso Town Council in the name of JOBATOV joint venture. However majority of the local people and elders that were interviewed did not know about JOBATOV joint venture. To them water is provided by the Town Council.

**Table 12: Management of private water operators**

<b>Aspect</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>
Private water suppliers have contributed to access to clean water	46	17	-	-	-
Private water suppliers face numerous challenges	63	-	-	-	-
Private water operations are satisfactory to intended beneficiaries	21	36	4	3	-

Table 12 above shows the response rate on variety of issues. Respondents were asked whether private water operators have contributed to access to clean water in Wakiso Town Council. All respondents were in agreement with 46 strongly agreeing and 17 agreeing.

Respondents were also asked whether private water operators face challenges and they all strongly agreed. On whether private water operations are satisfactory to intended beneficiaries, the responses varied. 21 strongly agreed, 36 agreed, 4 were neutral while 3 disagreed.

Through focus group discussions and interviews, the researcher interacted with District and Town Council officials, private sector representatives, opinion leaders and communities and one of the pertinent issues raised was contacting and tendering. It was established that the types of companies eligible for Private Sector Partnership (PSP) contracts are not yet clearly defined by the District Contracts Committee (DCC).

The goods and services contracted are: construction of water supply and sanitation facilities; supply of goods e.g. training materials, pumps and pipes; repair and maintenance; consultancy services; training among others.

Two forms of tendering exist; open bidding entailing a series of clearly defined steps and selective bidding, which leaves selection decisions at the discretion of the DCC. According to District officials, selective bidding is mainly used for urgent cases or for Lower Local Government projects not exceeding Ug.shs 50,000,000 for works and Ug.shs 30,000,000 for services. A contractor may be awarded more than one facility in different Lower Local Governments over the year without their capacity to carry out that volume of work first being assessed. This has contributed to sub-standard work and/or failure to make good the defects. Payment is after completion of a single project less a retention fee of 10% of total cost to cover any repairs necessary within the first six months.

Issues regarding the contracting process in Wakiso Town Council are described below:

- i. The emphasis on hardware vs software: The JOBATOV contract exclusively cover hardware components of water supply and do not provide for community mobilization, management and training. This causes difficulties for sustainability, sanitation and hygiene, thus undermining improvements in health.
- ii. Lack of capacity building in Local Governments: The leaders who are supposed to monitor projects lack contract information or even technical knowledge about the facilities e.g. stocks held in their Inventories. Worse still there is no training undertaken to equip them for their roles.

Repair and quality issues: The FGDs revealed that the quality of work is generally poor as evidenced by frequent breakdowns in some of the villages visited. The contractors do not always honor their contractual obligation to make good the defects during the stipulated liability period and yet there was no evidence that this condition is enforced by the relevant authority.

- iii. Non-prioritization of sanitation and hygiene: The emphasis is on construction of water supply facilities. The FGDs revealed there were hardly any hygiene and health education activities except in four villages where NGOs carried out some activities. The lack of health education has resulted in dirty sources and containers, overgrown bushes, silting trenches etc.

After contracting, The Water authority then establishes a management contract with the Private Operator (private operator) which is based on the provisions of the performance contracts. The operator is engaged as an agent of the water authority and is bound by the provisions of the performance contract, including any subsequent amendments and variations. The management contract is usually for the duration of three years (compared to five years under the OBA scheme). This is consistent with the provisions of the performance contract. While the conditions of the management contract provide that the contract is subject to review every 12 months, it is silent on whether it is renewable.

It also does not contain any detail regarding the annual contract review process. Since the performance contract is renewable at the discretion of the Minister (MWE) and forms part of the O&M contract, it follows that the O&M contract which is also renewable at the discretion of the Minister.

This is so regardless of whether or not the private operator has met agreed service standards and targets under the O&M contract. Some common features of management contracts are set out below as stipulated in the Ministry of Water and Environment Design build operate agreement for Wakiso Town Water Supply System, between MWE, Wakiso Town Water and Sewerage Authority and JOBATOV Joint Venture (MWE/SRVCS/06-07/00166, October 2008)

Water sector assets are the property of the MWE and are leased to the Water Area (WA) for use in order to provide water to consumers. The private operator has no ownership rights over the assets and cannot use the assets as loan security.

