Public Private Partnerships and Competitiveness of the Hydroelectricity Sub-Sector in Uganda: Case of Bujagali and Karuma Dam Projects

A Nduhura

orcid.org/0000-0001-5023-6263

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Promoter: Prof MT Lukamba

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Student number: 28396715

ABSTRACT

Globally,Public Private Partnerships (PPPs) have been adopted as a tool to improve public service delivery. In the hydropower subsector, PPPs have been adopted to improve competitiveness of the hydropower sector. Existing literature acknowledges that PPPs have been widely welcomed in Uganda and other parts of the world with the hope that they would support electricity improvements in aspects such as effeciency, effectiveness, availability, access and affordability across the energy sector. In the hydropower subsector, a range of PPPs models have been adopted in generation, transmission, and distribution. However, there is growing harsh judgment and dissent for PPPs in the sector.

Based on interviews, focus group discussion,review of scholary literature and documents review,this study concludes that PPPs can improve competiveness of the hydropower subsector under certain conditions.The study acknowledges existing PPP models that have enabled the country to improve availability, access,reliability, quality of power and reduced cost of government in extending electricity to its people. However, the study reveals that tarriffs remain a key challenge and design risk. Based overall findings, the study recommends an extension of the Build Own Operate and Transfer (BOOT) to Design Build Own Operate Transfer (DBOOT) that can be adopted alonsgide some other interventions to improve competitiveness of the hydro electricity sub sector .

This model may help to reduce design risk for contracting parties and utimately provide affordable tarriffs in the long term.The study also acknowledges that while the agency theory has been adopted for studies in theory and practice of procurement alongside PPPs, but remains adquate to resolve challenges existent in the practice of PPPs in the hydropower sector.To this effect, the study proposes a new model, the Citizen Principal Agency (CPA) that puts the citizens at the heart of design and implementation of PPPs that aim at improving competitiveness of the electricity in not only Uganda but across the world.

The findings of this study are relevant to Uganda and other countries since electricity is considered to be a key catalyst in improving economies of countries but more importantly lives of people at the bottom of the pyramid.

Key words: **Public Private Partnerships, Hydroelectricity, Design Build Own Operate Transfer (DBOOT), CPA Model**

DECLARATION

I, **Alex Nduhura** , hereby declare that this study: Public Private Partnerships And The Competitiveness Of Hydropower Sub Sector In Uganda An Exploratory Case study: Bujagali and Karuma Dam Projects - is my own original work and that all sources used or quoted have been accurately reported and acknowledged by means of complete references, and that this thesis has not previously in its entirety or partially been submitted by me or any other person for degree purposes at this, or at any other University.

Alex Nduhura Date:**July ,2019**

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Public Private Partnerships (PPPs) are a key tool in serving interests of the bottom of the pyramid that hosts the majority of the world population.Discovering how PPPs can deliver competitive electricity is enriching as electrcity enables production of goods consumed by the worlds poor in sectors such as education, healthcare that are neighbours of the poor. Am grateful for the African Development Bank(AfDB) for having included PPPs as a theme for research under the AfDB HEST programme i have benefitted from.

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DEDICATION

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LIST OF ABBREVIATIONS AND ACRONYMS

Abreviation/Acronym	Meaning
AG	Attorney General
BBBEE	Broad Based Black Economic Empowerment
BOO	Build Own Operate
BOOT	Build Own Operate Transfer
BOT	Build Operate Transfer
BRICS	Brazil Russia India China South Africa
CAIDI	Customer Average Interruption Duration Index
CPA	Citizen Principal Agency Model
DBFO	Design Finance Build and Operate
DBOOT	Design Build Own Operate and Transfer
DFBO	Design Finance Build Operate
ECG	Electricity Corporation of Ghana
EPC	Engineering, Procurement and Construction
ERA	Electricity Regulatory Authority
FGD	Focus Group Discussion
GoB	Government of Burundi
GoG	Government of Ghana
GoR	Government of Rwanda
GoU	Government of Uganda

GUREC	Gulu University Ethics Research Committee
GW	GigaWatts
IGG	Inspectorate General of Government
IHA	International Hydropower Association
IPPs	Independent Power Producers
MAIFI	Momentary Average Interruption Frequency Index.
MW	Mega watts
MW	Megawatts
NPM	New Public Management
O & M	Operate and Maintain
OECD	Organisation For Economic Development
PFI	Private Finance Initiative
PFI	Private Finance Initiative
PhD	Doctorate of Philosophy
PPA	Power Purchase Agreements
PPPs	Public Private Partnerships
PSC	Public Sector Comparator
ROI	Return on Investment
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption frequency Index
SEBs	State Electricity Boards

SOEs	State Owned Enterprises
SSA	Sub Saharan Africa
UECCCL	Uganda Energy Capital Credit Company limited
UEDCL	Uganda Electrcity Distribution Company Limited
UEGCL	Uganda Electricity Generation Company Limited
UETCL	Uganda Electricity Transmission Company Limited
UK	United Kingdom
UK	United Kingdom
UNCST	Uganda National Council of Science and Technology
UNCTAD	United Nations Conference on Trade Economic Development
UNCTAD	United Nations Conference on Trade Economic Development
USD	United States Dollar
WB	World Bank

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CHAPTER1: BACKGROUND TO THE STUDY

1.1 Introduction

This thesis introduces the orientation, background, problem statement. It further discusses the concepts of public private partnerships and competitiveness of nation's concepts. It provides research aim and questions, objectives, significance of study, delimitations and methodology that will guide the study of PPPs and the competitiveness of the hydroelectricity subsector in Uganda.

1.2 Background

Access to electricity is essential in reducing poverty (Onakoya, Onakoya, Jimi-Salami, Odedairo, 2013:25-40; Adu, Zhang, Yujian, Jing, Suoming, 2018:012022; Shyu, 2014:29-38).

There is evidence that suggests that countries that have access to electricity have had higher gross domestic product (GDP), better incomes at household level and jobs, (Adu et al, 2018: 27). Countries like China, USA, South African, Nigeria and Ethiopia ratify this evidence. It is also widely known that that when governments expand quantity, quality and access to electricity, they are able to achieve to upward trends in economic growth, employment generation, shrinking levels of poverty reduction and improvement in overall well-being of their populations, (World Bank, 2008:1-2: Iwayemi, 2008: 17-21: Adu et al, 2018: 2). Improving levels of electricity in any given country requires an understanding of sources of electricity. Globally it is recognized that key sources of electricity have been: solar, hydro, biomass, nuclear, geothermal, wind and coal. Hydropower is considered to constitute over 16.6% share of the world's electricity production (IHA, 2017:1-3). By close of 2017, it is argued that the world's total installed hydropower capacity stood at 1,217GW (IHA, 2018:1-2). Hydropower is also rated as the most preferred electricity source due to the benefits it provides. According to international Hydropower Association (2018:1-7) hydropower is preferred because: its renewal, creates jobs, protects from floods and droughts and is proven to have improved livelihoods of those that are affected by hydropower projects. While hydropower is considered the suboptimal investment and utilization of hydropower is eminent in various countries (IHA, 1-25).

The persistent suboptimal levels of hydro power dam infrastructure, capacity ,and electricity service provision from both growth and welfare maximization perspectives raises the silent but powerful question: What ought to be done to develop and sustain a competitive hydro electricity sector characterized by acceptable international standards of service reliability, accessibility and availability and that will support sustainable economic growth and development in Uganda (Huber 2015:481-482;Huber Roger, Hamacher;2015:180-193).
One of such thoughts has been over the last decade, the adoption of public Private Partnerships in the hydroelectricity or hydropower subsector.

Public Private Partnerships (PPPs) have for some time been considered as a tool for improving competitiveness of nations. PPPs provide jobs, national cash flow relief, avail infrastructure, reduce cost of doing business in terms of cost and time, and play a critical role in improving the business climate of countries (World Bank,2015:2: Adu et al,2018:2). PPPs enable government in providing public infrastructure. PPP provide engagement of private sector in matters of the economy (David, 2018: 2).

In Uganda, the quest to improve competitiveness of various sectors through use of PPPs remains a key part of national agenda. The origin of PPPs in Uganda is traceable from the early days of privatization in the late 1980s and its dominance in the 1990s. Although the study and practice of PPPs has dominated the last 2-3 decades, a well-developed paradigm that creates coherence between PPPs and their role in improving competitiveness of the hydro electricity sector in Uganda is still lacking. Despite several perspectives on PPPs that have manifested over time, misconnections on how PPPs can be used to improve competitiveness of Uganda's hydroelectricity sub sector still remains. This scenario has denied politicians, policy makers and citizens, a necessary toolkit to achieve more with less from PPPs in Uganda's hydroelectricity subsector. More so, the advents of new public management philosophy, and a more informed society and citizenry have resulted into up scaled pressure on governments to do more with less. This has then created ground for the study of interventions that governments must implement. Furthermore, reduced funding from development partners and escalating

pressure from citizens' demand requires that government explore options for undertaking public investments with greater efficiency especially in the hydropower sector.

In reacting to such changes, the Government of Uganda (GoU) adopted and continues to adopt several economic reforms. Among such reforms that GoU has adopted over time, has been liberalization of the economy. Liberalization was implemented through privatization.

This involved transfer of ownership of major government assets such as companies, and assets to the private sector as ownership and management of assets with the objective of reducing national cash flow losses. In addition to privatization, GoU also adopted new public management philosophy that requires that government deliver more with less, also referred to as productive efficiency (Flynn, 2002: 211). In extensions of privatization and to increase private participation in delivery of public services, GoU has implemented several reforms.

Quite importantly, the GoU has adopted public private partnerships (PPPs) as path to improve efficiency in the energy, healthcare, education, and transport sectors (Uganda National Budget, 2010). To validate this move, GoU approved PPP policy in 2010 (Uganda PPP Policy, 2010:1-30). The policy provides a framework that aims at enabling PPPs operate in way that enables government to achieve better utilization of public funds, more productive efficiency and delivery of public services with the objective of improving national competitiveness. In consolidating government's commitment to PPPs, the GoU recently enacted PPP Act 2015 to guide the process and implementation of adopt PPPs and as a mechanism to drive Uganda into the next era of economic transformation of Uganda.

In Uganda like elsewhere, the adoption of PPPs has had origin and drivers for inclusion in national policies. Osborne (2006:1) asserts that the 1990s have seen the establishment of the PPP as the key tool of public policy across the world, as an outcome of New Public Management (NPM). Despite some critique of PPPs, empirical evidence in countries such as Korea, China, Rwanda, Uganda South Africa, and United Kingdom

suggests that PPPs can be used as a vehicle to improve competitiveness across sectors (Osborne, 2006:1 and Kime et al., 2018:578-85).

The quest to improve competitiveness in Uganda has continued to dominate the political and economic terrain over the last two decades and continues (Uganda Vision 2040). This quest has soured with global rankings of country competitiveness (Lall, 2001: 1501-1525) as developing coutries contuinue to keep watch on their ratings as compared with peers and the developed world.

On the otherhand,civil society pressure and a stronger private sector under the Private Sector Forum of Uganda (PSFU) have escalated the pressure for government of Uganda (GoU) to deliver more with less and the need to reduce the cost of doing business in Uganda. Over the last 15 years, PPPs have been adopted in Uganda's hydro electricity sector.

In its comparative analysis of adoption of PPPs indicates that PPP investment between 1990 and 2015 suggests that in East Africa PPP investment is taking shape. For instance, in East Africa, vast amounts of public investments have attracted PPPs. Kenya attracted PPPs worth $8.9billion, Tanzania $3.9, Uganda $3.6billion, Rwanda $8.5million and Burundi $55,000 (United Nations Conference on Trade Economic Development UNCTAD, 2016:95). Telecommunications and electricity sector have attracted most PPP investments.

In Uganda, the adoption of PPPs in the energy sector or electricity sector was motivated to improve competitiveness of the sector that was in crisis. Uganda's hydro electricity sector was characterized by 30% power losses. Furthermore, the sector was dominated by corruption, the lack of a performance based managerial approach, poor user fees collection and efficiency levels as low at 64%, the worst in the East African region (Uganda Electricity Regulatory Authority,2016:1).

With electricity and transport being major cost elements of the production process, major reforms, including the adoption of PPPs in Uganda, have skewed towards these

sectors with the objective of improving competitiveness of the sector. This trend has also been manifested across the world. A comparative analysis by UNCTAD (2016:96) reveals that globally the telecommunications sector has attracted most PPP investments at 48% of global PPP investment while the electricity sector has attracted 29% of global PPP investments. In Africa, telecommunications sector has attracted 68% of PPP investment while electricity has attracted 17% of PPP investments in East Africa. There is evidence that escalating adoption of PPPs is increasingly aimed at improving competitiveness of various sectors.

A sector is considered competitive if it is economically healthy. The health of a sector is then defined as the value a given sector contributes to the economy in terms of the number of jobs the sector provides (Atkinson, 2013:2). Energy efficiency is a concept expressed by a set of measures or the effects of those measures whose objective is a reduction of energy consumption such that consumer satisfaction is maintained. Competitiveness in this context, is about how efficient is energy sector.

According to Adenkinju (2008:28) energy efficiency is not simply confined to the management of demand, but can also be applied to production, transport and distribution of energy. A common indicator of energy efficiency is the index of energy intensity, which measures the quantity of energy required to generate one-dollar unit of aggregate output. This implies that the lower the value of energy intensity, the more efficient economy (Adenkinju, 2008:28). While such measures are adopted, other measures have been advanced in defining competitiveness measures in the electricity sector as highlighted in the table below:

Figure 1.1: Measures of Competitiveness of Electricity Sectors

Measure of Electricity Competitiveness	Description of Electricity Competitiveness Measure	Author/Empirical Findings	Stakeholder Perspective
Ease of new connection to the grid	It measures the process for acquiring a new connection to the grid. The lesser the process, the better	Genigot and Ramalho (2015)	Electricity Users
Quality of regulatory institutions	Good governance, highe effeciency levels ,growth rates, ability to attract investment at lower cost of capital on sustained basis into their utility service industries	Kirkpatrick et al.2002, Cubbin and Dtern (2006), Adres et al. (2008)	Electricity utility agencies
Index to proxy utility customer efficiency	Measures the cost, time and interactions required to obtain connections to the grid.	Djankov et al (2002)	Distribution Utilities
System Average Interruption frequency Index (SAIFI)	Measures the total number of interruptions by average number of customers over a period of 12 months. This excludes outages caused by power cuts due to force majeure due to natural occurrences but includes power cuts and interruptions due to load shedding and scheduled power cuts due to maintenance. **Note:** occurrences are counted after every 5 minutes to improve comparability	Arlet (2017:5)	Distribution Utilities and IPPs and Concessionaires
System Average Interruption duration Index (SAIDI)	Measures the time it takes to recovery from an interruption/total outage duration (in hours) and frequency over a period of 12 months. It excludes interruptions caused by force majeure but includes: power cuts due to scheduled power cuts and scheduled maintenance **Note**: occurrences are counted after every 5 minutes to improve comparability	Arlet (2017:5)	Distribution Utilities and IPPs and Concessionaires

Momentary Average Interruption Frequency Index (MAIFI)	MAIFI is a reliability indicator used by electric power utilities. MAIFI is the average number of momentary interruptions that a customer would experience during a given period (typically a year). Electric power utilities may define momentary interruptions differently, with some considering a momentary interruption to be an outage of less than 1 minute in duration while others may consider a momentary interruption to be an outage of less than 5 minutes in duration. MAIFI may be caused by transient faults, such as lightning strikes or vegetation contacting a power line, and many utilities use recloses to automatically restore power quickly after a transient fault has cleared. **Note:** it is less reported	Wikipedia	Power Utilities
Customer Average Interruption Duration Index (CAIDI)	$\text{CAIDI} = \frac{\sum U_i N_i}{\sum \lambda_i N_i}$ where λ_i is the failure rate, N_i is the number of customers, and U_i is the annual outage time for location i. In other words, $\text{CAIDI} = \frac{\text{sum of all customer interruption durations}}{\text{total number of customer interruptions}} = \frac{\text{SAIDI}}{\text{SAIFI}}$ CAIDI gives the average outage duration that any given customer would experience. CAIDI can also be viewed as the average restoration time. CAIDI is measured in units of time, often minutes or hours. It is usually measured over the course of a year, and according to IEEE Standard 1366-1998 the median value for North American utilities is approximately 1.36 hours.	Arlet (2017:5)	Distribution Utilities and IPPs and Concessionaires

Source: Developed by researcher (2019)

Figure 1.1 above highlights perceived and industry measures of competitiveness of the energy sector.

Towards 1997, the government of Uganda initiated reforms in the electricity sector with the objective of making the energy sector efficient. To improve efficiency in the energy sector, GoU opted to liberalize the sector and ushered the energy sector into a new era of public private partnerships. The government entered into concession agreements with private sector players for generation and distribution of electricity while retaining the sole mandate through Uganda Electricity Transmission Company Limited (UETCL) to transmit and handle bulk-trading business.

From hydroelectric power stations located at Nalubaale (Owen falls Dam), Bujagali Power Dam, Kiira Power Stations in Jinja, other hydropower power dams have been constructed across the country. In addition, there are thermal, mini and micro-hydro power stations scattered in the country, which either contribute to the national electricity grid or directly serve specific communities and or individuals. These include Kisiizi Hospital, Kihihi generation plant for thermal power, and the West Nile Rural Electrification Company (WENRECO) among others.

Electricity is also supplied to the main grid by the thermal generators and some from Bagasse plants. Uganda also imports some electric power from Rwanda as a cost effective measure to serve Kisoro town, which is nearer the grid from Rwanda than to the one in Uganda. Some of the generated power is exported to neighboring Kenya, Tanzania and Rwanda. Due to some of these initiatives, the total installed capacity of electricity power plants increased by 15.2 percent from 718.4 MW in 2012 to 827.5 MW in 2013(Uganda Bureau of Statistics, 2012:np) and now installed generation capacity is estimated at 859MW as at 2016 (Electricity Regulatory Authority,2016:1).The sustained increase has been due to electricity installations at Bagasse Electricity installation, additional a PPP encounter between the GoU and Bujagali Energy Limited ,commissioning of Kabalega Hydromax Buseruka and increase in the generating capacity of Electromax (Electricity Regulatory Authority,2016:np).