The private contractor is under contractual obligation to effect repairs and replacements of the water supply system, including initiating and managing extensions to the existing distribution system.

The operator is required to source its own funds to effect the repairs and extensions and then to seek reimbursement from the water and sewerage authority of the costs and expenses advanced by the operator. There is provision for advance payments to the private operator (by the Wa) for materials and parts for approved extensions. Most WAs however do not have the funds to make such advances even when provided for. (MWE/SRVCS/06-07/00166, October 2008)

The management contract mandates the private operator to collect tariffs, fees, rates and charges for services. However, such tariffs, fees, rates and charges must be in accordance with the authority's business plan, referred to in the performance contract. The water and sewerage authority has the right to set the tariffs, fees, rates and charges to be charged by the operator.

When the O&M contract is read together with the terms of the performance contract, it is implied that, while the private operator is required to submit business plans, including its proposed tariff, tariff setting remains a function shared by the water and sewerage authority and the Minister alone, without the operator. (MWE/SRVCS/06-07/00166, October 2008)

The private operator is required under the O&M contract to submit a three-year business plan within one month of the date of the contract's commencement. The plan must include financial targets, including the proposed tariff. The O&M contract is modeled on the performance contract that requires the water and sewerage authority to prepare and submit a three-year business plan to the Minister.

Service provision by the private operator must be in accordance with the service standards set out in the management contract. These mainly relate to technical service standards. The private operator is responsible for maintenance and improvement of the water system including preventative maintenance, normal repairs and system replacements. While the Water authority is entitled to appoint an auditor to audit the accounts, books and records of the private operator, it is prohibited from interfering in the day-to-day management of the water system by the private operator. For example, instructions on operational matters such as water connections and disconnections are prohibited. (MWE/SRVCS/06-07/00166, October 2008)

Under the performance and management contracts, the private operator is appointed to be the 'sole and exclusive manager' of the water supply system in the designated water supply area. However, subject to certain stringent conditions, the private operator can subcontract the day-to-day management operations, as long as the necessary approvals from the WAs are sought and granted.

The management contract makes provision for arbitration of disputes between the private operator and WAs. Where the parties are unable to agree on an arbitrator, either party can serve a notice on the other party requesting the director of the DWD to arbitrate the dispute. Given the critical role played by the DWD in the funding, design, supervision, monitoring and evaluation of water and sanitation projects throughout the country, the director is likely to have a conflict of interest whenever disputes are referred to the DWD for arbitration. Many disputes might relate to findings made by technical and other staff of the DWD and the impartiality of the Director which is so critical to dispute settlement is likely to be questioned. (MWE/SRVCS/06-07/00166, October 2008).

All the above is in agreement with Chao-Beroff et al. 2000 who points out that If local and national governments are to encourage these companies to play a more significant and positive role, they first need to review existing laws and regulations, particularly where they inhibit local companies from providing better services to the urban poor, or prevent local companies from competing to provide better services. (Chao-Beroff et al. 2000)

Community and civil-society groups may need to consider how they can engage with local companies. International development agencies may need to re-examine their own tendency to assume that more private-sector participation means engaging with national Governments and large multinational water companies, and find better ways of working with local companies. (Chao-Beroff et al. 2000)

**4.4.6. Hypothesis: There is a relationship between Management of private water supply operations and water service delivery in Urban Authorities.**

Hypothesis:

Null hypothesis = Ho: there is no a relationship between Management of private water supply operations and water service delivery in Urban Authorities.

Alternative hypothesis = Ha: There is a significant relationship between Management of private water supply operations and water service delivery in Urban Authorities.

**Table 13: Test results for Management of private water supply operations and water service delivery in Urban Authorities**

	<b>Independent Variable</b>	<b>p-Value</b>
	<b>Management of private water suppliers</b>	
Water Service Delivery	Tendering	0.001
	Contracting	0.000
	Management contracts	0.001
	Community involvement	0.006

The above table shows the fisher exact test result of the relationship between Management of private water suppliers and water service delivery in Urban Authorities. All of the dimensions have P-values < 0.05, thus the Ho is rejected and the Ha is for all the dimensions. Meaning there is a significant relationship between Management of private water suppliers and water service delivery in Urban Authorities.

## **CHAPTER FIVE:**

### **DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDEATIONS**

#### **5.1 Introduction**

The study investigated the relationship between Private Water Supply and Water Service Delivery in Urban Authorities in Uganda, a case study of Wakiso Town Council, Wakiso District in Uganda. This chapter presents the summary of findings, discuss the findings, make a conclusion and draw possible recommendations is in line with the objectives of the study.

#### **5.2 Summary of findings**

The study established that financing of the private water supplier has an effect on water supply delivery in Wakiso Town Council.

The study found out that the water system in Town have an effect on water service delivery

The study established that management of private water supplier in Town Councils has an influence on water service delivery

#### **5.3 Discussion of findings**

##### **5.3.1 Financing of the Private Water suppliers on Water Sservice Delivery in Town Councils**

The study established that financing of the private water supplier has an effect on water supply delivery in Town Councils of Uganda.

The study also established that water service delivery does not come free to residents. The private supplier charges a fee of 50shs per 20 liters. This money is used to finance the operation expenses of the private water supplier. Such expenses include fuel for generator, repair of pipes, general electrical appliances, water treatment chemicals, pipe extensions and staff salaries as was pointed out by the branch manager of JOBATOV Joint Venture in Wakiso Town Council.

These findings are in line with (Drees et al., 2004) who asserts that Output-based subsidies have been proposed as a means of giving private operators the financial incentive to provide better services to poor groups (Brook and Smith, 2004). The basic principle is to provide financial inducements in direct proportion to some desired output, such as water sold to or sewage collected from households in low-income neighborhoods. An output-based aid approach has, for example, been piloted with Aguateros in Paraguay, (Drees et al., 2004).

On the grounds that the Aguateros provided adequate services but tended to concentrate on more affluent consumers, pilot projects were designed to get the local companies to bid for extending connections. The subsidy required per connection (US\$ 150 in the first phase) was less than the implicit subsidy for public utility connections. Indications are that, while it may be difficult to find the optimal bidding and contracting procedures, output- based subsidies through aguateros can provide an important alternative to public provisioning (Drees et al., 2004). Output-based contracts could also be used to help extend other water and sanitation providers from the wealthier areas where they have emerged, to the low-income areas where profits may be insufficient to support acceptable services.

### **5.3.2 System Design of Private Water Supply on Water Service Delivery in Town Councils**

The study found out that the water system design in Town Councils has an effect on water service delivery in Uganda

The water systems are designed in a way that they have a direct impact on water service delivery in that it is from these pumps and reservoir that water reaches the people.

This means that this design makes it possible for Town Councils to receive safe and clean water. These findings are not any different from what other scholars have written about water system designs and water service delivery. Virjee, (2002) contends that, currently there is no internationally recognized scheme for the regulation or approval of construction products and chemicals although some countries have guidelines, standards, regulations or approval systems. Toyoshima, (2002) adds that methods used for the treatment of raw water will depend on the properties of the water and the presence and concentrations of any contaminants. Ground waters usually have low levels of color and turbidity and consistent microbiological quality, although water from shallow wells and some springs may be more variable. Particular problems may include high or low pH value and alkalinity and high concentrations of iron, manganese, nitrate, chlorinated solvents or pesticides. Surface waters may have high levels of color and turbidity and exhibit poor microbiological quality. Quality may be variable and deteriorate following periods of heavy rainfall. It is very clear here that water treatment is a necessity which is in conformity with the study findings.

BG Associates, (2003) further adds that Pollution and natural variations in water quality are the main problems associated with stream and river sources that need to be considered when silting and constructing an intake. Water may be pumped directly from the stream or river or it may be collected from the ground in the immediate vicinity of the stream or riverbank. For the case of Wakiso Town Council, its pumped. The advantage of the latter is that where the strata have suitable transmissive properties, supplies taken in this way are naturally filtered and of better quality than the river water itself.

The intake should be located away from any features that might create turbulence during periods of heavy rainfall and increase the turbidity of the water. This means that intakes should not be situated on bends in the stream or river or at places where sudden changes in level occur.