These trends are believed to have over years contributed to economic growth and development. As a relatively late adopter in the use of PPPs, the GoU has not had systematic criteria for selecting the most appropriate PPP model to adopt; from

concession contracts through to Build Operate Transfer (BOT) and more recently Private Finance Initiative (PFIs).

The rationale behind the liberalization of Uganda's electricity sector is to improve efficiency, increase access, affordability and availability of electricity. Liberalization in the context of Uganda have over years involved privatization of formerly government owned enterprises and parastatals, cost sharing services signing up of concessional agreements and recently public private partnerships. At the peak of liberalization has been the popularity of PPPs, geared at improving competitiveness of the hydroelectricity energy sub sector in Uganda (ERA 2016:1).The provision of infrastructure is crucial for driving economic growth and development (Srinivasu and Rao, 2013:81).

World over, public private partnerships are increasingly being adopted to deliver public infrastructure and services in form of roads, power dams, railways, health care services, education (Frazer, 2005:14). PPPs are defined as an arrangement between a contracting authority and a private party where a private party undertakes to perform a public function or provide a service on behalf of the contracting authority, receives a benefit for performing a public function by way of compensation of a public fund: charges of fees collected by the private party from users or consumers of the service provide to them: or a combination of such compensation and such charges or fees : and is generally liable for risks arising from the performance of the function in accordance with terms of the project agreement (Republic Of Kenya, 2013:1-14). World Bank (2015:1-10), defines a PPP as a long-term contractual arrangement between a public entity or authority and a private entity for providing a public asset or service in which the private party bears significant risk and management responsibility.

According to Regan (2005:2), PPPs are arrangements for procurement of goods, services utilizing franchising and similar arrangement with the private sector: the private sector contracted to provide public goods and services on behalf of government. Public private partnerships on the other hand are defined as long term contractual agreements between the public and private sector in which the contractor (typically a consortium of firms) has the responsibility for significant aspects of the building and operation of

infrastructure for delivery of public services (Elisabetta Iossa, Giancarlo Spanglo and Mercedes Vellez,2014:2).Public-Private partnerships (PPPs) combine the resources of government with those of private agents (businesses or not-for-profit bodies) in order to deliver societal goals (Skelcher, Mathur and Smith, 2005:1).

Despite not having a global authoritarian definition of PPPS, analysis of PPP perspectives suggests that there is limited variations in definition of PPPs. On the large, PPPs refers to risk sharing contractual engagements between the public sector (contracting party) and the private sector or third sector (private party) players for delivery of efficient, effective, economic and sustainable public services. Deciding on how risk will be shared to deliver the virtues of PPPs remains a question for policy makers. This brings to play the concept of PPP contracting routes (Iossa et al., 2013: 2) asserts that worldwide experience with PPPs suggest that there is no a "one–size-fits-all" principle when it comes to contract design. Chong, Huet, Saussier and Steiner (2006: 1) assert that PPP contract design will be influenced by the objective and sector.

In the UK, Private Finance Initiatives (PFI's) have dominated the centuries of PPPs adoption (Home Treasury, 2014 and Cole Andrew 2014:2). According to the World Bank (2014:4), PPPs have been dominantly implemented in energy, transport, telecommunications, and water sectors.
This view is in line with UNCTAD (2016:95-96) where the sector cited by World Bank (2014:4) dominate PPP investments globally and in Africa. Other forms of PPPs that have seized dominance in over the last two decades are Build Operate Transfer (BOT) where the private sector players build the Build Own Operate and Transfer (BOOT).

PPPs enable governments to deliver effective, efficient and sustainable public services. Several scholarly works demystify this view, World Bank (2014): Yannis Arvanitis (2014:7). In line with this view, Hamisi, Jitta, Mwangui and Busienei (2014:1) asserts that PPPs have a positive impact on provision of quality services as cost and time of doing business can reduce over years. The World Bank Group (2015: 1) maintains this view. Organization for Economic Development (2015:10) also argues that PFI projects are perceived in some cases to have made windfall gains, leading to questions about

the value for money of projects to the taxpayer (these were partially addressed by the PFI gain-sharing mechanism). By using PPP arrangements, experts transfer risk and allocate risks to the party who is most capable of managing them in a cost effective manner, Guan-Wei Jang (2010:1).

A review of literature suggests that countries have adopted PPPs due to several motivations: lack of capital, Mukasa, Mutambatsere, Arvanitis, and Triki (2015: 2) constrained cash flows (Iossa et al., 2013: 3), lack of technical expertise and need to improve country competitiveness at sector level, Republic of Uganda Vision (2040: 1).

Amidst this backdrop, the GoU has increasingly adopted PPPs' in implementing strategic government investments in the transport, healthcare, education, energy, telecommunications sectors. Most recently the GoU through Uganda Wildlife Authority is seeking private investors for PPP engagement in order to grow the tourism sector as yet another vital national cash flow stream. However, all PPP projects in public investments implemented in Uganda implemented have under achieved (World Bank, 2016: 1).

1.3 Problem Statement

Accelerating Uganda's structural transformation and transition towards middle income status will require facilitating higher levels of growth, improving productivity, and creating jobs for the large and growing population (World Bank, 2016:1). To achieve this, PPPs in Uganda are considered as one of the strategic mechanisms that have been identified as a mechanism for boosting priority sectors such as transport and energy (Vision, 2040: 1-10). The objective of such investments is to cushion national cash flows against declining revenue, improve competitiveness, and reduce cost of doing business whilst transforming Uganda to become a middle income country by the year 2040. One of such prominent hydro power investments has been Bujagali and Karuma Hydro Electricity Power Dams. Located on the River Nile near Jinja, the Bujagali dam is owned by Bujagali Energy Ltd (BEL), a special-purpose vehicle owned in turn by Industrial Promotion Services, which is part of the Aga Khan Fund for Economic Development, and SG Bujagali Holdings, an affiliate of Sithe Global Power, LLC, part of Blackstone, the US-based private-equity fund.

The Ugandan government holds a 4.63 percent stake in BEL, which has a 30-year build-own-operate-transfer (BOOT) concession over the dam. Initially delayed by environmental concerns and allegations of corruption, Bujagali was eventually built as a public-private partnership to reduce the electricity crisis that Uganda faced in the past decade that had forced GoU to resort to expensive emergency thermal electricity generation. Although much cheaper than thermal, the cost of power generated from Bujagali is, at $0.11 per kilowatt-hour, higher than many projects of similar size. Promoters of the reverse-privatization proposal believe that the cost of finance and the return on investment contribute to the end-user tariffs (The East African, 2015: 1-2). On the other hand, GoU initiated and started Karuma Dam project in 2013 that is expected to be completed and commissioned in December 2018.

The project is currently being financed by Exim Bank and the GoU under a traditional procurement framework. The project is estimated to cost GoU an estimated USD1.7billion. Once the project is completed, it is expected to deliver installed capacity of 600MW to Uganda's hydroelectricity national grid. Assessments of the impact of African electricity management contracts (PPPS) indicate improved performance, including greater labor productivity, better collection rates, and reduced system losses (Work Bank Group,2013:8).

Despite the value that Karuma dam is expected to deliver in improving competitiveness of the energy sector more importantly hydroelectricity subsector and overall competitiveness of Uganda, there current developments of alleged corruption, cancellation of contracts, allegation of breach of national procurement guidelines, use of poor quality material inputs cracks, missed stages in construction to increase profitability at the dam before project completion and commissioning at Karuma Dam project, create a bothering encounter for politicians, policy makers and citizens. In addition, World Bank (2016: 3) suggests that over the past decade, for every dollar invested in Uganda's capital infrastructure (including PPPs in the hydro sector), only seven-tenth of a dollar has been generated. This is far below countries that have successfully undergone structural transformation. The study further suggests that

Uganda's public investments are falling short of generating the desired economic return yielding only 70% return on every dollar investment unlike elsewhere where return are 4 to 6 times. This puts public investment in a vulnerable situation.

The goal of PPPs adoption in undertaking public investments in the hydroelectricity subsector is to improve competitiveness of the sector: reducing power losses, more power to the grid, reduced cost of production, innovation, more connected citizens, enabling business startups, improved return on public investments, increasing jobs and tax revenue necessary to service public debt.

However, allegations of corruption, inflated costs, missed targets, lack of experience in selecting most PPP appropriate models in the hydroelectricity sub sector has negatively impacted the role of PPPs in bringing extra relevance to improving competitiveness of Uganda's hydroelectricity sub sector and overall Uganda's economy. A review of theoretical suggest that PPPs literature suggests that PPPs are not delivering their worth in various sectors of the economy (Ndandiko, 2006: 359: Hall, Norment, 2005: 461)

While effort has been made to study PPPs in Uganda (Ndandiko,2006:359:Kabanda,2014:1-13:Nsasira et al,2013:1-14), there remains a gap in understanding the most appropriate PPP models that can be used to improve competitiveness of the hydroelectricity sub sector in Uganda.

By undertaking a study to close this gap, and discovering the most appropriate PPP model, Uganda can be positioned to increase competitiveness of the hydroelectricity subsector, which is necessary for resonating Uganda's national and regional competitiveness as Pearl of Africa. The proposed study therefore seeks to fill these gaps by exploring ways in which PPPs can be used to deliver better return on public investment in Uganda's hydro electricity sector whilst improving its competitiveness.

1.4 Research Questions

Parahoo (1997: 396), defines a research question as a broad question which is set at the start of a study. These include explanatory and exploratory questions. According to

Marshall and Rossman (1995: 41), such questions help to understand what is happening and how patterns are linked to one another. Therefore, the proposed study will make an inquiry into how GoU can use PPPs to improve competitiveness of its hydroelectricity energy sector. The study was guided by the following research questions (RQs:

a) What PPPs models are implemented in in Uganda's Hydroelectricity sub sector?
b) What is the legal and regulatory framework for PPPs in Uganda?
c) What lessons can government learn to improve PPP performance and competitiveness of the hydroelectricity sub sector?
d) What are the challenges faced in implementing Karuma and Bujagali Dam projects?
e) What is the most suitable PPPs for improving Uganda's competitiveness of hydroelectricity sub sector in Uganda?

1.5 Objectives of the Study

The objectives of the study were:

a) To identify public private partnerships models implemented in Uganda hydroelectricity sub sector.
b) To examine the legal and regulatory environment of PPPs in Uganda
c) To identify lessons learnt to improve PPPs performance and competitiveness of Uganda's hydroelectricity sub sector.
d) To assess challenges faced in implementing Karuma and Bujagali Power Dams.
e) To establish the most suitable PPPs for improving competitiveness of Uganda's hydro electricity sector.

1.6 Theoretical Statement

Traditionally, governments used various channels to deliver public investments (World Bank 2016: 1). Previously, the most common channel is for government to allocate resources through its budget process and have individual Ministries, Departments, or Agencies or local governments implement their investment budgets.

Increasingly, governments have chosen to undertake large infrastructure projects through PPPs, often establishing extra budgetary funding and separate institutions to manage such operations. Public private partnerships are relationships between two or more parties: government and firms or joint ventures where governments act as the principal and agents (private party) acts at the manager. Changing attitudes to public service delivery and dissatisfaction with conventional procurement methods provide a beginning for adoption of PPPs (Grimsey and Mervyn, 2004: 345-378).

This then requires that policy makers, politicians, business managers, the entrepreneurs understand the functioning of PPPs at greater depth. The agency theory provides part of the answer in providing an introduction to modalities associated with the use of PPPs in delivering public investment by governments as a principal and the private party as an agent. Despite this principle, managerial actions depart from those required to maximize shareholder returns (Berle and Means 1932204-5: Pratt and Zeckhauser, 1985: 12-15: Donaldson and Davis, 1991: 49-64). In the event that the agent makes losses, the principal suffers losses as a residual claimant of the business.

In an agency relationship, mechanisms to reduce losses must be adopted (Eisenhardt 1989: 57-64). These include incentive schemes for managers, which reward them financially for maximizing shareholder interests.

In an era where the government of Uganda is increasingly making losses in public investments (World Bank 2016:2), the use of Agency Theory is deemed appropriate in guiding the study of PPPs and their implications in improving competitiveness of the hydroelectricity sub sector.

1.7 Significance of the Study

Public private partnerships are considered as a means through which government can adopt to deliver public services efficiently and effectively to its citizens and a broad spectrum of stakeholders (World Bank, 2015:1). The complexity of adoption PPPs in Uganda's hydroelectricity subsector sector will be highlighted. The study is unique as none of this kind of study has ever been carried out in Uganda. It is envisaged that the

end of this study, best practices were identified and new knowledge added to theory and practice of PPPs in Uganda's energy sector.Furthermore, the study will provide information that is necessary for selection of the most appropriate PPPs for adoption in the hydroelectricity sub sector in Uganda. The study will also avail a definition of competitiveness of hydroelectricity sub sector in Uganda to guide strategic decisions necessary to improve overall competitiveness of Uganda. It will provide a contribution to existing scientific knowledge in understanding PPPs and their role in contributing to competitiveness of the hydroelectricity sub sector in Uganda. Lessons from the study will help in policy makers in designing and implementing PPP agreements that will helps in improving competitiveness of the hydroelectricity subsector in Uganda.

1.8 Delimitation of the Study

The delimitation of the study was that: only two dams Bujagali and Karuma Power Dam project were studied and the research will focus on PPPs and competitiveness of the hydro electricity sector in Uganda.

1.8.1 Limitations of Study

The limitations of the study are:

a) The study involves retrieving data by requesting seeking to retrieve sensitive information associated with Karuma Dam Project that may arouse negative emotions. Deploying emotional regulation was considered by monitoring respondent emotions and refining questions when negative emotions start to arise amongst respondents.
b) The study occurred in a cross language environment. Despite this context, the language barrier did not manifest. To overcome this challenge, the study deployed a research assistant that was able to speak and comprehend multi languages.
c) The cases were under study conflict environment. A conflict environment is one in which people, whether individuals or groups perceive their needs, goals or interests to be contradicted by the goals or interests of the other side (Kriesberg, 1998: 3). Allegations of corruption and gross unethical conduct are alleged to have occurred and are still occurring among the technical implementers of the project. Retrieving data from such an environment manifests complexity and common attitudes of

distrust and suspicion. Guaranteeing the anonymity of the respondent, as well as that of his/her referrals, was central in retrieving data in the study environment.

1.9 Chapter Summary

This chapter provides a background to PPPs and competiveness of the hydropower subsector in Uganda. It describes that problem that motivated undertaking this study. The chapter describes objectives and research questions that guided the study. A theoretical statement that guided the study was provided. Furthermore, the chapter describes the delimitations of study and limitations of the study. The next chapter provides a discussion on debates on PPPs and their adoption across various sectors including hydropower power sector.

CHAPTER2: THEORETICAL FRAMEWORK, INTERNATIONAL EXPERIENCES ON PPPS IMPLEMENTATION

SUBSECTION I

2.1 Introduction

This chapter provides a discussion of the status of Global hydro electricity sector. It provides insights into competitiveness of hydroelectricity, challenges faced by the sector. The chapter provides a discussion of the adoption of PPPs in the sector including procurement of PPPs. It also provides a review of literature of most popular PPP forms adopted in the hydropower energy sub sector.

2.2 Theoretical Review

The Agency Theory was adopted as a foundation theory used to establish the conceptual framework for this study. The theory is founded on the assumption that the goals of principals and agents diverge and that agents may take advantage of information asymmetry" (Brinkerhoff and Bossert, 2013: 686; Brinkerhoff, 2015: 301-314).

It is argued that economists and lawyers have used the agency theory widely because economics is based on scarcity and law is based on advocacy, it is inevitable that goal conflict is part of any principal-agent theory (Waterman and Meier, 1998: 187). Several studies (Eisenhardt 1988: 41: Rokkan and Buvik, 2003: 13) have contributed to the literature on agency theory. A review of such studies points to some commonality. The commonality relates with the relationship between a principal and an agent. The relationship contained in the Agency Theory is concerned with the arrangement that exists when one person or entity (called the agent) acts on behalf of another (called the Principal). In this case, the public party becomes the principal while the private investor/contractor is the agent. While some agents will seek to deliver quality work, others will seek profit maximization at the lowest cost possible (Rokkan et al, 2003: 13).This causes challenges as it places the adoption of PPPs at contestation. Based on

Agency theory, the success of a PPP will always depend on how well principal-agency relationship should be properly managed (Waterman et al., 1998: 187).

The principal contracts the agent the obligation to perform some services on behalf of the principal. These contracts require the agent to exert effort: make decisions while at times implement decisions made by the agent. For example, shareholders of a company (principals) elect management (agents) to act on their behalf, and investors (principals) choose fund managers (agents) to manage their assets. That is the management make operational decisions on behalf of the company shareholders for instance maximization of revenues and minimization of costs among other decisions. With this relationship, the principal engages the agent who acts and makes decisions on behalf of the principal (Parker, Dressel, Chevers and Zeppetella, 2018: 239-259: Eisenhardt, 1989: 57-84: Bergen et al., 1992:np).

This relationship works well when the agent is an expert at making the necessary decisions, but does not work well when the interests of the principal and agent differ substantially.