More so, Provision of clean, safe and reliable water supply is an element of pillar four of the PEAP, which is concerned with improvement of the quality of life of the poor through delivery of social services. Access to safe water and sanitation reduces poverty through a number of ways: First, easy access to safe water, especially in rural areas, reduces the productive time wasted walking long distances to (and waiting at crowded) water points, thereby allowing people to engage in other productive activities (UPPAP II: 126). (Ministry of Finance, Planning and Economic Development, 2002).

The Study established that the private operator purchased a generator, water pumps and other equipment which is in agreement with the design build operate agreement for Wakiso Town Water and Sewerage system between MOWE, Wakiso Town Water and Sewerage Authority and JOBATOV Joint Venture article 3.5.4 that stipulates that the operator shall ensure that all plant and equipment provided are new. Plant and equipment which are not specified shall be of a quality consistent with those specified and their use shall be acceptable to the MOWE.

### **5.3.3 Management of Private Water Suppliers on Water Service Delivery in Town Councils**

The study found out that the management of private water supplier had an effect on water service delivery in Town Councils in Uganda.

These findings auger well with the literature reviewed. Chao-Beroff et al. (2000) for example asserts that reviews of independent providers indicate that these small water companies are important, and have been growing in importance since the early 1990s, as public water utilities have failed to meet water demands.

Increasing the role of local water and sanitation companies is probably less controversial than increasing the role of multinationals. There is no obvious reason; however, to assume that promoting local water and sanitation companies will improve water and sanitation services for the urban poor: the impact will depend on the regulatory environment and the extent to which mechanisms are put in place that give local companies the incentive to provide improved services to low-income groups. Support for local companies should always be considered in relation to alternatives.

Lamb et al, (1998) adds that Ideally, there should not be any programmes or projects designed to support local water and sanitation companies, just initiatives to improve water and sanitation provision that decide to support local companies if that is the best decision. There may be justification, however, for removing barriers that prevent local water and sanitation companies from playing a better role.

More still, from a market perspective, the urban poor are likely to benefit from greater competition, particularly when that competition reduces their own dependence on entrenched public bureaucracies or private monopolies. It can be difficult to distinguish between increasing competition by opening up opportunities for local companies, and restricting competition by creating new forms of (locally owned) private monopolies.

As described in early sections of this report, it can also be difficult to distinguish regulations that encourage quality improvement from those that reduce quantities. Unfortunately, such distinctions can be critical in determining whether promoting local companies is more likely to open up or close down opportunities for improving services in low-income areas. (Plummer, 2002).

Plummer (2002) further adds that, decisions about whether local contractors or multinationals (or public utilities) can provide better water and sanitation services to the urban poor clearly should not be divorced from the local context, including for example which local companies have an interest in competing for water and sanitation contracts, and how this is likely to evolve over time. Ideally, countries would provide a framework within which the full range of possible providers, ranging from informal enterprises and local and multinational companies, to Governmental and Non- Governmental Organizations, can compete, politically as well as economically. (Many would argue that political competition should set the framework for economic competition.) Even where this ideal is far from attainable, improving the quality of political and economic competition is likely to be central. (Solo, 2003).

## **5.4 Conclusions**

Going by the findings of the study, it can be concluded that:

### **5.4.1 Financing of the Private Water Suppliers on Water Service Delivery in Town Councils in Uganda**

According to its advocates, privatization promises better services at lower costs, but this promise depends on at least two conditions being fulfilled - competition and Government capacity.

Conclusively, there is a positive significant relationship between financing private water supplies and water service delivery in Town Councils of Uganda.

#### **5.4.2 System Design of Private Water Supply on Water Service Delivery in Town Councils of Uganda**

Upon examination, the study found out that the water system in Wakiso Town Council is designed in a way that the current arrangement is by design build, operate and management contract with a private supplier.

This has a direct impact on water service delivery in that it is from these pumps and reservoir that water reaches the people. In conclusion, therefore, private water system design has a positive significant effect on water service delivery in Uganda's town councils.

#### **5.4.3 Management of Private Water Suppliers on Water Service Delivery in Town Councils in Uganda**

The study concluded that the management of private water supplier had positive significant effect on water service delivery in Town Councils in Uganda

### **5.5 Recommendations**

Basing on the study findings and the researcher's personal opinion, it is recommended that;

#### **5.5.1 The effect of Financing of the Private Water Suppliers on Water Service Delivery in Wakiso Town Council**

The Government of Uganda through Town Councils and the District Councils should get more involved in financing private water supply in Town Councils.