2.2.1 Rationale of adoption of Agency Theory in Public Private Partnerships (PPPs) studies

Principal-agent theory has become a widely used paradigm for analyzing public accountability in delivery of public services. This is because it provides a flexible framework for modeling innumerable variations in institutional arrangements, and comparing their potential for inducing desirable behavior by agents, (as cited in Wagana, Iravo and Nzulwa, 2015: 463). There is a growing literature concerning the application of the agency theory to public service provision (Zang et al, 2019:4). More importantly,it is asserted that the agency theory has become popular in the study of PPPs (Parker, 2018:239-259: De Palma et al, 2008:1-177: Garvin et al, 2017: Nguyen, 2017:48, Silaghi, 2010:3). The theory focuses on information asymmetry, in which one of the two parties is better informed than the other, and in which they do not share the same interests. Opportunistic behavior can be expected in such relationships. To theory assumes that if incentives to the agent are mutually beneficial, moral hazards can be

deterred in the relationship. On the other hand, dilemma may set in if one agent makes decisions that are contrary to those of the principal. The theory is relevant in the studies associated with adoption of PPPs due to the existence of similar actors and assumptions. The theory has also been adopted in other similar studies (Solheim-Kile, Lædre and Lohne, 2019: 8756972818824908: Parker, 2018:239-259: De Palma et al, 2008:1-177: Garvin et al, 2017: Nguyen, 2017:48, Silaghi, 2010:3). Based on this notion the study adopted the Principal Agent theory.

2.3 Hydro Power

Hydropower is a term used interchangeability with hydroelectricity. Hydropower is considered as one of the key catalyst for economic transformation (Adenkinju, 2008:27: World Bank, 2017:1 UEGCL, 2015:5, USAID, 2017:1: Adu et al, 2018:2-3). Hydroelectricity is the production of electrical power with the gravitational force of falling water.

Over 16.6% of global electricity is generated using hydro and is considered world's largest renewable and sustainable source of electricity (IHA, 2018: 1-5). The world largest hydro power plants are argued to be based in China, Americas, Brazil, India and Russia (McKenna, 2012:2-3).

Hydropower is considered as the number one source of renewable energy and accounts for almost a fifth of the world's electricity (Adu et al, 2018: 2). In countries like Ethiopia, hydropower contributes about 90% of the electricity generated and consumed (Adu et al,2018:2) Hydropower is be fuelled by water unlike other sources that are powered by oil, batteries, charcoal that have negative effects to the environment (Adu et al,2018:2-3). It is further argued that hydropower is a catalyst for economic transformation and prosperity. In this line of thought, it is asserted that hydropower can transform livelihoods, reduce poverty and power industrialisation. This is view is prominent it is argued that the nature of hydropower that transforms nations must be affordable and available (World Economic Forum, 2018).

Despite the limits of trace of such thinking, a review of literature provides varying viewpoints. Porter (1998: 2) argues that national prosperity is not inherited but made. This implies that countries must explore strategy that challenges national heritage assumptions if they are to drive competitiveness across sectors of the economy and ultimately make their country competitiveness within the region and the world.

World Economic Forum (2018:1-35) reveals that scaling development and attraction of foreign direct investments and industrialization requires a competitive hydro electricity sector. This remains a concern globally. In understanding of such proposition, it is important to internerlise the meaning of a competitive hydropower sector.

Competitiveness of the hydro electricity sector can be viewed from various fronts. It can be viewed in terms of efficiency, and availability.

Adenkinju (2008: 27-28) argues that *'energy efficiency is a concept expressed by a set of measures or the effects of those measures whose objective is a reduction of energy consumption such that consumer satisfaction is maintained. Energy efficiency is not simply confined to the management of demand, but can also be applied to production, transport and distribution of energy.*

While various measures have been provided by various scholars, development bodies and utility agencies point to common indicators of energy efficiency.

Some scholars view energy efficiency as an index of energy intensity which measures the quantity of energy required to generate one-dollar unit of aggregate output (Adenkinju, 2008: 5-8).

The lower the value of energy intensity, the more efficient an economy can become. Other measures include technical efficiency, effective residential tariff (cents/kilowatt hour (kWh), quality expressed in terms of number of unplanned outages per year and efficiency ratios such as cost recovery-based on effective tariff and implicit collection-based on effective tariff. In addition, total hidden costs of inefficiencies as both as a

percentage (%) of GDP and utility revenue (Adenkinju, 2008:8: Eberhard, et al., 2008: 5).

A review of the work of World Bank (2017: 1) under its RISE methodology tends to suggest that competitiveness of a country's energy sector needs to be approached from three dimensions: energy (electricity) access, energy efficiency and renewable energy. While this view is consistent with the traditional measure of competitiveness of electricity that focused on access to power by consumers, it extends the definition of competitiveness of electricity.

Globally, access to electricity has been popularly defined as the nearest distance of electricity to users (WB, 2017). This is contrary to the traditional view that has defined access to electricity as the physical availability of electricity and modern energy carriers and improved end-use devices such as cook stoves at affordable prices for all (Barnes, et al., 2016: 1405).

However, there is an increasingly popular view which suggests that in an era of where electricity is used to improve livelihoods, the definition should be broadened. Proponents of such thinking argue that the definition should be extended to focus on measuring aspects such as "*making available reliable, adequate qualities and quantities of energy and the associated technologies at affordable costs in a manner that is socially acceptable and environmentally sound so as to meet basic human needs and for activities that are income generating and could empower growth and development*" (Barnes, et al., 2016:1405).

It is further argued that enhancing the definition requires that quality: reliability, adequacy, affordability, acceptability, and environmental soundness are considered in building a robust definition. While this is promoted, national level indicators and statistics that measure and monitor these various dimensions of access are extremely scarce, particularly for the least developed countries and regions where the issue is the most pressing (Barnes, et al., 2016:1405). To gain deeper insights, it is worth reviewing global trends on electricity.

2.4 Status of Global Hydro Power Sector

The origin of power plants is traceable in 1878 in England while operation of the first hydro power plant started in Wisconsin in 1882 (Smil,2005:1; Nojavan and Aalami, 2015:1008-1018).

Over the years, it is asserted that opportunity generating mechanical energy from mobile water in lakes and rivers has motivated nations to increase their start and investment in hydropower generation (IHA, 2018: 5). By close of the year 2017, it is estimated that installed global hydropower reached 4,102gigawatts (GW) (International Hydropower Association, 2017: 5). Globally it is argued that hydropower is number one contributor to clean renewable electricity. According to IHA (2018: 5), China is considered to possess the highest share of installed capacity at 341GW, followed by USA at 103GW, Brazil 100GW, and Canada 81GW. In South America, Brazil is asserted to be on the lead with 100GW followed by Venezuela at 15GW (IHA, 2018: 5).

It is further argued that in Scandinavian countries, Norway contributed 32GW to global share of installed capacity followed by Italy 22GW and Spain 29GW. (IHA, 2018: 1-5).

In Europe, the top contributors to global share of installed hydro capacity have included Norway 31,837megawatts (MW), Turkey 26,681MW, France 25,517MW, Italy 21,884MW, Spain 20,334MW while the least contributors are Denmark and Estonia with 9MW and 8MW respectively (International Hydropower Association IHA, 2018: 72). Other countries that pull significant share of the world's hydro installed capacity have included Japan 50GW, India 49GW, and while Russia 48GW (IHA, 2018: 2).

In Africa, it is argued that 70% of the populations do not have access to electricity. Various authors support this view (Lukamba et al.2006: 23). While countries like Egypt have close to 100% access to electricity, IHA (2018:67) argues that countries such as South Sudan and Chad still remain with anemic levels of limited access to electricity as 91% of the national population remain unserved with electricity (IHA,2018:67). It is further argued that the African countries that have contributed largest share of the global share of installed hydroelectricity have been Ethiopia 3,822MW, South Africa

3,595MW, Egypt 2844MW, DRC 2,593MW, Angola 2415MW and Zambia 2397MW. (IHA, 2018: 64). In North Africa, Nigeria leads with installed capacity of 2,062MW followed by Sudan 1923MW, Morocco 1770MW, and Ghana 1584MW (IHA, 2018: 64). On the other hand, countries like Benin and Burkina Faso provide the lowest contribution at 33MW and 32MW (IHA, 2018: 64).

In the Southern Africa Development Community (SADC) region, South Africa leads with installed capacity of 3595MW, followed by DRC 2,593MW, Zambia 2,397MW, Angola 2415MW, Mozambique 2191MW, Zimbabwe 941MW (IHA, 2018:64). On the other hand, countries such as Mauritius come low on contribution to global share of installed hydro capacity at 60MW (IHA, 2018: 64). In East Africa, Kenya provided leadership with 824MW, Uganda 743MW, Tanzania 572MW, Rwanda 105MW and Burundi 55MW, while South Sudan provides the least contribution to global hydro installed capacity (IHA, 2018:64).

2.4.1 Status of Hydro Power in Uganda

Uganda is viewed as a country endowed with energy resources that are evenly distributed across the country but with varying levels of access to electricity (Equal Opportunities Commission, 2018). While this provides a complex situation, the root cause perhaps could be traceable from the historical trail of hydropower production in Uganda.

According to Kabanda (2014:5), origins of hydropower in Uganda are traceable in the colonial period with the first dam constructed in Jinja, and launched as Owen Falls Dam commonly referred to as 'Nalubaale Dam' by the British colonial government. It is argued that unbundling of electricity administration within the electricity sector resulted into the creation of various utility agencies in the sectors. Creation of Uganda Generation Company Limited (UEGCL) for generation, Uganda Electricity Distribution Company Limited (UEDCL), Uganda Electricity Transmission Company Limited (UETCL) for transmission, and Electricity Regulatory Authority (ERA) for regulation and licensing (Kabanda, 2014: 2-5). Other agencies have been created along the way to support Uganda's dream of increasing electricity access such as Rural Electrification Agency

(REA) responsible for extension of electricity to rural areas while Uganda Energy Capital Credit Company limited (UECCCL) has been created to provide capital at low interest rates for investments in energy with hydropower being one of the priority investment areas.

On the other hand, to upscale hydropower generation the GoU sought to extend private stakeholder involvement in electricity generation. To transfer of risk government has increase the role of the private sector in electricity generation and distribution. While such engagements commenced with mere consultations on policy reforms, short term outsourcing, they have transited to more long-term relationships that are popularly known as public private partnerships (PPPs) in the area of hydropower electricity generation and distribution. While this trend has happened, government through its agencies have retained some role in generation by UEGTCL while in distribution, UEDCL has retained the mandate to distribute electricity in areas considered unprofitable by the UMEME Concession especially in remote parts of Uganda.

IHA (2018: 70) reveals that Uganda has 957.7 MW installed hydropower capacity. Seventy-eight (78%) that represents 743 MW of installed capacity is generated from hydropower. IHA (2018: 70) further reveals that the potential for installed capacity is 5,300MW of which 2,200MW can be generated from hydropower sources. The major hydropower sources have included Bujagali Dam 250MW Kira Dam 200MW and Nalubaale Dam 183MW. The Ugandan government is aiming at increasing the current 78% hydropower mix by 2040 to 90%. (IHA, 2018: 71: National Planning Authority NPA, 2013: np). To achieve this plan, the government has started investing in several hydropower projects (HPPs). The key HPP projects under construction include Karuma Dam 600MW and Isimba 183MW under implementation (UEGCL,2018) while others completed and in operation are Bujagali HPP 250MW (ERA,2012). With the two key projects under construction, it is envisaged that Nalubaale and Kiira HPPs will add supply of electricity to the existing pool of hydropower supply that has been led. To achieve the generators' mission 'to sustainably generate reliable, quality, and affordable electricity for socio-economic development' the sector has and continues to implement several other HPPs as cited in table 2.1 below:

Table 2.1: Status of projects under development by UEGCL

Projects	Capacity (MW)	District
Rehabilitation of Nalubaale/Kiira	380MW	Jinja
Karuma HPP	600MW	Kiryandongo/Oyam
Isimba HPP	183MW	Kamuli /Kayunga
Muzizi HPP	43MW	Kibaale/Kagadi
Nyagak III HPP	6.6MW	Zombo
Okulacerere HPP	6.5MW	Arua

Source: UEGCL (2018)

According to IHA (2018: 71), other projects under implementation include Agbnika HPP 2.2MW, Achwa 83MW and Maziba HPP 1.2MW. Other HPPs include: WENRECO and other Independent Power Producers (IPPs) spread across the country. From a legal and regulatory context, several reforms have taken place as well. It is argued that the reforms were aimed at improving efficiency and effectiveness in the broader energy sector but more importantly the hydropower sub sector (Kabanda, 2014).

In 1999, the government enacted the Electricity Act. Other laws and regulations in the sector that influenced the supply chain of electricity in the sector followed this. These have included: Public Procurement and Disposal Act 2013 and its proceeding amendments, Public Private Partnerships (PPPs) Policy 2010, PPP Act, 2015.

2.5 Public Private Partnerships -A Historical and Conventional Concept

PPPs have been adopted in the delivery of public services by governments over the last 4 decades. The adoption of PPPs has been influenced by various factors that have varied from one country to another. While PPPs adoption was initially being slow, the pace of PPP adoption has gained momentum globally over the last decades (Hodge and Greve, 2009:1: Akintoye, 2005:2), Osborne (2000:1). The pace of PPP adoption was escalated in the 1990s as countries pursued radical shift in national policies aimed at

macro and micro economic stability and improvement. Since then and up to date, PPPs have become a popular tool of public policy across the world (Osborne 2000: 1), in an era where New Public Management (NPM) is promoted. To understand this background, it is important for scholars and public administrators to appreciate the concept of NPM.

The concept of NPM professes a shift on focus of management from public service to service delivery. The shift has been caused by greater demands by citizens that governments deliver more for less. Since the 1980s, privatization, market mechanism, contestability in the delivery of public goods and services, deregulation, and reinvention of the role of government were the keywords of NPM. At the centre of that NPM was a cutback of public sector expenditure, a delegation of responsibilities to the private sector and fostering of voluntary engagement of private sector aiming at providing public goods (Mitchell-Weaver and Manning, 1991: 1).

PPPs have become a strategy through which countries are seeking to realize their national visions (Buso et al., 2019: 1-2: Wang et al.2019:1-5). In the UK, PPPs have been adopted to deliver key infrastructural projects through Private Finance Initiative (PFI) Model. In India and Columbia, PPPs have been popular in transport, education and healthcare service provision. Over the years, governments world over have adopted PPPs in delivery of public services. The popularity of PPPs started in the 1990s (Akintoye, 2005: 3: Hodge and Groove, 2008: 2). PPPs are now widely accepted as a critical tool in public sector management (Khanom, 2010: 1). There is agreement that PPPs are an acceptable approach to deliver public services across various sectors: telecommunications, hydroelectricity, agriculture, healthcare, and education. (Wang et al, 2019: 1-4).

In the US, Europe, and the UK, PPPs are common at municipal, county, and state levels, with a combination of local, state, and federal funding (Brinkerhoff et al.,2011:6).

2.6 International Experiences of PPPs

This subsection contains review of literature on international experiences of PPPs across the world. The subsection is a discussion of PPPs in the United Kingdom, BRICs,

Australia, Nigeria, and East Africa. The discussion focuses on origins of PPPs, types of PPPs adopted across sectors using country experiences, motivations for PPPs adoption in public service provision. The review further assesses the challenges faced in implementing PPPs highlighting the critical success factors for PPPs adoption. The chapter concludes with a review of experience of PPPs in the energy sector with a bias on hydropower energy subsector.

2.6.1 PPPs in Europe

IMF (2004:3) reveals that countries that adopted PPPs as an alternative to traditional methods of public service delivery have included Ireland, Chile, the United Kingdom and Mexico. It is also asserted that the adoption of PPPs in such countries was in the early 1990s but over the years, PPPs have come to be adopted in most parts of the world (IMF, 2004:3: Athias et al, 2019:193). The Fund argues that the popularity of PPPs has majorly been driven by increased demand for public services amidst constraints associated with providing and managing public infrastructure assets (IMF, 2004:3). This has led to the escalation of PPPs across the world but more importantly in Europe. Most countries adopted PPPs with the UK providing leadership in PPP uptake as at the end of the year 2016. It is asserted that this was due to high demand for public services that was created by industrialization and urbanization. To the contrary it further asserted that that ushered in an era of constraints in provision of public services (Wollmann et al., 2010: 168-190). While private participation was encouraged and promoted, bankruptcies that swept in the mid-1940s then created a reversal of policy as provision of electricity reverted to municipalities and broadly the state (Wollman et al., 2010:169). However, integration in the EU required that members open up electricity markets for competition giving bulk customers (business and industrial) liberty on who to buy electricity. This situation resulted into mergers and creation of anti-competitive behavior as the market had created oligopolistic structure that would provide electricity at lower prices than municipality company owned energy companies provides referred to as '*Stadtwerkes'* would offer. The impact of legislative environment in the EU on Germany's electricity markets has been deemed to be unfavorable to *Stadtwerkes* which has resulted into "*marriages of inconvenience and hostility* "as municipal corporations have

been either been bought off by the private corporations or have extended some equity to private players in the electricity markets (Trapp,2006:16: Wolmann,2014:2).