The researcher hopes that this will go a long way in reducing the cost of access to water that is borne by the consumer that was found to be high on the local people. They could also dictate on what the private supply charges for the services i.e. service fee.

### **5.5.2 The effect of System Design of Private Water Supply on Water Service Delivery in Wakiso Town Council**

More private water suppliers should be allowed entry into the market in Town Councils to be able to serve the ever growing population and to ensure a stable supply of water to residents.

Other sources of water supply like wells, springs and boreholes are recommended. The authorities should embark on investing in these sources and sensitizing the masses about clean water. This will relieve the water supply system of the stress caused by an ever growing population.

Town Councils should involve the community in selection of site and type of service and sensitize them on their powers and entitlements, Provide community tendering and contract information, Train them in monitoring, evaluation and maintenance of the facility, Ensure timely repair of water sources and set up by-laws to encourage 10% contributions in kind or otherwise.

### **5.5.3 The effect of Management of Private Water Suppliers on Water Service Delivery in Wakiso Town Council**

More involvement of the local people in private water supply is also recommended. For instance sensitization campaigns among residents about private water supply should be carried out. Sensitization might also reduce or eliminate the theft of pipes a problem that was identified by the study.

The study found out that local people infact did not know much or at all about JOBATOV Joint Venture, the private water supplier as evidenced during the various interviews conducted with local leaders. Out of the 12 zonal chairpersons interviewed only 2(two) knew about the private water service provider.

### **5.6 Limitations to the Study**

The study was limited by lack of knowledge from some respondents. For instance, local people didn't know what private water supply was all about. To counter this, the researcher had to do a lot of explaining hence spending more time in the field.

Time was also a limiting factor. The researcher works upcountry yet he had to accomplish this research and coordinate with supervisor. To achieve this, a lot of sacrifices had to be made like time at office and with family had to be sacrificed.

### **5.7 Areas for further Research**

Similar research is recommended in rural areas of Uganda. The study found out through documentary reviews that these face more water shortages/problems as compared to urban areas. Further research should also be carried out to include sanitation as water and sanitation usually go hand in hand. Having access to clean water with poor sanitation cannot help the situation.

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**APPENDIX 1**

**QUESTIONNAIRE TO EMPLOYEES OF WAKISO DISTRICT/TOWN COUNCIL**

Dear respondent,

This is the study on ‘**PRIVATE WATER SUPPLY AND WATER SERVICE DELIVERY IN URBAN AUTHORITIES IN UGANDA, A CASE STUDY OF WAKISO TOWN COUNCIL, WAKISO DISTRICT**’. Please give your answer that best describes your opinions. All Information will be treated with utmost confidentiality and the study is only for purely academic purposes.

**SECTION A**

***1. Background information***

- a) Sex of respondent-----
- b) Occupation.....
- c) Marital status.....
- d) Age.....
- e) Job Position.....
- f) Length of stay in the position.....

**SECTION B. The financing of the private water suppliers in Wakiso Town Council**

1. How is water supply in Wakiso Town Council financed?

.....

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.....

2. How is the sufficiency of such funding above?

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.....  
.....

5 How is the regularity of funding and its implication on water service delivery?

6 How much user fees are charged on water users in Wakiso Town Council?

7 Are you satisfied with the way private water suppliers manage their accounts and records?

Yes..... No.....

8 Please give reasons for your answer above

.....  
.....

**SECTION C; System design of private water supply in Wakiso Town Council**

1) What steps do you go through in order to give a community a water facility?

.....  
.....

2) What steps does the community go through in order to get a water facility?

.....  
.....

3) How is the community involved in the process of acquiring a water facility?

.....

4) What conditions must a community meet in order to be provided with a water facility?

.....

5) How do you ensure that the facilities you provide remain functional?

.....

6) Are you satisfied with the level of functionality of the water facilities so far provided?

Yes.....No.....Somehow.....

7) Please give reasons for your opinion

.....

8) As water facility providers what problems do you encounter that effect your service delivery?.....