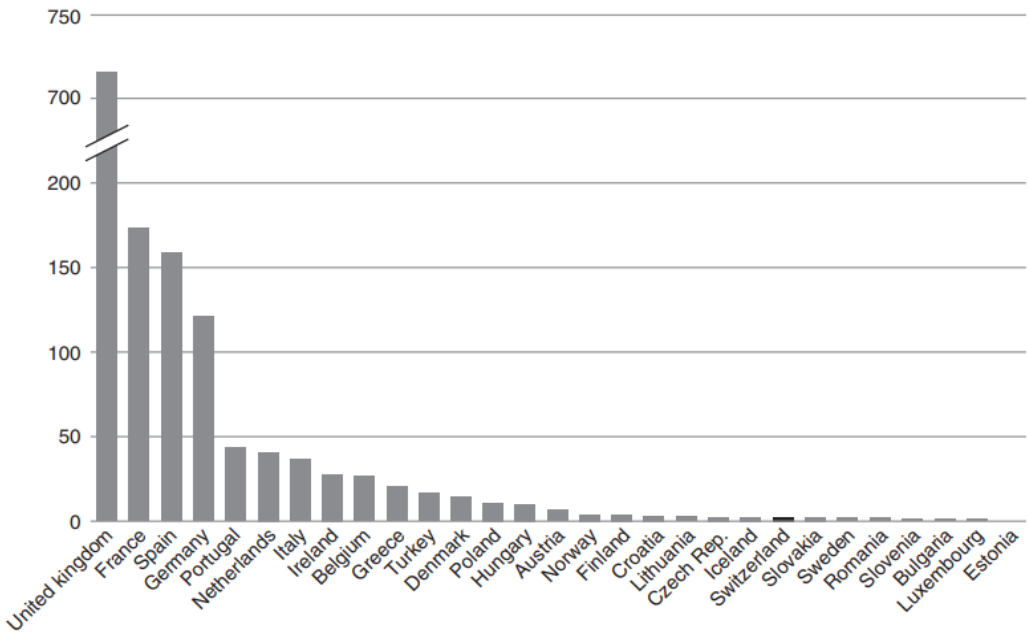

Figure 2.1: Number of PPPs in European Countries (1994–2016)

Source: Athias et al. (2019: 193)

In figure 2.1, it is depicted that the highest uptake of PPPs in Europe as at 2016 were UK, France, Spain and Germany. According to Athanias et al (2019: 193-194) the lowest PPP adopters in Europe included Estonia, Luxembourg, Bulgaria and Slovenia. From the analysis, it depicted that countries that have manifested continued leadership in Gross Domestic Product (GDP) levels have had high uptake of PPPs while those with low GDP levels have had least GDP levels. Out of the world's ranking by GDP, Germany, UK, France, Italy, Spain and Turkey have featured among the world's top 20 nations according to GDP levels, (World Bank, 2018:2). On the other hand, countries on the least end of PPP adoption do not feature among top global leaders of GDP (World Bank, 2018: 2). There appears to be a strong relationship between PPP adoption and GDP growth. This is justified by the value that PPPs are viewed as an engine of growth (Uganda Vision, 2040). Such views and other could have led to the diverse implementation of PPPs across diverse sectors of global economies. In such diversity, the electricity sector has come as a sector that has benefited from such trends.

2.6.2 PPPs in the United Kingdom

The UK is considered as an early adopter of PPPs (Akintoye, 2008: 3). In extension of this view it is argued that the Thatcher era is considered to have ushered in PPPs as a means of delivering public infrastructure in the UK with the Private Finance Initiative Model as the most popular PPP model. According to Athias et al (2019: 187), PPPs in the UK became popular in 1992. The same view is acknowledged by the International Monetary Fund (IMF) but with recognition of other countries.

Before the 1940s, electricity was considered a state owned concept (Wollmann, 2010: 168-169). It is argued that this is not different from other sectors such as healthcare and telecommunications. Previously, local government administration especially municipalities were in charge of creating national electricity systems coupled with establishment of national grids, generation, transmission, distribution and regulation dominated within the electricity supply chain such as generation, transmission and distribution (Wollmann, 2010:168-169).

In the United Kingdom, the enactment of Electricity Act in 1989 commenced the popularity of engagement of private sector actors in UK's electricity market (Knill et al, 2002: 256). This trend caused the end of the traditional era of nationalized electricity market that was promoted in 1949. It is argued that the new era ushered in 14 private electricity companies that operated alongside municipalities that were left with the mandate of managing heat and power combining facilities. Wolman, (2014: 11) asserts that the state rescinded gradually generation and distribution. The state retained the right to operate transmission and management of national grid and creation of government agency to regulate the electricity market in the United Kingdom. It is further argued that Local government administrations were left to serve local domestic electricity needs of consumers but were allowed to evacuate their surplus on the national grid (Knill and Lehmkuhl, 2002: 255-280: Wollmann, 2014: 10-12).

It is argued local government administration had to provide electricity and gas to local authority dwellers from as far as in most European states 1835 (McEldowney, 2007:122). Key consumers of electricity and gas were coal mines. However, new

developments emerged after 1945.From this time, traces of the state engaging the private sector to deliver utility services in Europe became dominant (McEldowney,2018:299-315: Wollmann, 2014:.49-76).

2.6.3 PPPs in Germany and Austria

Wollmann, Baldersheim, Citroni,Marcou and McEldowney (2010:168-190) argue that in Germany like as it was in other countries such as France, Italy, Norway and the UK, provision of public services in sewerage, energy and water was transferred to the private sector. McQuaid (2006:4-23) argues that Germany and Australia compared to the UK have been late adopters of PPPs and have had minimal investments by PPPs compared to the former.

The two countries are argued to have started PPP adoption by co-development of a railway network connecting both countries using a PPP. Several reasons are advanced for PPP adoption in Austria and Germany.McQuaid (2006:1-23) argues that while reasons may be similar like elsewhere, German and Austria have adopted PPPs due to twin objectives rotating on budget constraints and the need to drive transformation in public spend while delivering public services. It is further argued that PPPs have been adopted to reduce the burden of tax on citizens. By bringing the private sector into delivery of public services, taxation does not hurt saving and spending patterns by citizens. The two countries have adopted PPPs in the transport, water and energy to match the increasing needs that have come with the European Union (EU) integration and as a cushion to enabling these countries meet the debt to GDP levels required by EU member states, Macquid (2005:4-23). By engaging the private sector in service delivery through PPPs, countries are shielded from the need to borrow to finance public investments.

2.6.4 PPPs in France

In France, the electricity sector is considered to have evolved much faster than perhaps its counterparts like Germany and Norway. It is argued that around 1946 with the enactment of the Expropriation and Compensation Act led to government seizure of mandate of generate, transmit and distribute electricity (Wollman, 2014: 243). While

the government maintained EDF as its own company, it engaged private engagement alongside (Wollman, 2014: 243).

While various studies have attempted to provide trace of the genesis of PPP popularity across the world, they tend to zero on the UK (Akintoye, 2008: 3-4: Ball, 2011: 6: Osborne 2000: Hodge, 2005: 305-31: Heald, 2003: 342- 71). This points to the view that when tracing and tracking the popularity of PPPs, requires the review of the journey of PPPs experience in the UK. Accordingly, the journey of engagement of private sector provision became much more pronounced starting with divesting of British Telecom to the private sector in 1984 (Quiggin,2008:51-52).

On the other hand, Quiggin (2008: 51-52) argues that engagement of private parties in the provision of public services in form of building, owning and operating public infrastructure was delayed until the 1990s.This is argued to have been attributed to a requirement by the Ryrie Rules of 1981 that assessments must be undertaken to ensure that provision of public infrastructure was cheaper than the cost of public infrastructure provision that was financed by public debt).While this may have been impossible at the time, it is asserted that it then became possible in 1990s. In the early days of public private partnership adoption, the model of PPPs adopted was the Private Finance Initiative (PFI) (Akintoye, 2005: 2, Osborne, 2000:1, Ball, 2011:5-6: Quiggin, 2008:52-53: Akintoye, 2002:1-2).

A PFI is a long-term contract the public sector contracts a private operator to design, build, finance and operate an infrastructure project (Akintoye, 2002:1). The PFI model has attracted over years several benefits to the UK government. According to the UK National Audit Office (2008: np), benefits retrieved from the adoption of PFI have included: certainty over construction costs, improved operational efficiency and higher quality and well maintained. The private party is able to operate within construction budgets, while the Special purpose vehicle is able to explore strategy to reduce waste and costs in the long-term, as they are responsible for long term running costs over the tenure of the PFI contract. It is further argued that quality of assets and use of assets is better managed when assets are handed over to the private operator during the tenure

of the PFI contract. This helps to increase lifespan of assets while improving the utility derived from the use of assets or service produced by assets.

Over the years, PPPs in the UK have spread to other sectors such as energy, healthcare, policy promotion and education with diverse models being adopted.

As at 2017, PPPs are said to have attracted £56 billion of private sector capital investment in over 700 UK infrastructure projects. Such investments have included housing roads, military equipment, prisons, accommodation, schools and hospitals (Gov.UK, 2017).

It is argued that PPPs transfer delivery, cost and performance risk to the private sector (Akintoye, 2002: 1-5).This protects the public sector from delays, cost overruns and poor performance (Akintoye, 2002: 1-5).

Private Finance 2 (PF2) replaced the Private Finance Initiative (PFI) as the government's preferred approach to public private partnerships in 2012. PF2 has provided £1 billion of capital investment in 46 schools and one hospital.

In policy promotion and campaigns, Macquaid et al. (2010: 27-34) argues that government has engaged the private sector to support dissemination of messages about policies to the wider masses of the UK population.

In UKs education sector, voucher systems, management contracts have been promoted. The early adoption of PPPs was motivated by access to finance and expertise that was characterized by the private sector. The need to tap into such opportunity led to the increased uptake of PPPs in the UK. In the UK, constrains in public finance are said to be one of the key primary motivators for adoption of PPPs (Ball, 2011: 6). Other motivators for PPP uptake in the UK are argued to include: the need to transfer risks to the private sector, improve transparency in government accounting and value for money search (Macquaid et al. (2010:27-34). Other reasons advanced included: the need to reduce tax burden on citizens, deregulation and economic structural changes, the need to reduce social security contributions by the public sector among other

reasons advanced by Macquaid et al. (2010:27-34). Ball (2011: 5) argues that in the UK, the largest numbers of projects are in the health and education areas, related to building new schools and hospitals (although the largest expenditure has been in transportation).

2.6.5 PPPs in Australia

In Australia, PPPs have and remained dominant force in the transport sector as a means of delivering public services since the 1980s (Duffield, 2001: 1-2). From what was considered the "first generation" of PPPs dominated by Build Own Operate (BOO) to what is termed as the "second generation" of PPPs where Build Own Operate Transfer (BOOT) dominates (Duffield,2005:1-2).

Conceptually, PPPs in Australia appear to be divided into so- called "Economic" and "Social" projects. According to the Inquiry into PPPs in New South Wales, economic projects are revenue generators, such as toll roads, and social projects, such as schools and hospitals, are budget funded. It is further argued that the uptake of PPPs in Australia has not been curtailed to Central Government administration. Growing interest and uptake of PPPs has also been noticed from non-government organizations, schools and universities (Duffield, 2005: 7). On the other hand, is argued also that in Australia, PPPs adoption arguably viewed as not to be evenly distributed as individual states design and implement separates guidelines for implementation of PPPs unlike in the UK where PPPs adoption is relatively and evenly distributed across due to central law and guidelines on PPPs adoption (Ball, 2011:5).

PPPs are ranked highly in economic performance in public service delivery performance measurement framework but the cost of financing PPPs remain a key obstacle to uptake of PPPs.

Hodge (2005: 311), denotes that the water sector has provided hosted PPPs as well. While on the other hand, education and healthcare sector have been characterized with some reasonable uptake of PPPs. It is argued that in the education sector, PPPs have enabled improvements in school building, architectural design, building services, user productivity, ownership costs, and detailed design. On the contrary, Ball (2011: 8) argues that in all areas, other than the building services area (where no significant

difference was found), but supports this view, traditional schools were rated as statistically superior at the 1 per cent significance level. PPPs have largely succeeded.

From the Australian experience, the success of PPPs is depend on availability of capital, clarity of stakeholder roles, speed to avoid cost overruns, competitive pricing, good documentation and contract management competencies (Duffield,2005:8-9: Jefferies, et al.2002:352-361). On the other hand, projects have met challenges ranging from: small volume of business making them attractive, lack of political commitment and delays in reaching financial closure (Duffield, 2005: 4-5). None the less, PPPs remain a critical part of economic transformation agenda in Australia (Duffield, 2005: 4-5: Ball 2011: 8)

The BRICS have been popular with PPPs (Hodge et al., 2018: 3-16). It is further advanced by Hodge et al (2018: 3-16) that largely PPPs have been implemented in the infrastructural sector. Within such sector, PPPs adoption has also been popular with hydropower sector. Hydropower is considered to have played an important role. PPPs are acknowledged to have been part of the force contributing to hydropower expansion in terms of generation and distribution in the BRICS (IHA, 2018:1-5).

2.6.6 PPPs in Brazil

Brazil is considered one of the countries in the developing world that provides leadership in uptake of PPPs in the hydropower sector. In emerging economies such as Russia, India, China and South Africa. Brazil has seen extended engagement of PPPs in the following areas: federal highways, works for the Football World Cup in 2014 and for the Olympic Games in 2016, mobility systems such as subway stations in the main Brazilian metropolises, and many others (Sampaio, 2018:11).

On the other hand, the energy sector has been key to attracting foreign investors Haddock (2003: 4). This started in the early 1990s. It is further argued that this period started the liberalization of the energy sector that was predominantly dominated by the state as a monopoly provider of electricity. Liberalization of the sector like elsewhere is considered to have started the journey of enhanced private sector participation in delivery of public services. In this period concessions to generate electricity were made open to the market to compete in order to sign up for concessions (Haddock (2003: 4).

While PPPs appear to have started much earlier, they were formally adopted in 2004 (Sampaio, 2018:2: Haddock: 2003: 4: Haddock2003: 4). The federal government, state and municipalities are allowed to develop their own policies for operationalization of the PPP Law (Haddock2003: 4). According to Sampaio (2018: 6) there are two types of PPPs in Brazil:

> "*There are two types of PPPs in Brazil: administrative and sponsored. In the administrative PPP the payment to the private sector comes only from the public sector. On the other hand, in the sponsored PPP, a certain part of the payment comes from users in addition to a part coming from the public sector*".

It is further argued that the criteria adopted to award concessions were purely based on cheap tariff. In essence, the bidder that provided the cheapest tariff was considered as the best-evaluated bidder. Bidders would incorporate the component to be paid to government in the tariffs proposed by bidders in the bidding process. Several successes in the sector were recorded. By bringing private players on board, the electricity deficits existed in early 2000s, were reduced and surplus electricity in 2007.To guarantee demand, government signed up Power Purchase Agreements (PPAs) and made several commitments to guarantee payments. Government would then produce power, lower tariffs as well as have private operators produce power at higher tariffs and compute an average tariff that would be extended to the electricity users. By 2007, the government is argued to have accumulated debt to tune of USD$1.4 billion that caused financial distress to not only the sector but the economy. PPPs in Brazil have provided benefits but several challenges have been met. This argument is in conformity with Duffield (2005: 8-9) who argues that while PPPs provide benefits, they are faced with some challenges at times. Accordingly, such challenges may vary across projects, sectors and industry (Duffield, 2005: 8-9).

Sampaio (2018: 10) notes that PPPs have delivered less on social and environmental aspects. Further argument is that PPPs marred by delays in execution, faced financial constraints and have been embodied with irregularities (Sampaio (2018:10). To manage PPPs in Brazil, several recommendations point to the need to incorporate sustainable development in the design, PPPs structured to include socio-economic benefits to

citizens, a robust monitoring system, incorporate risk management framework into PPP contracts and capacity building of managers. It is further asserted that strict regulation of private enterprises is important for PPPs to deliver benefits to the state.

On the contrary, Sampaio (2018:10) notes that the custodian of PPPs is usually the Ministry of Finance, Planning and Economic Development. In line with this view, 15 projects profiled by the Ministry did not indicate PPPs in hydropower power projects in Brazil. However, Santa Antonio Hydropower Dam manifests as a PPP that may not have been yet captured by the Ministry's database. This view is in earlier views of Haddock (2003:4) as discussed herein.

For the PPPs implemented, literature reveals that PPPs have come along with some benefits. While the sector started its new journey of liberalization, the pursuit of such journey was with some caution. This is evidenced from the share of public versus private generation of hydropower in the later years. According to Vasladi (2012: 11) by 2007, hydropower produced was generated by government owned utility firms and the private sector. In line with this view, it is further argued that the government was producing 80% while private operators were producing only 20% of the hydropower in Brazil (2012: 11).

According to IHA (2018:1-10), it is argued that in Brazil, a member of Latin American Countries (LACs) attracted more than 35% of the PPP hydropower investment in developing countries. Chile and Argentina followed with more than 5% of investment in hydropower. India accounted for more than 15% of investment and China for about 10%. Specific risks for hydropower investment arise for project financing, such as hydrological uncertainty, construction cost overruns and schedule slippage, and power demand uncertainty. Such concerns need to be mitigated to attract private finance.

2.6.7 PPPs in Russia

Like Australia, United Kingdom and South Africa, Mexico, Pakistan, Egypt, India, South Africa, Bulgaria, Thailand, Russia is considered to be among countries that have adopted PPPs (Payne, 2000: 1-16) in the last 2 to 3 decades. The adoption of PPPs is

considered attributable to the collapse of Communism that ushered in a new era of capitalism into the running of economic and social affairs of the country. It is believed that such era, championed the adoption of a hybrid model of public services delivery that was characterized by more engagement of the private players in coproduction and delivery of public services (Payne, 1-16). The success of PPPs was attributed to the ability of the private players to provide payments and develop good quality housing units starting from the year 1993. Trotsenko (2019:247-250) further argues that PPPs have been menat to mean a state-private partnership in delivery of public services in Russia. While it is ackanowldged that the laws in Russsia promote PPPs,there are legally promote as SPPs and not with conventional terminology such as PPPs and are comonly implemented by muniapalities and priavte palyers in delivery of public services (Ivanov,2019:1314-1318 & Trotsenko, 2019:247-250).

SPPs are arguablly to have been popular in sectors water and saniation, sport complexes, supply of heating systems,outdorr lighting facilities and transport proejcts such as highways with the M21 Volgard highway cooencting to the Ukranian border considered to be among the top notch proejcts implemenetd under SPPs framework. (Ivanov, 2019:1314-1318). This view is to some extent consitent with the view of Yamalchuck (2016:1-14) that indicates that sectors that have expereinced high upatke of SPPs have included transport and energy taking the higest share of SPPs investement in the country. While Inanov (2019:2019:1317) acknowledges avaialbility of SPPs expertise in the country, the PPP unit under Yamalchuck (2016:1-14) reveals that constraints to PPP implementation have included limited availability of SPPs expertise, unwillingness by state and municipalities to transfer roles to SPPs,high consultancy prices, lack of standardisation of feasibility study approaches , lack of well prepared PPP coupled with the lack of robust legal and regulatory framework..