9. How is the water system designed in Wakiso Town Council?

.....

.....

.....

10. Are the local people involved in the design of the above water systems?

Yes..... No.....

11. If yes, how are they involved?

.....

.....

12. Is the Town Council involved in the design of water systems in Wakiso Town Council?

Yes..... No.....

13. If yes, how is the Town Council involved?

.....

.....

.....

14. How often is quality water testing done in Wakiso Town Council?

.....  
.....

**SECTION D: The management of private water suppliers in Wakiso Town Council**

1. Who are the private water suppliers in Wakiso Town Council?

.....  
.....  
.....

2. Private water suppliers have positively contributed to access to safe/clean water in Wakiso Town Council

- a) Strongly agree    b) Agree    c) Neutral    d) Disagree    e) Strongly disagree

3. The private water suppliers in Wakiso Town Council face numerous challenges.

- a) Strongly agree    b) Agree    c) Neutral    d) Disagree    e) Strongly disagree

4. What are the challenges faced by the private water suppliers in Wakiso Town Council?

.....  
.....

5. The private water supply operations in Wakiso Town Council are satisfactory to the intended beneficiaries.

- a) Strongly agree    b) Agree    c) Neutral    d) Disagree    e) Strongly disagree

6. How often do private water suppliers prepare and submit performance reports and business plans to the Authority?

.....

7. What problems have you encountered with, in the operations and maintenance of the water facilities?

.....  
.....

8. Do you encounter any difficulties in asking new members of the community to contribute towards operations and maintenance of the water facilities? (Tick) Yes...No...

9. Do you have difficulty making material contributions for the operation and maintenance of the water facilities? YES.....No

10. Do you have difficulty making cash contributions for the operations and maintenance of the facility? Yes..... No

11. . In case your facility is non-functional, how long ago did it break down?

12. What has led to the breakdown/ non-functionality of the water facility?

.....  
.....

## **APPENDIX 2**

### **Interview guide for Wakiso Town Council opinion leaders**

1. Are you involved in the design of water systems?
2. How are you involved?
3. Which are the private water suppliers in Wakiso Town Council?
4. Have the private water supply operations in Wakiso Town Council been satisfactory to you?
5. Do you have access to clean water?
6. What is the source of your domestic water consumption?
7. How far is the water source from your residence
8. Do you face any water shortages?
9. How often are the shortages?
10. Do you think you are better off with private water suppliers in Wakiso Town Council?
11. How much are you charged per unit of water?
12. Are you comfortable with the above charge?
13. What are the positive and negative effects of using another source besides your primary?
14. Why do you choose your primary source?
15. Does your source change with the seasons? Why or why not?
16. Do you have different sources for drinking/washing; why or why not?
17. Who is responsible for maintenance?
18. How often does the source have to be maintained?
19. Does this person/org also pay for maintenance?

## APPENDIX 3

### Interview guide for employees of private water suppliers

1. What do private water suppliers invest in Wakiso Town Council?
2. Who finances the above investments?
3. What is the source of your funding as a private water supplier in Wakiso Town Council?
4. Does the Town Council play any role in the financing of private water suppliers?
5. If yes, what roles does the Town Council play?
6. How do u design water systems in Wakiso Town Council?
7. Do you involve the local people in the design of the above water systems?
8. How are they involved?
9. Is the Town Council involved in the design and management of water systems in Wakiso Town Council?
10. If yes, how is the Town Council involved?
11. Which other private water suppliers do you know of in Wakiso Town Council?
12. What challenges do you face as a private water supplier in Wakiso Town Council?
13. How do you think such challenges can be overcome?
14. The private water supply operations in Wakiso Town Council are satisfactory to the intended beneficiaries.
15. How often do you submit performance reports, business plans?
16. How do you manage your accounts and records?
17. Do you treat your water?
18. How is your water treated?
19. What kind of materials are used for treatment and how much of each material?

20. Why is this treatment method used?
21. Is all of the water treated the same way?
22. If you used a different source would you still treat your water?
23. How much water do you use per day (utility water) and treat per day (drinking water)?
24. How often do you treat water?
25. Why do you treat water?
26. If you do not treat water all of the time, what are your reasons?
27. Do you think the quality of your water affects your health; why or why not?