To some extent SPPs are considered a success in Russia. The factors that have been advanced for this success include viability of capacity, transparency in publsihing SPP projects available in the country and putting in place of a central place for consultation on SPPs in the country (Ivanov,2019:1317).

2.6.8 PPPs in China

China is considered to be one of the leading countries in PPP adoption in Asia (Sampaio (2018: 1, IHA, 2018). The Efficiency Unit (2008) as cited by Wang et al. (2007:482) asserts that PPPs are defined as arrangements where public and private sectors both bring complementary skills to a project, with varying levels of involvement and responsibility, for the purpose of proving public services or projects. Sachs et al. (2007: 128) argues that the increased adoption of PPP is attributed to growth of industrialization and growth of the Chinese economy. The escalation in adoption of PPPs is deemed to have escalated by the bid to host Olympic Games in 2008 (Sachs et al., 2007: 128).

On the other hand, it is argued that the increased demand for private participation in China's public service delivery is traceable from early 2000s but escalated from the year 2003 when the Government of China with the promulgation of Regulations by the Beijing Municipal Governments in 2003 and PPP Administrative Rules for PPP Urban Public Utilities Projects by the Ministry of Construction in 2004 (Sachs et al., 2007: 128). It is further argued that various projects and sectors have evidenced more PPP prevalence than others.

PPP popularity is said to have been popular in construction of stadiums, subways and sporting venues (Sachs et al., 2007: 128). On the other hand, Wang et al, (2009:1-4) & Wang et al. (2000:250) argues that PPPs have been popular in China not necessarily because of the number of PPPs but rather the value of PPP citing China's Laibain B Power project that is considered to be the first BOT power dam PPP project implemented in China. The most popular PPP model implemented in China is argued to have been the Build Operate Transfer (BOT), Wang et al.(2009:1-4) and Wang et al. (2000:250).Accordingly, Wang (2000: 130) asserts that PPP adoption has been motivated by debt crisis suffered by China from 1998 to 2000. Like elsewhere China has faced some challenges in adoption of PPPs. According to Wang (2000: 130) the challenges that have been faced have included: verbal promises that have resulted into

unmet expectations by private investors, corruption in devolved local administration. While these have manifested as popular challenges, other challenges exist. The lack of a national law on PPPs and reliance on lower level administration rules on PPPs has created variances in PPP implementation, which appears to be affecting sustainability of policy (Wang et al., 2007: 130). PPP model (s) vary from project to project alongside standard bidding documents. This is critical for long-term PPP investments.

According to Wang et al., (2007:131) limited PPP experience among public officers and lack of mature legal and regulatory framework coupled with the challenge of credit worthiness of Chinese local government as one of the critical risks (Wang et al,.2000:35). It is also argued that macroeconomic risk such as interest rate and inflation continue to manifest as impediments in the Chinese context of PPP implementation (Wang et al, .2007: 484). Such risk is also noted to exist in PPP contexts elsewhere (Li et al, 2003:31-57: Hard castle, et al, .2005: 459-471: Hard Castle, et al., 2003:31-57).

2.6.9 PPPs in India and Pakistan

India and Pakistan, have been acknowledged as countries that have joined the league of higher levels of PPP adoption (Telang and Katumbale, 2014: 11). Initially PPPs were adopted especially in India to reduce infrastructural deficits (Telang and Katumbale, 2014, 11-12). According to Sampaio, (2018: 11), India has adopted PPPs in the hydropower sector and other sectors. Pratap et al. (2017: 219-220) share this view. In India rising populations has created fast tracked need for electricity additions onto the national grid and pressure on already constrained national budgets (Ranganathan, 2005:3, Ruet, 2005:1-4). Ranganathan, 2005:3, Ruet, 2005:1-4) assert that the adoption of PPPs in the hydropower sector has been associated with the need to reduce technical and non-technical losses, and increasing plant load factors yield far higher returns than generation investment, have been key factors that have driven changes in the electricity sector.

The most common PPP model adopted in the Hydropower generation has been the Build Own Operate Transfer (Pratap et al. 2018: 220-260: Ahmed et al, .2016: 216-

225). Telang, 2014: echoes this similar view 18 with some variance is assertion. Beyond BOO, Telang et al (2014: 18) argues that the BOOT model has been popular too in the hydropower sector Under this model the private sector party provides finance to build the infrastructure owns the infrastructure and operates and turns back ownership and management of power dam to the public party usually between 20-30years (Grag, 2002: 3: Ahmed et al,.2016: 216-225). On the other hand, Newberry (2005:2) argues that India like other South Asian countries faced tremendous electricity challenges electricity as state owned enterprises. The engagement of private providers commenced with privatization of state owned distribution enterprise under concession contracts. Such concessions required that the private party distribute electricity and charge tariffs directly to the end consumer of electricity. Currency fluctuations have led to instability of tariffs due to foreign direct investment. It is further argued that the short repayment period for debt finance in India's Hydro electricity sector in the initial stages of foreign direct investment has been a key problem. The success of PPPs is built on existence of investor confidence. Confidence is built on the ability to recoup investment in the sector. However, in India like in any other country, electricity is supplied to voting population that increasingly reject any upward variation in tariffs. Newberry (2002: 2-6) notes there will always be greater returns if the private sector is engaged in distribution rather than generation of electricity. Fraser (2005: 1), also suggest that the success of PPP concessions depends on how well persons are selected to engage governance structures.

PPPs in South Asia and India started the 1990s with growing disillusionment on the existing inefficient and bankrupt state-owned vertically integrated electricity supply industry and strong internal and external pressure to reform the sector (Ullah, 2015:1-10).Government started to encourage private participation in service delivery to overcome the lack of finance for the investment needed to address shortages and power cuts. The simplest route appeared to allow IPPs to sell power under Power Purchase Agreements (PPAs) to the largely unreformed State Electricity Boards (SEBs). Buying increasing amounts of higher cost power when these SEBs could not even cover the cost of underpriced wholesale electricity from state-owned generators was a recipe for financial distress and conflict. Reforming the SEBs, though unbundling, creating

commercial disciplines in retailing electricity, and subjecting the sector to multi-annual regulation insulated from clientele political pressures, is therefore an essential first step, although one that was bound to be keenly resisted by current beneficiaries.

It is argued that failure by the state to manage production and distribution of electricity led to the privatization of electricity supply chain (Ranganathan, 2005:3, Ruet, 2005:1-4). Commercially viable private owned companies are argued to have successfully operated under multi- annual cost reflective tariffs, and the way is open for more sustainable private investment in generation. In India the central Government appears to have relatively few effective levers with which to reform the SEBs, although the Electricity Act 2003 has good intentions, particularly in requiring metering, multi-annual regulation and requiring regulated third party access to large customers through the national transmission grid. Elsewhere central governments may have more control and may even use that wisely to press for effective reform, although progress appears to be slower than expected. (Ranganathan, 2005:3, Ruet, 2005:1-4).

2.7 PPPs in Sub-Saharan and selected areas in Africa

Sub-Saharan Africa has embraced PPPs but appears to be lagging behind other parts of the world (Yescombe 2018:1). PPPs have been involved in designing, construction, financing and maintaining public infrastructure across various sectors (Yescombe, 2018:1). The journey of PPP adoption is traceable in this decade starting with the year 2010.

2.7.1 PPPs in South Africa

The post-apartheid era in South Africa starting in the year 1994 ushered in increased demand for social services and infrastructure. This trend is argued to have been motivated by increased demand to social services created by the need to deliver public services to everyone. Previously, demand for public services was low as varying and limited privileges existed for the black people. The post-apartheid era that commenced in 1994, granted privileges to the blacks in addition to the white people. This resulted into an upward shift in demand for public services provision. This situation exposed the African National Congress (ANC) government to financial distress. To manage such

constraints, the government of South Africa adopted PPPs. In South Africa legal and regulatory framework, a PPP is defined as

> '*a contract between government institution and private party. Private party performs an institutional function and/or uses state property in terms of output specifications. There is substantial project risk (financial, technical, and operational) transferred to the private party. The Private party benefits through: unitary payments from government budget and/or user fees'*

According to Gqoli (2005:8) a project to be considered a PPP it must pass three tests, provide affordability, deliver value for money and enhance appropriate risk transfer. Following the passing of the amendment of Treasury Regulation No.16 of the Financial Management Act (1999), PPP adoption has increased. To acquire PPPs a systematic process is followed. According to Gqoli (2005:17), the process starts from inception, feasibility study, procurement, PPP development, delivery and exit of PPPs. PPPs must incorporate strategy that highlighted how they will contribute to supporting the Broad Based Black Economic Empowerment (BBBEE) programme. According to Gqoli (2005:17) the issues that should be considered include ensuring equity in remuneration and board composition, management structure through to subcontracting and must manifest how the PPP will deliver local socio-economic effect on the economy of South Africa. While some PPPs have succeeded, several challenges have existed. For projects that have succeeded, success has been attributed to: a clear PPP law, political commitment, competitive private sector and extensive communication, an independent judiciary, process, standard terms, PPP Unit in strong National Treasury, early planning and good projects, training, communication, Black Economic Empowerment impact, strong financial markets, competitive private sector and extensive communication. Gqoli (2005:35-36). Yescombe (2017: 4749) suggest that South Africa has faced several challenges in implementation of PPPs. These have included: deal flow public sector limits of PP capacity, Municipal PPPs have been politicized, Black economic empowerment implementation, monitoring and evaluation being limited. Politicizing PPPs remains a challenge not only in South Africa but in other countries (Simemiatcki and Farooqi, 2012:287: Flinders, 2005:215-239, Kabanda, 2014: 1-4, Scalar, 2015:1-15).

Table 2.2: Popular PPPs in Sub-Saharan Africa

Project Name	Country Name	Sector	Source
Bujagali Hydro Power dam	Uganda	Hydropower generation	Yescombe(2018:2) Kabanda(2014:3-5)
Entebbe Express By Pass Road	Uganda	Road Tool Management	UNRA(2018:1)
Busembatia Water	Uganda	Piped water project	World Bank(2006:1)
Cen power	Ghana	Power generation	Yescombe(2018:2)
DTI Campus	South Africa	Government accommodation	Yescombe(2018:2)
KivuWatt	Rwanda	Power generation	Yescombe(2018:2)
Lekki Expressway Tool Road	Nigeria	Toll road	Yescombe(2018:2)
Mbombela Water	South Africa	Water and sewage distribution	Yescombe(2018:2)
Platinum Highway	South Africa	Toll road	Yescombe(2018:2)
Rift Valley Railways	Kenya/Uganda	Railway	Yescombe(2018:2)
Healthcare (hospital management)	Burundi	Healthcare (hospital management)	
King Faisal Hospital	Rwanda	Healthcare (hospital management)	Government of Rwanda

Universal Secondary Education(USE)	Uganda	Universal Secondary Education project	Twinomuhwezi (2018:np)
Songas	Tanzania	Power generation	Yescombe(2018:2)
Tšepong	Lesotho	Social infrastructure (hospital)	Yescombe(2018:2)

Source: **Principal Investigator (2018)**

In table 2.2, it can be depicted that there is evidence of PPP uptake across Sub Saharan Africa. From a review of literature, it can be deduced that PPPs have been implemented across various sectors. This view is consistent with Osborne (2002:1), Hodge and Greve (2007, 545-558), Fabre and Straub (2019:1-84) who argue that PPPs have been adopted in the public administration as a means of service delivery across various sectors and are gaining momentum. From the synthesis above in table 2.2, it can be further deducted that while popularity of PPPs was in the UK and was synonymous with infrastructural projects, in sub-Saharan Africa, PPPs have been and continue to be popular in not only infrastructure, but other sectors such as education, healthcare, water, telecommunications, sanitation, and water (Fabre and Straub, 2019:1-84).

2.7.2 Drivers of PPPs in Sub-Saharan Africa

Popularity of PPPs adoption has been evidenced in transport infrastructure such as toll roads, hydropower generation, water utilities, social infrastructure such as building and management of schools and hospitals, and government accommodation. While various reasons are advanced for adoption of PPPs in hydropower sector, it is also argued that failure by the state to manage production and distribution of electricity has led to privatization of the electricity supply chain (Ranganathan, 2005:3, Ruet, 2005:1-4). Commercially viable private owned companies are argued to have successfully operated under multi- annual cost reflective tariffs, and the way is open for more sustainable private investment in generation. In India the central Government appears to have relatively few effective levers with which to reform the SEBs, although the Electricity Act 2003 has good intentions, particularly in requiring metering, multi-annual regulation and

requiring regulated third party access to large customers through the national transmission grid. Elsewhere central governments may have more control and even use such justification to press for effective reform, although progress appears to be slower than expected. (Ranganathan, 2005:3, Ruet, 2005:1-4). Fernandes et al. (2018) and Yescombe (2017:1-12) argue that PPPs on the other hand have been adopted as a risk hedging tool, enabling governments to transfer shed off risk associated with high value and complex projects. HPPs are one of such projects that are associated with USD millions and billions worth of investment and come with complexities at feasibility and implementation.

In the United Kingdom, the Private Finance Initiative (PFI) has been adopted in implementation of infrastructural projects. Under such PPP initiative the private sector party provides finance to support infrastructural projects required by the contracting public party such as municipality, city or local council. This has been deemed due to the need to increase the private sector engagement in provision of public infrastructure, the need to enhance accountability and reduce public debt that is incurred when government borrow to fund public infrastructural projects like roads, airports, dams among other similar projects.

In Ghana, government has adopted PPPs to close infrastructural gaps (Robert, Dansoh, and Ofori-Karugu, 2014:227-238). It is further argued that PPPs in the developed and developing world have been adopted as part of national policy (Osei-Kyei et al.2015). While various reasons are attributed to such trend, increased PPP uptake has to some extent been associated with the need to tap into the vast expertise of the private sector, secure access to capital and increase national infrastructure (Lam, Chan and Cheung,2010:484-494: Grimsey and Lewis, 2002: Grimsey and Lewis,2005:345-378).

In the academic literature, PPPs are seen both as a governance tool and a political phenomenon (Hodge and Greve, 2007).

Many motivations have appeared over time and have primarily emphasized the advantages of incorporating private sector skills, e.g. equitable risk sharing (i.e. reduced

public sector risk), better on-time and on-budget delivery, and improved service delivery (Greve and Hodge 2013). However, empirical research has questioned whether the actual merits of PPP correspond with the promises made. PPP is inconstant in achieving value for money and often makes an insufficient contribution to innovation, flexibility, and competition (Akintoye et al. 2003). Moreover, PPP involves high financing and transaction costs, and demanding negotiations (Yescombe 2007, Akintoye and Beck 2009).

On the other hand, PPPs have been adopted for various reasons: expand infrastructure, healthcare provision, reduce costs while attracting efficiency gains and accessing both finance and technology. (Yescombe, 2018:2-5: Njuguna, 2018:33-42). Marson et al (2018: 302-320) argues that water scarcity has been an attractor of PPPs in the water sector. Since scarcity of water has been associated with elimination of poverty, hunger and sickness, countries have focused on identifying and implementing PPPs for improving water in countries such as Malawi, Rwanda and Uganda. (Marson et al,.2018: 302-320).

Expanding healthcare has been considered one of the key drivers for PPP adoption in sub-Saharan Africa. Countries such as Lesotho (Yescombe, 2018:2-5 and Widdus et al.2011: 713-720) Rwanda and Uganda have adopted PPPs in either development of management of social infrastructure and in relation to managing constraints across sectors (Kabanda, 2014:2-5).

Across countries, PPPs tend to be more common in countries whose governments suffer from heavy debt burdens, where aggregate demand is sizable, and where markets are large enough to allow for cost recovery (Kabanda, 2014:2-5). Macroeconomic stability is essential for PPPs because partnerships are more common in countries with low inflation (Kabanda, 2014:2-5).

According to Kabanda (2014:1-5) institutional quality is crucial in attracting PPPs investments: This view is arrived at from a study where it was found that a larger number of PPP projects are found in countries with less corruption and effective rule of law. Moreover, PPPs are found to be more prevalent in countries with previous PPP

experiences. This view is consistent with rankings of PPP uptake in Europe by Athanias et al, 2019:193) where countries with sound institutional capacities such as UK, Germany, France among others dominate in uptake of PPPs.

Other reasons advanced for increased PPP uptake have been the need to increase electricity generation and distribution in countries such as Uganda (Yescombe, 2018: 3 and Kabanda, 2014: 1-14). Yescombe (2018: 3) argues that countries such as Uganda, Tanzania and Rwanda have adopted PPPs to increase electricity generation. In Lesotho and South Africa, PPPs have dominated in the social infrastructure sector and transport infrastructure (Yescombe, 2018: 3).

Access to finance amidst financial constraints have forced many governments in the Sub-Saharan Africa (SSA) to adopt PPPs across various sectors (Yescombe, 2018:3: Kabanda, 2014:3, Yehoue, 2006:6-8, Osei-Kyei, et al.2018:403-414).

The reasons for PPP adoption have been varied across sectors and countries but what remains is that PPPs in Sub-Saharan African, have been adopted due to constraints in public service provision unlike in other parts of the world like UK where PFI is argued not to have been implemented due to constraints.

In Sub-Saharan Africa's Hydropower sector, PPPs have been implemented to improve access to electricity. According to Adu et al (2018:1-3) the adoption of PPPs have been motivated by short supply of electricity. Despite the scarcity, it is argued that 90% of the potential for hydropower generation in Africa remains untapped (Adu et al, 2018:3).

According to Kabanda (2014: 1-14) notes that in Uganda a Build Own Operate Transfer (BOOT) PPP model has been the most popular PPP in Uganda. The model has been applied in building, owning, operating and later transfer the operation of a 250mw hydropower dam at Bujagali, located River Nile in the Eastern part of Uganda. Under this concession it is expected that Bujagali Energy Limited (BEL) that is owning and operating the dam for initially 30 years but now 33 years at Bujagali Dam has been adopted and will transfer back the operation and maintenance of the dam to

government. Under this project, Bujagali Energy Limited (BEL) a special purpose vehicle (spv), a private limited formed out of a consortium of partners to implement the dam project. Under the concession, a power purchase agreement (PPA) that provides guaranteed demand for the electricity produced at the dam was signed by BEL and the government of Uganda. From its inception, Bujagali project faced challenges. The critiques of the HPP argue that time the dam was idealized through to implementation, the dam was critiqued for failing to meet requirements for social impact assessments, land compensation disputes, communication, climate (Luwa et al.2007:44). The dam has also been critiqued for failing to tame the electricity power tariff that is considered to have remained high despite the promise that the dam would produce electricity and ultimately the electricity delivered cost in form of tariffs would drop(HE, the President of Republic of Uganda,2016:np). Despite the challenges faced, the Bujagali Hydropower Dam is acknowledged for having contributed 250MW to the Uganda's installed capacity, improved power availability, reliability and potential to contributing to at least 50% of Uganda's power demand (Yescombe, 2018:19). While reliability has improved, availability of power generated is argued to be in excess by 99% of Uganda electricity needs (Yescombe, 2018:19).

In Ghana, the most popular PPP has been the CenPower Power Dam implemented under Design Build Finance and Operate (DFBO) 20 years' concession. The concession was conceptualized and implemented in reaction to electricity deficits that has been common among African countries for the last 2 to 3 decades. This has come amidst this shortage as domestic consumption increased with new consumers paying below real cost. According to Yescombe, 2018:31) by selling more power below real cost to consumers, the national electricity distribution company Electricity Corporation of Ghana (ECG) ended up with financial constraints. Amidst such troubles, Retlub a company registered in Ghana submitted an unsolicited proposal to the Ghanaian government to construct a 340MW power dam. It is argued that the proposal was based on Design, Build Finance and Operate (DFBO) 20-year arrangement. In this PPP, the private operator (CenPower) was provided demand guarantee by Government of Ghana (GoG) to buy off initially 60% of power generated and the balance sold to mining companies. However, when mining firms decided not to buy the power, GoG opted to buy off the

40% remaining proportion of power produced. While EGC bought the power, Yescombe (2018: 35) argues that low power tariffs, power thefts and non-payment by government entities that were faced. It is further argued that a competitive sector requires that the guarantor of demand is financially stable. Yescombe (2018:35) argues that despite transparency and accountability test being met by ECG, results on financial performance indicated the state distribution firm was loss making exposing the private operator to credit risk that prompted lenders to negotiate with GoG to commit to taking on obligations to pay should the ECG fail to pay. The Ghanaian hydropower PPP experience provides key lessons worth noting. These include: that state owned enterprise may be financial constraints to deliver obligations under PPAs and governments should commit to take on liabilities should the state owned PPA signatory fail to pay. On the other hand, private operators should prepare cash flow buffers as cushions of comfort against delayed payments by state electricity agencies. It further important to note that while SOEs are willing to grant approvals for execution of PPPs, financial closure may be delayed by Parliamentary approval impacting on rate of return and payback period.

According to Yescombe (2018: 36-38) a legal and regulatory framework to guide procurement and PPP implementation is important. Capacity building is important in areas of project finance, and negotiation of PPAs. By developing capacity, PPPs are likely to succeed as they will be win-win contracts and shared risk. While unsolicited bids provide opportunities for innovation, and that private operators are in charge of project development costs, Yescombe (2018:35) notes that they risk political risk if change of government occurs and perhaps need to incorporate transparency. Financial closure will always be achieved if operation and maintenance (O & M) and tiers are cleared by financiers and guarantors including insurance cover that is acquired. Interest rate swaps are recommended while currency risk need to be adjusted based on following months' bills. Construction risk is likely to result when the implementing EPC contract under PPP. This risk results due to delays in completion of project or cost overruns and quality defects. While penalties in practice have been implemented in Ghanaian projects and elsewhere, Yescombe (2018: 38) reveals that penalties and bonding requirements only increase costs that results into the need for the operator

charge higher tariffs. Instead Yescombe (2018:38) argues that a clause should be inserted in the contract indicating that should the operator delay to deliver the project on time, the contracting authority would be forced to procure electricity from lese where and should the cost be higher than the off take cost in the PPA agreement, the private party would cover the marginal cost of sourcing power from other sources other than the source in the PPA. This contracting strategy was adopted at Kivu Watt dam project in the Republic of Rwanda (Yescombe, 2018: 38).

On the other hand, Tanzania has seen some reforms on private participation in delivery of public service. While such reforms have cut across all sectors, the electricity sector too has been affected. Underlying reforms has been the need to improve efficiency and effectiveness in delivery of public services. In the electricity sector, the journey to improve competiveness in Tanzania can be traced from as far as the 1990s. While the state owned vertically integrated utility firm Tanzania Electric Supply Company (TANESCO) performed well in the 1960s to 1970s, though performance was poor in the 1980s to 1990s. This culminated into a national energy policy in 1992 that encouraged private participation in the electricity sector. It is argued that in 1997, TANESCO was put up for privatization and formally low tariffs were doubled and top management contracting changed to management contract. The contract commenced with a tenure of 2 years starting with 2001 (Clark et al., 2005: Kapika and Eberhard, 2013: 1-11). This trend was motivated by the World Bank (Eberhard, 2017:1-11). Eberhard (2017:5-9) further argues that management controls improved leading into an improvement in the financial position due to better collection but deficiencies remained in the quality and reliability of supply.

It is further argued that with new electricity connections, a measure of performance in the electricity supply chain increased but insignificantly. This was attributed primarily due to underinvestment (Ghanadan and Eberhard, 2007:13). Such situation ushered in a new era that involved PPPs but with slowed uptake. Songas Project is one of the popular projects that has been implemented under PPP. The gas to electricity project was implemented under PPP for reasons similar to those of other project implemented under PPP. Yescombe (2018:122) notes that lack of public expertise, insufficient

management capacity, the need to transfer risk to the private party at an incentive, instilling investor confidence and the need to development a commercial gas market were the drivers for such PPP in Tanzania. The type of PPP that has reigned with popular in the Tanzania's electricity supply chain has been the Design Finance, Build and Operate (DFBO), Yescombe (2018: 123). Several lessons are learnt from implementation of PPPs in Tanzania across sectors.

For instance, where government has provided financing from the national PPP investment Fund, when the contracting authority delays or fails to pay, loans payable by the private operators should be offset directly by the amount in areas owed to the private operator. The other option is where the contracting authority is an equity investor in the SPV then amount owed should be subordinated by an equity swap. It is argued that more lessons can be learnt not only from these electricity projects but another similar PPP projects in the energy sector in Tanzania. Other lessons learnt include: monitoring of the financial status of the private party and how it is influenced by stakeholders, market conditions and obligations from home country is critical. Yescombe (2018:125) argues that after financial closure of Songas, the spv had to sale of its assets in the USA due to collapse of Enron and the financial market collapse that followed thereafter in the United States of America.

In Rwanda, the 1994 post genocide period has evidenced strides in economic growth and development. Constrained by finance and the need to scale up public service provision, the government of Rwanda embraced PPPs. From 1998,PPPs have been popular in the water sector (Prevost,Mwanafunzi and Jain, 2010:1-5),hydropower and transport (Nuwagaba, 2013:356-359). It is also argued that PPPs have been adopted to improve efficiency of public service delivery with the Rwanda Development Board acting as the coordinating agency for promotion of PPPs (Nuwagaba, 2013:358). With transport being the late adopter, the sector is gaining momentum with PPP uptake. A PPP has been recently signed with Mota Engil, a Portuguese Construction company to construct Bugesera International Airport under at Build Own Operate Transfer (BOOT) for 25 years with possible extension of 15 years. The cost of construction of the airport is USD820million. According to Nuwagaba (2013:359) the BOOT model has been the

most popular model implemented in Rwanda though other views promote DBFO as the most preferred PPP model in Rwanda.

In the hydro electricity sector, Rwanda has continued to attract PPPs.Notable PPPs in this sector include:

Table 2.3: Key PPP Projects in Rwanda's Electricity Sector

Project Name	Sector	Year of Financial Closure	Investment (USD$)	Type of PPP
Kivu watt	Electricity	2011	147m	DFBO
Kibuye Power 1	Electricity	2015	76m	DFBO
Musanze Hydropower Plant	Electricity	2017	17m	DFBO
Aggreko 10MW Power Station	Electricity	2005	1.58m	DFBO

Source: World Bank Knowledge Hub accessed on 29th September 2018.

From Table 2.3 above, it can be deduced that the most popular mode for PPP adoption has been the Design Build Finance and Operate (DFBO) model in Rwanda.

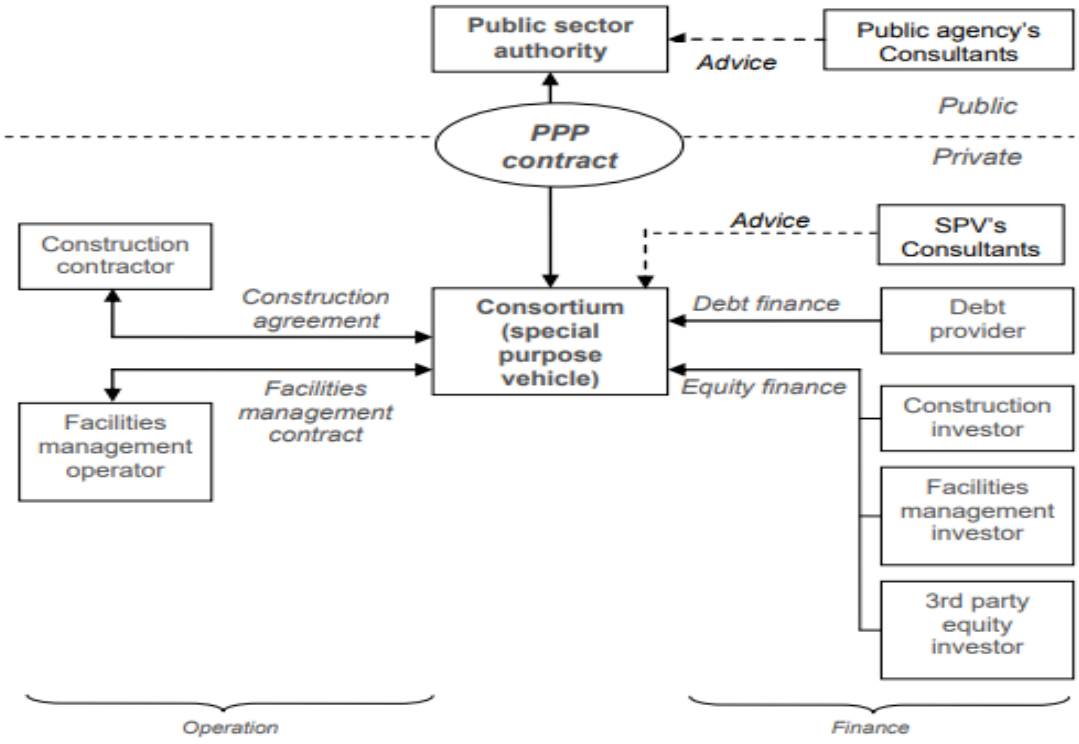

Figure 2.2: Typical PPP (for DFBO model) project structure

Source: Ministry of Finance, Singapore (2012:8)

Figure 2.2, provides a diagrammatic illustration of the operation of a Design Build Finance and Operate PPP. Under such PPP arrangement, special purpose vehicle provide the design, and finance for the project. The spv provides construction and operates the dam for the agreed period of time. Both parties usually have consultants that advise on matters associated with implementing the PPP. During operation of the dam, the private party has a choice to add on their own or subtract maintenance to another Operate and Maintain (O& M) specialist contractor. There exists consistency in literature with authors on what defines a DFBO PPP. The common grounds against which the PPP is defined a Private Finance Initiative (PFI) is whereby the private player undertakes to design construct, finance, own and operate a facility for a given period of time (Shaw, 2018:64). It is also argued that the private party in most cases will not get capital at lower rates than public authorities. In essence, it is an expensive model. This disadvantages the DFBO as model competing with PPP market. However, it is noted that while this may make fees higher under PPP, such fees can be reduced if several factors are taken into consideration. According to Shaw (2018:65-68) these will include:

> "greater private sector access to relevant expertise and experience, the incentive to minimise costs imposed by operating within a commercial environment and significant performance improvement through private sector innovation and management skills".

While in some PPP Acts and Policies, DFBO is accommodated it is argued that due to its conventionality, the model has been implemented by various governments across the world. Yescombe (2018:54) argues that projects such as KivuWatt and Aggreko Hydropower stations were procured under public procurement legal and regulatory framework in the absence of PPP Act. In the KivuWatt Power project it is noted that while PPPs are expected to enjoy good working relationships, the initial private party contracted delayed delivery by 6 (six) months and submitted a claim for initial development costs worth $3million.This led to contract termination and sourcing of another private party that was signed up in 2011 for the project. Yescombe (2018: 56-

57) argues that PPP project requires government support. Highlighting the Kivu Watt project, the initial Engineering, Procurement and Construction (EPC) contract was terminated on basis of poor workmanship that resulted into time overruns of up to 3 years and costs overruns by $60million by the private operator, Contour Global. This was done not by increasing debt by the private operator but rescinding part of its equity to secure funding to complete the project and service the debt held since the project delayed and could not generate cash flows to service the debt repayment in time (Yescombe, 2018:57).

2.8 PPPs Models in the Global Hydroelectricity Energy Subsector

In tandem with global population growth rates, demand for electricity has been growing on annual basis. Vingliasindi (2013: 13) argues global demand for electricity has been driven by demand for energy from emerging economies such as China, increase in competition for natural energy resources, rising oil and gas prices motivated by political uprisings in North Africa and the insurgencies Middle East.

It is further argued that sustainability concerns over the use of fossil energy and its security coupled with the commencement implementation of the Kyoto Protocol around 2005 by most countries across the world. In Africa, pursuit the industrialization agenda and development in infrastructure such as electric trains have escalated the need for higher hydroelectricity. In India rising populations has created fast tracked need for electricity additions onto the national grid and pressure on already constrained national budgets.

In India and Pakistan, it is argued that, reducing losses, both non-technical and technical, and increasing plant load factors yield far higher returns than generation investment have been key factors that have driven changes in the electricity sector.

The most common PPP model adopted in the Hydro Power generation has been the Build Own Operate transfer (BOOT). Under this model the private sector party provides finance to build the infrastructure, owns the infrastructure and operates and turns back ownership and management of power dam to the public party usually between 20-

30years (Grag, 2002:3). On the other hand, Newberry (2005:2) argues that India managing electricity supply chain by State Owned Enterprises (SOEs) has been challenging. The inefficiencies of SOEs have resulted into the engagement of private providers (Newberry, 2005:2). This commenced with privatization of state owned distribution enterprise under concession contracts. Such concessions require that the private party distribute electricity and charge tariffs directly to the end consumer of electricity. Currency fluctuations have led to instability of tariffs due to foreign direct investment. It is further argued that the short repayment period for debt finance in India's Hydro electricity sector in the initial stages of foreign direct investment has been a key problem. The success of PPPs is built on existence of investor confidence. Confidence is built on the ability to recoup investment in the sector. However, in India like in any other country, electricity is supplied to voting population that increasingly rejects any upward variation in tariffs. Newberry (2002:1-5) notes there will always be greater returns if the private sector is engaged in distribution rather than generation of electricity. Fraser (2005:1-8), also suggests that the success of PPP concessions depends on how well persons are selected to engage governance structures.

South Asia started the 1990s with growing disillusionment with the existing inefficient and bankrupt state-owned vertically integrated electricity supply industry and strong internal and external pressure to reform the sector. The incompletely understood diagnosis was to encourage private investment to overcome the lack of finance for the investment needed to address shortages and power cuts. The simplest route appeared to be to allowing IPPs to sell power under Power Purchase Agreements (PPAs) to the largely unreformed State Electricity Boards (SEBs). Buying increasing amounts of higher cost power when these SEBs could not even cover the cost of underpriced wholesale electricity from state-owned generators became a recipe for financial distress and conflict. Reforming the SEBs, though unbundling, creating commercial disciplines in retailing electricity, and subjecting the sector to multi-annual regulation insulated from clientele political pressures, is therefore an essential first step, although one that was bound to be keenly resisted by current beneficiaries.

SUBSECTION 2

2.9 Uganda's Experience in Implementing Public Private Partnerships (PPPs) in Hydropower Sub -Sector

2.9.1 Definition of PPPs –International and Uganda's Perspective

There are extensive debates about the concept of PPPs. The debate is whether PPP needs a definition and what constitute a PPP. Some argue that PPP needs to be redefined. For example, Hodge and Greve (2007: 545) state that 'there is a need to re-examine the different meanings and definitions given to PPP to find out whether the concept is worth keeping and using for empirical studies', since a several number of definition of PPPs are to be found.

Public-private partnerships (PPPs), loosely defined as cooperative institutional arrangements between public and private sector actors, have gained wide interest around the world. But few people agree on what a PPP is. Others view PPPs as a new governance tool that will replace the traditional method of contracting for public services through competitive tendering (Riess, 2005:11). On the other hand (Osborne, 2002:1) asserts that PPPs as a new expression in the language of public management, one intended to include older, established procedures of involvement of private organizations in the delivery of public services (Linder, 1999:1-5).

From a scholarly perspective, PPPs are defined by Ham and Koppenjan (2001:2) as a form of cooperation of some sort of durability between public and private actors in which they jointly develop products and services, share risks, costs and resources connected to the products/services through an institutional arrangement. Akintoye, Beck and Hard castle (2003: 1-2) define a PPP as a long-term contractual arrangement between a public-sector agency and a private-sector concern whereby resources and risks are shared for the purpose of developing a public facility. This view is shared in by Akintoye, Akintola, Hard castle, Beck, Chinyio and Darinka Asenova (2003:2).

In the financial sector, PPPs refer to arrangements where the private sector supplies infrastructure, assets and services that traditionally have been provided by the government (International Monetary Fund, 2004:1). The European Investment Bank

(2008:2) on the other hand defines PPPs as relationships formed between the private sector and public bodies often with the aim of introducing private sector resources and/or expertise in order to help provide and deliver public sector assets and services.

On the other hand, economic blocs too have over the years advanced several definitions of PPPs. In the European Union, PPPs refer to forms of co-operation between public authorities and the world of business which aim to ensure the funding, construction, renovation, management and maintenance of an infrastructure for the provision of a service (European Commission, 2012:7). PPPs are also defined as an agreement between the government and one or more private partners (which may include the operators and the financers), according to which the private partners deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partners (Organization for Economic Development, 2013:5). PPP refers to a mechanism which involves the public and private sectors working in co-operation to provide infrastructure and services (African Development Bank, 2017:2). The bank argues that PPPs aim at fundamentally bringing together the expertise of the private and public sectors and allowing each sector to do what it does best in order to deliver projects and services in the most efficient manner.

At country level, PPPs in Uganda are defined as commercial transactions between contracting authority and a private party where the private party performs a function of the contracting authority for a specified period (Republic Of Uganda PPP Act, 2015:10).
In the UK, PPPs are defined as an approach to engage the private sector in the design, build, finance and operation of public infrastructure, with the aim of delivering good quality and well maintained assets that provide value for money for the taxpayer (Home Treasury, 2015:2).

Despite the luxury of definitions of PPPs, most definitions point to semantics: collaborative relative relations, partnership between public and private sector, delivery of public goods and services, risk transfer from public to private sector with a promise of

incentives such as profit over a period of time (Khanom, 2010:1-4). This luxury creates contempt and is likely to result into conceptual euphoria and requires that defining PPPs with universality. Arriving at a universal definition of PPPs is no longer distanced as universal features in defining PPP are known. For instance, these include: collaborative e arrangements, private and public sector, risk transfer, deliver of public goods and services over a period of time (Khanom, 2010:1-4).

The collaborative feature is supported by Broadbent and Leaughlin (2003: 332), Carr (1998: 1) and Bovaird (2004: 199). The partnership feature is supported by Brinkerhoff et al. (2011: 11), OECD (2013:1), Ham and Koppenjan (2001: 2), Akintoye (2005: 2). Risk transfer feature is shared in by Kleijn and Teismans (2004, 147), Hodge and Greve (2005: 132). The profit and incentive feature is shared in by Stern and Harding (2002:95): Akintoye (2005: 2), delivery of public goods and services Snellen (1990:35), Akintoye (2005: 2): Hodge and Greve (2005: 132), Hodge and Greve (2008:2), Sellgren (1990: 57), Brinkerhoff et al., (2011: 9). The period of time usually 10 to 30 years notion is also widely shared by Ndandiko (2006: 3), Nasasira, Basheka and Oluka (2013: 1).

Such views bring to agreement that PPPs should be universally defined as a collaborative risks transfer arrangement between the public and private sector for delivery of public goods and services over a given period of time usually from 5 to 30 years at an incentive to the private sector parties.

2.9.2 Historical Perspective and Trends in Adoption of PPPs in the Hydro Electricity Energy Subsector.

In Uganda, the history of hydropower generation and distribution is traced and tracked from the colonial period.

Uganda has been one of the countries in East African that have embraced private sector in provision as a partner in delivery of public goods and services in the early 1990s. Osborne, (2002:2). The call for adoption of the private sector in delivery of public services, has been involuntarily and in some cases by accident. This view is consistent with Ndandiko (2006:3) that points reduced financial releases from the central purse as

one of the reasons for increased engagement of private sector in the delivery of public investments. Around 1990s, the engagement constituted broadly an outsourcing kind of relationship, where Ministries, Departments and Agencies (MDAs) would contract out operation of cleaning, security, photocopying, catering to third party providers. Over years this relationship is becoming much deeper through increased sign up to engaging through PPPs. In 2010, the Government of Uganda passed the PPP policy. In 2015, GoU passed the PPP Act as part of government's commitment towards PPP adoption in delivery of public service.

2.9.3 Legal and Regulatory Framework for PPPs in Uganda

Various studies have pointed to the affirmative that sound legal and regulatory framework is critical for success of PPPs (Wu, 2019:241: Akintoye et al., 2005: - 459-471: Chan., 2010: 484-494 & Ndandiko, 2006:44: Tiong, 1990:229: Zou, 2014: 270). It is argued that a sound legal and regulatory framework helps to define roles and responsibilities of stakeholders and define mechanisms for resolving disputes (Akintoye et al., 2005: 459-471). Farlam (2005: 4) argues that in Africa the legal and regulatory framework and skills for implementing PPPs has been absent. Despite this view, some strides have been achieved across the African continent in creating the legal and regulatory framework for PPPs as shown in table 2.4 below.

Table 2.4: Status of Legal and Regulatory Framework for PPPs in selected African Countries

Country in Sub-Saharan Africa	Years of Enactment, Passing and Development of PPP Policy, Act and Regulations	
	PPP Policy	**Enactment Of PPP Act**
Uganda	2010	2015
Tanzania	2010	2014

Kenya	2013	2013 amended 2015
Burundi	2015	2015
Rwanda	2015	2016
Malawi	2011	2003
Ghana	2011	Bill level
Zimbabwe	2010	No dedicated Act
Nigeria	2007	2008
South Africa	1999	1999
Botswana	2009	No dedicated law
Namibia	2009	2017
China	2003	2004
Mauritius	2004	2016
Mozambique	2011	2013
Ethiopia	No dedicated PPP Law	No dedicated PPP Law

Source: World Bank PPP Legal Resource Centre (2018)

In the above table 2.4, literature reviewed reveals that there has been some considerable attempt by African countries to either establish a legal and regulatory framework for PPP. This evidenced is provided by the passing of policies and respective Acts. While some countries have gone ahead to develop regulations, a number of countries have been able to develop and pass both PPP Acts and PPP regulations. It is also evident that some countries such as Ethiopia that have not developed specific PPP Acts have made effort to integrate implementation of PPPs in existing laws and regulations such as her national procurement legal and regulatory framework but not necessarily a PPP dedicated law and regulations. On the other hand, while countries have developed PPPs Acts, PPP Policy and PPP Regulations, contextualization of PPP legal and regulatory framework has been viewed in varying dimensions. In a restricted sense, the legal and regulatory framework has been limited to the existence of PPP Act,

policy and regulations. Yet in broader perspective, PPPs legal and regulatory framework has been viewed to encompass Acts related with, land, municipal finance, and general public finance, Public Procurement and Disposal, the Constitution. In all, putting in place a strong legal and regulatory framework is vital for the successful execution of PPPs (Brown et al. 2006:12: Eberhard 2007:4-5: Stern and Holder 1999:33-50).

Accordingly, there is argument that regulation for PPPs should transit from the focus of regulation of regulation procurement practices as seen in Figure 2.3 below

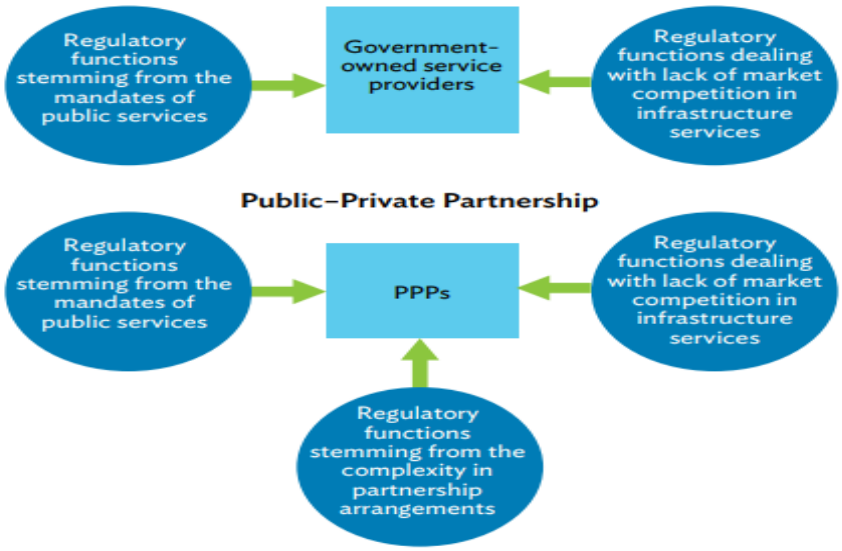

Figure 2.3: Changes in Regulatory Functions from Traditional Procurement to PPPs

Source: **Wu (2019:233)**

From figure 2.3 above and in accordance with Wu (2019) regulation provides a key ingredient in the success of any PPP. It is argued that while regulation of traditional procurement mandates of public services with the aim of promoting competition, the focus of PPP regulation extends to control the complexity that comes along with partnership arrangement. By having robust regulations, the chances of PPP success would be high (Yescombe, 2018:36-38 & Wu, 2019:241). While guidance on designing of robust regulation related to PPPs has been met with anemic voices in scholarly literature and practice, Wu (2019:241) provides some guidance. Wu (2019:243)

denotes that good regulation needs to encompasses several elements as cited in the figure 2.3 below:

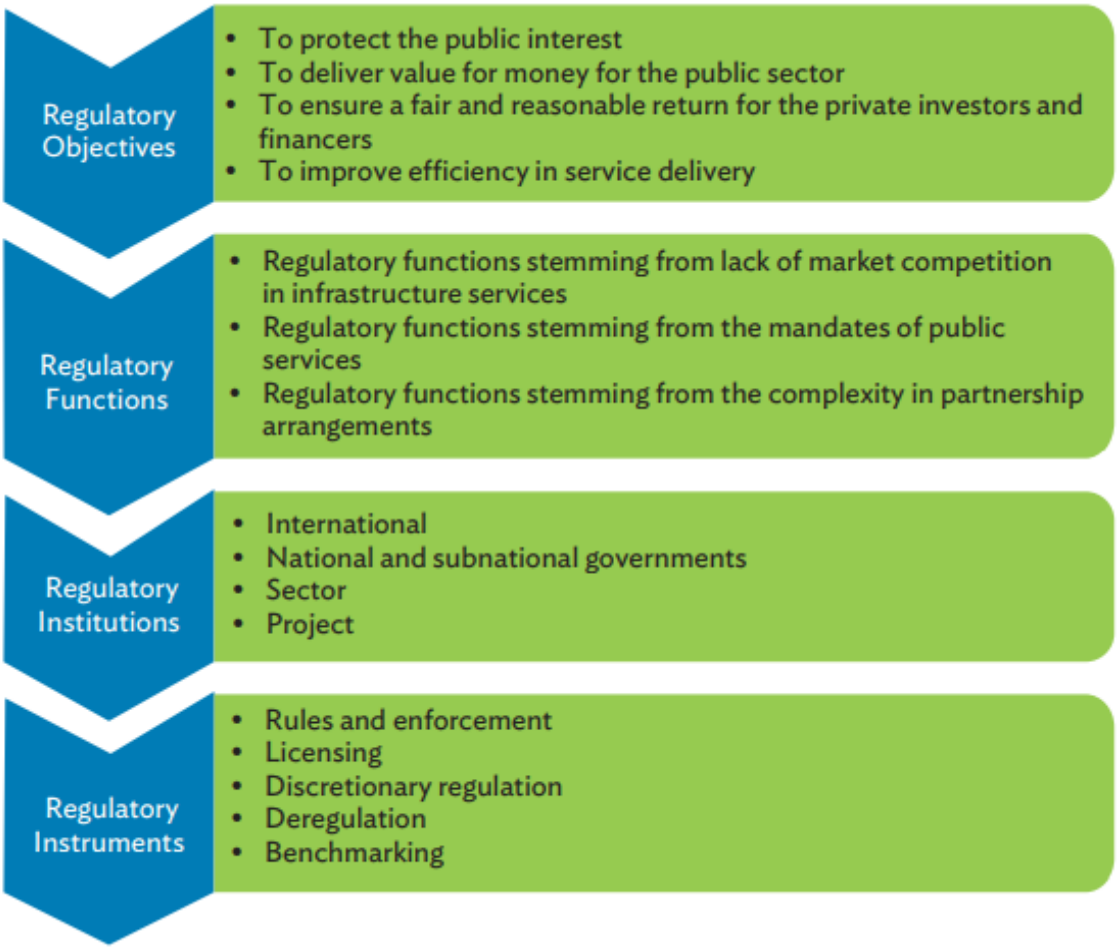

Figure 2.4: Key Components for Designing a Regulatory System for PPPs in Infrastructure Services

Source: **Wu (2019)**

From Figure 2.4 above, Wu (2019:241) argues that designing a robust regulation system for PPPs especially in infrastructural sector, formulators of regulations should consider elements such as defining regulatory objectives, assessing regulatory functions, examining regulatory institutions or structures that may be affected by the regulation under development or review. This should be followed by designing regulatory instruments as highlighted in figure 2.4 above. To succeed at defining the elements Wu (2019:242) denotes several questions that would guide the design of regulations:

Figure 2.5: Guidance Questions in Designing Regulations

Question	Nature of Question guiding PPP Regulations
QN 1	What are the regulatory objectives, stated or assumed?
QN 2	Are the main regulatory objectives included?
QN 3	What is the relative importance of different objectives?
QN 4	How are regulatory functions linked?
QN 5	How can regulatory functions contribute to project performance?
QN 6	Are these regulatory functions equally important across different types of infrastructure services?
QN 7	Which government institutions should carry out regulatory functions and at what level?
QN 8	What types of regulatory instruments are best used for a particular regulatory function?
QN 9	Is the mix of regulatory instruments optimal?

Source: **Wu (2019)**

By answering the nine (9) questions in table 2.5 above, Wu (2019:243-244) argues that governments can have misaligned regulatory functions, avoid missing out regulatory issues, prepare necessary capacities to deal with complexities that arise with PPP regulation.

It is further argued that by following this path to design of regulations, governments can also benefit from the outcome of designing measures that are in line with regulation objectives. In line with such views Wu (2019) emphasizes extension of benefit may be found in avoiding overlapping regulation functions. Wu (2019:243) emphasizes this

matter with a case study of water and sanitation that may pause challenges in regulation where central government or central agency is involved in regulation of such services that are also regulated by the Local government administration. On the other hand, Brown et al, 2007:6-7 provides three "meta-principles" that should guide the design of robust regulatory framework.

Accordingly, it is argued by Brown at al, 2007:6-7 that the design of a regulatory system should focus on: credibility: which focuses on honouring of commitments: legitimacy, that focuses on consumer protection and transparency that focuses on ensuring openness in deal making and implementation Investors must have confidence that the regulatory system will honour its commitments.

In line with such view, Wu (2019:241) argues that by streamlining regulation, PPPs implementation can avoid overlapping conflict in regulation functions. Accordingly, this helps to instil confidence among investors in PPPs. It is further argued that good regulation promotes transparency and better accountability in PPP environment. On the other hand, sound regulatory framework requires that governments put in place competent agencies to provide oversight across various industry (Brown, 2006:1-12 and Wu, 2019:241-244: Eberhand, 2007:4-5). It is argued that while some countries have put in place regulation agencies, the motivation for their set up was more a coerced rather than an intended approach by the World bank and other international lenders (Brown et al.2006:12). While this view has not evidenced critique, it's true that this could have been in the past and present, governments through Acts of national parliaments have established regulatory agencies at own will rather than coercion across various sectors.

Notwithstanding however, a review of literature points to the view that sound legal and regulatory framework creates an investor confidence. In line with such studies, the Government of Uganda passed a PPP Policy in 2010 and PPP Act in 2015. A review of the PPP Policy and Act, suggest that the following are captured:

- Definition of terms
- Identification of key stakeholders roles and responsibilities
- Procurement process for acquiring of PPP projects
- Procurement Methods for PPPs

- Evaluation of PPPs
- Contracting for PPPs
- PPP Contract Performance Monitoring

Hard castle, et al., (2005: 459-471) argues that a favorable framework is vital for successful completion of PPP projects. A sound framework is viewed to be necessary for developing sustainable relationships in PPP projects. In line with this view and sequence of literature reveals that a comprehensive policy, legislative and institutional framework has already been passed in Uganda to serve the needs of the Government's engagement with the private sector in delivery of public investments and services. Among other elements of PPP Policy and Act is the PPP Committee that provides wide depth of sectorial involvement in adoption of PPPs. However, it is notable in literature that lack of skills and experience remain a challenge in implementing the promise Uganda's robust PPP legal and regulatory framework. It is further evident that like other Acts passed by East African Community (EAC) member states Kenya, Rwanda and Tanzania, little attention has been provided for post closure contract management.

2.9.4 Procurement and Experiences of PPPs in Uganda's Energy Sector

The adoption of PPPs in Uganda energy sector is traceable form the days when the electricity supply chain was unbundled in the early 1990s (Ndandiko, 2006:359, Osborne, 2002: 230). The unbundling process into breaking of Uganda Electricity Board (UEB) monopoly that resulted into unbundling of generation, distribution, transmission and regulation functions under semi-autonomous organizations reporting to the Ministry of Energy and Mineral Development. Uganda Electricity General Company constituted a Board of Directors with a mandate to oversee electricity generation, Uganda Energy Distribution Company Limited (UEDCL) tasked to handle distribution, while Uganda Electricity Transmission Company Limited was given the mandate to provide transmission infrastructure. On the other hand, Electricity Regulatory authority was provided the mandate to provide regulation to the energy sector. The unbundling process, created the need for increased private sector participation in the entire electricity chain in Uganda. This is in line with Uganda Vision 2040 that prioritizes PPPs as a key tool for transforming Uganda into a middle-income class country.

2.9.4.1 PPP Procurement Process in Uganda

The PPP process refers to a systematic process that result into contracting of a private operator to offer services previously offered by the state (Republic of Uganda, 2015:3). While the legal and regulatory framework has been lacking (Ndandiko, 2006:50) for some time to guide the PPP process, it has now been passed (Republic of Uganda, 2015:3). In this framework, procurement of PPPs takes the following process:

Stage 1: Invitation to tender

Once a project has been approved for implementation as PPP, the contracting authority is required to popularize the opportunity. This can be done by talk shows, road shows, and any other means. This will be followed by securing approval form the Minister of Finance, Planning and Economic Development to confirm availability of funds if contracting is to fund the PPP. Once this is done, invitation to tender documents will be developed and issued to bidders. The method to be adopted may be open competitive or use of restricted procedure. Details of the PPP and instructions to prospective bidders including timelines should be included.

Stage 2: Bid Evaluation

When the bidding period closes, the bids are received, opened and evaluated. It is recommended the most economical advantages tender (MEAT) criteria be adopted when evaluating bids. The same criteria is adopted by EU member states (Caranta, 2015:427) as adopted in the year 2004. While implementing such criteria the best-evaluated bid (BEB) considers a bid to a 'MEAT' if it has the best technical and financial score. Section (6) of the PPP Act holds that the project team headed by the Project Officer shall be in charge of procurement process. The Accounting Officer shall appoint members to constitute the project team in line with the Public Procurement and Disposal of Public Assets Act (2003). Under the Act, an adhoc bid evaluation team is selected to evaluate bids in an entity and reports to the project committee.

The accounting officer is in charge of appointing members to constitute evaluation committee. The members of such committee may be internal or external to the contracting authority. It can be deduced from Section 15 (2) that the mandate of the project team is equivalent to the mandate of a contracts Committee in a procuring and

disposing entity (PDE). Once bids have been evaluated, the Evaluation committee is required to develop an evaluation report to be submitted to the project team for review.

Stage 3: Disqualification of Bidders

Other than failing to meet the MEAT criteria, it is further noted that bidders can be disqualified at each stage of the process (Republic of Uganda, 2015:427). This can be due to the following reasons: being convicted of criminal offence punishable by more than 3 months, bankruptcy, being found of professional misconduct, guilty of any offence under laws of Uganda. Others areas of disqualification include: failure to meet tax obligations and social security obligation in Uganda. Section 24 under the PPP Act notes that bidders can also be disqualified due to misrepresentation of acts, and where they have been blacklisted by the Public Procurement and Disposal Authority (PPDA) or by prescribed regulations under this Act.

Stage 4: Drafting of Agreement and submission to Cabinet for approval

Once the best evaluated bidder has been identified, the Accounting officer of the contracting authority is required to forward the draft agreement of Cabinet for approval depending on thresholds that shall be communicated from time to time by the Minister (Republic of Uganda, 2015). If the threshold is within limits of the Accounting Officer (AO), the AO shall ensure that they are in place before a contract is signed: value for money, financial risk transfer, and management plan is in place and that due diligence is undertaken, rights and obligations of parties, timelines. Other considerations from the review include: type of PPPs, financing structure, insurance for the private party, procedure for amendments, handling of force majeure events, provision for protection of the environment and others spelt out in section 26 subsections 5 and 6 of the Act. If the PPP Project value is above the required threshold, approval by Cabinet shall be required, similar requirements shall be considered as in Section 26 subsections 5 and 6 other than the requirement for Cabinet Approval and publication of the threshold value of the PPP.

Stage 5: Monitoring of PPP Contract Performance

The Project Officer and team are required to ensure that the private party delivers their contractual obligations (Republic of Uganda, 2015). Section 27 of the Uganda's PPP Act requires that monitoring of PPP focuses on ensuring compliance with conditions of PPP contracts, remedial actions to correct defaults are undertaken, agreed tariffs and fees are charged and that private property complies with conditions of the contract. In performing this task, there is a requirement the private party provides annual financial reports to the Accountant General (AG).

Further review of the PPP Act (2015) reveals that there are three methods applicable to procurement of PPPs. These include:

Open Bidding. This refers to a tendering process where the PPP contracting opportunity is advertised with an invitation to tender. It is required by Section 31 of the act that an invitation to bid or expression of interest (EOI) be made in a newspaper which has wide national circulation,

Restricted Bidding. Under this method, it is prescribed in Section32 of the PPP Act, that bids shall be directly solicited from bidders. The method is deemed appropriate in situations where the competitive procedure is deemed not to yield timely and efficient returns. It is further noted that methods prescribed in section 31 and 32 of the Public Private Partnership Act (Republic Of Uganda,2015) are referred to as competitive methods. None competitive methods are also mentioned. These included unsolicited proposal, negotiated procedure and competitive dialogue.

2.9.4.2 Public Provision of Services versus PPPs Delivery Option

Traditionally, governments have delivered public services but have over years adopted hydride approaches in delivering public services such as electricity, transport, education, healthcare and others. Through public provision, government has either used tax revenue, development debt, bonds and commercial debt to finance infrastructure and public service provision (Yescombe, 2018). Public provision has been faced with various challenges. According to Engil (2013: 23-25) public provision has been affected by "wrong choice of projects, corruption and state capture."

The most popular method for award of contracts in the sector has been competitive open bidding. Using this method, the sector procured concessions for the generation and distribution companies.

Uganda Electricity Generation Company Limited (UEGCL)

In the generation sector, a 20-year concession to operate and maintain the Nalubaale and Kiira hydropower stations located in Jinja was awarded to Eskom Uganda limited a subsidiary of Eskom Enterprises (Pty) Ltd of South Africa in 2002. UEGCL retains ownership and is responsible for the monitoring of the assets leased to ESKOM (MoEMD, 2002: Engorait, 2004).

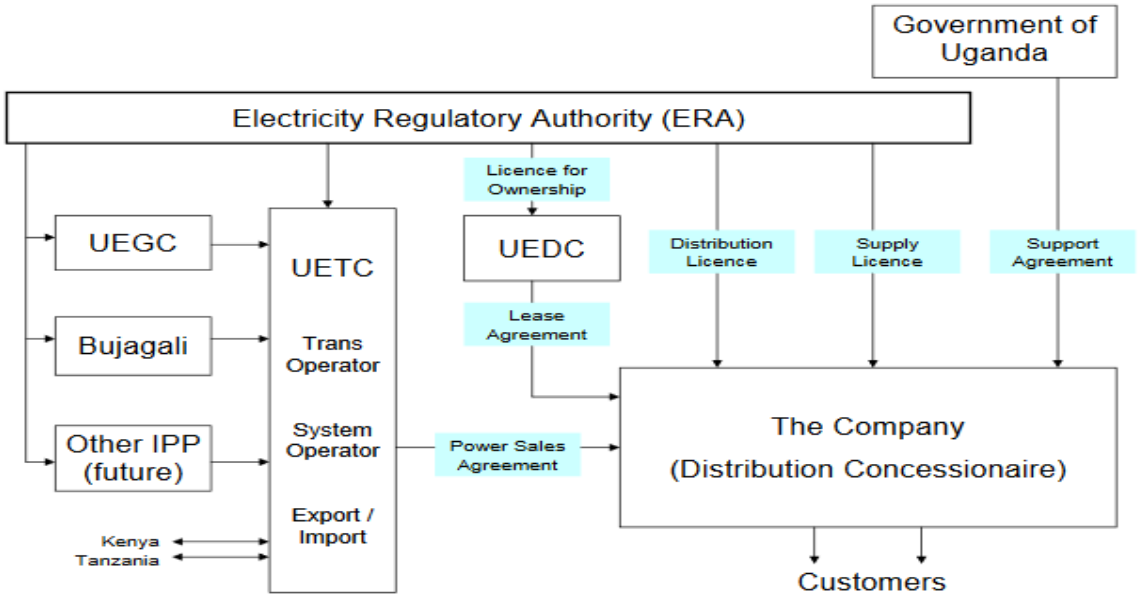

Figure 2.6: Structure of UMEME Concession

Source: **Ssebabi (2007:3)**

Figure 2.6, shows how the UMEME's concession is structured in Uganda. Within the structure, Uganda Electricity Regulatory Authority provides the regulatory role over the concession. This involves granting license to operate and regulating tariffs that are set by UMEME, the concessionaire. Uganda Generation Company Limited (UEGCL) is mandated oversee operators that have been given licenses to generate electricity such

as Bujagali and other independent power producers (IPPs). Uganda Electricity Company Limited (UEDCL) is mandated to provide distribution infrastructure necessary for UMEME power distribution service while Uganda Electricity Transmission Company Limited (UETCL) is mandated to provide bulk transmission service and is in charge of power exports to neighboring countries such as Kenya, Tanzania and Rwanda. As a distribution concessive on the other hand, UMEME receives electricity from producers and distributes to consumers. Electricity Regulatory Authority (ERA) provides all necessary license to powers stakeholders. The regulator also receives applications for tariff review, holds stakeholder meeting to hear applications and finally approves any change within tariffs. Uganda Electricity Distribution Company Limited (UEDCL) is in charge of providing leases of distribution infrastructure to distribution concessionaire(s) and under the UMEME agreements is required to distribute electricity in areas where the distribution concessionaire (UMEME) considered unattractive to distribute power. UMEME is a distribution concessive with a concession that will end in 2024. The firm distributes electricity to over 70% electricity consumers in the country.

UMEME Ltd a Joint venture between Eskom (SA) and Globeleq, a UK power firm, were awarded a 20-year concession in 2004 to manage the distribution system initially managed by the state owned utility Uganda Electricity Distribution Limited (Engorait, 2004). Under the concession agreement, UMEME was given a soft investment period of 18 months to improve collection rate, improve the distribution system and reduce the bad debt. After this period UMEME is to renew its commitment to the concession agreement. The concession terms also require UMEME to invest USD 65 million in the first five years and facilitate 15000 new connections per year during the same period increasing this to 25000 new connections in the subsequent years (MoEMD, 2002). The contract is expected to end in 2024 with a possibility to renew or revert service provided to the national distribution utility agency, UEDCL.

2.9.5 Existing Public Private Partnerships

In line with efforts to increase generation capacity by involving the private sector, government has packaged a number of hydropower projects as PPPs. Of greater significance in the projects are the Bujagali and hydropower stations spread across the

country. Some of these projects have included: Bujagali HPP with 250MW installed capacity and other dams managed by independent power producers spread across the country (ERA, 2016). The Bujagali hydropower project has been built along the River Nile north of the Nalubaale and Kiira power stations. The dam with a generation capacity of 250MW is to be constructed under a Build Own Operate Transfer arrangement and when successfully implemented will be the first hydro Independent power project in Uganda. Construction of the dam is hoped to offer a long term solution to the current energy crisis and power generation deficit in the country (World Bank, 2007). The project that has been developed by Bujagali Energy Limited (BEL) encompassed the construction and operation of a run of the river power scheme and 100km of 132Kv transmission lines to evacuate the generated power to the main grid (World Bank, 2007).

2.9.6 PPPs adoption in Uganda's Hydro Power Sub Sector

The engagement of private players and PPPs in the electricity sector is traceable from 1999 (Electricity Act, 1999). When the Act was introduced and following pressure from development partners like World Bank, the newly created vertically integrated agencies started engaging the private sector in PPP arrangements.

Two key players are notable when debating issues related to procurement and implementation of PPPs in Uganda electricity sector. UMEME is known for the 20-year electricity distribution concession with the government signed on behalf of government by UETCL and UMEME, as South African firm to distribute electricity to Ugandans. On the other hand, Bujagali investor (BEL) is known for having entered a 30-year Build Operate Own Transfer (BOOT) with UEGCL and Bujagali Energy Limited, as a special purpose vehicle (SPV) company for construction and maintenance of Bujagali Power Dam expected to install 220MW on Uganda's national grid. It is argued by Sebababi (2007: 3) that Uganda has secured some strides by engagement of PPPs in the hydroelectricity energy subsector. It is asserted that systems losses have over years reduced from 35-40% to 27%, revenue collections from the sector that were around 65% but have grown to 98%, accounts receivables were as low as 7 months and are now at 1 month. Other benefits achieved due to coproduction and delivery with the

private sector on the frontier in the electricity supply chain are argued to have included increase in electricity access from 5% of the population (Sebababi, 2007: 4) to 22 % (UBOS, 2014). Despite these proclaimed promises, problems exist on transparency of UMEME. To reduce power losses and improve efficiency of billing system, UMEME is said to have procured prepaid meters that the national standards body, Uganda Bureau of Standards (UBOS) has publicly declared 98% ‘’fake”. It was further deemed that electricity tariffs would reduce and stabilize. This is deemed not to have happened (Akampurirra, 2007: 4). On the contrary, UBOS (2017: 145) argues that there is increased access to grid electricity if Uganda is to achieve its Vision 2040. However, limits exist as only 1.5(million) consumers of a population of 40(forty) million are connected to national grid (ERA, 2018: 1).

To increase power access, the GoU has over the years encouraged participation of the private sector in generation, and transmission of electricity. The involvement of private sector investors was motivated by the view that the private sector is efficient and more effective. This notion is argued not to be different in other parts of the world (Akampurirra, 2007: 4). The participation of the private sector in the energy sector in Uganda has increased installed and generation capacity of electricity in Uganda.

However, mixed reactions exist on whether they dominate debate on whether PPPs have delivered the promise for their adoption. The involvement of PPPs in the hydroelectricity energy subsector in Uganda has been met by mixed reactions. Private players such as UMEME (concessionaire for electricity distribution) and Bujagali Dam Investor (Bujagali Energy Limited) have participated in the sector to increase improve efficiency and effectiveness in electricity sector. This has been through adoption of PPPs in electricity generation and distribution.

2.9.6.1 PPP Models in Uganda’s Hydro Power

Traditionally the government of Uganda operated in monopoly mode generation, distribution and transmission of electricity by Uganda Electricity Board (Olanya 2013: 48, Gore, 2009: 352-460 World Bank, 2014: 7-9). With the whirls of change, Uganda

like any other country adopted the economic liberalism policy shift in the 1990s (World Bank, 2006: 3: Gore, 2009: 392-460).

This was motivated by the view that government direct participation is endowed with market failure (Olanya, 2013: 1). Gore (2014: 359) denotes that reforms in the sector were promoted by supply crisis that had heightened in 2006 coupled with inefficiencies of utility agencies in the 1990s. Based on this assertion and the promise of efficiency and effectiveness that would arise in the sector, Government of Uganda liberalized the hydro electricity sector by scaling down its role in generation, distribution and transmission of electricity and focusing more on the regulation of the hydropower sub sector (Olanya, 2013:48: Ndandiko ,2006:3: Niekerk & Hall,2013:1). This argument is in line with Olanya (2013:1) that argues in similar thought that liberalization of the sector was aimed at making the electricity sector financially viable, and efficient to growing demands for electricity. On the other hand, Emmanuel (2007:2) argues that liberalization of the utility sector was informed by budgetary constraints faced by governments in developing countries which often meant inadequate financial support to the state owned utility companies: hampering their effective performance, with their operations characterized by poor service delivery (Benoit, 2005:4: William, 2006:5) manifested amongst others by frequent power outages, low area coverage, high transmission losses and inefficiencies in revenue collection (ADB, 2000: William and Ghanaian, 2006:816). Privatization and liberalization of the power sector resulted into the adoption of PPP models. According to HM Treasury (2000), there are different forms of PPPs, the major ones being asset sales, wider markets, sales of business, partnership companies, private finance initiatives (PFI), joint ventures, build-own-operate-and-transfer (BOOT) projects, investment partnerships and policy partnerships. The most commonly used PPP model in the UK is the PFI (HM Treasury, 2000). The interest in the use of PPPs in Uganda seems to be driven by the success of the PFI model in the United Kingdom. PFIs are the most successful and prolific forms of PPPs and involve the public sector contracting with the private sector to provide quality public services on a long-term basis, typically 25–30 years. In Uganda PPP adoption has been through several model or forms. These have included: concessions, and Design Finance Build Own Operate and Maintain (Kabanda, 2018: 1-13).

2.9.6.2 PPP Models by PPP Case study in Uganda's Hydro Power

Concessions in Uganda appear to be the earliest robust PPP form adopted in the hydroelectricity energy subsector in Uganda. Following the enactment of the Electricity Act 1999, GoU commenced the journey of liberalization of the sector, which marked the entry of PPPs. This situation is not different from countries like United Kingdom, Germany, Norway, South Africa and many other countries increasingly in Sub-Saharan and more specifically East Africa. Conceptually a concession, is defined as a PPP whereby a public entity assigns to a private company the right to exploit a monopoly service by charging users, usually through making investments at its own risk (Hall, Motte, & Davies, 2003: 2-3). They further argue that concessions were initially popular in the UK and France. In basic terms concessions as used in the context of PPPs to refer to "delegated management" of a public service by the public authority, where operating results define remuneration of the delegate, and where management of the service is entrusted to a legal entity which can be a private company, individual, local semi-public company, association, another local authority or a public corporation not controlled by the delegating local authority.

Adhémar and Dumont (2003: 2), Lobina and Hall (2003: 3) share in this argument which asserts that while a concession is considered a PPP in its own type, concessions can be categorized in three types according to Hall et al. (2003: 6). A concession in strict sense ("*concession*" in French) is when the private company has complete responsibility for operating the system, and making the necessary investments in the infrastructure, and takes responsibility for financing them at its own risk ("*à ses risques et périls*" in French). Build-operate-transfer (BOT) concessions are usually of this type.

''An operating concession ("*affermage*" in French),is whereby the private company has to operate the business and carry out maintenance at its own risk, depending on revenue from water charges - but the commune remains the owner of the infrastructure, and is responsible for investment in the system"(Hall et al. (2003: 6)

"Management contracts ("*gérance"* in French), are those in which the company is paid a flat fee to manage the system, without taking any responsibility or risk for investments".

Case Study 1: UMEME PPP Contract (Concession)

In 2005, the GoU entered into a 20 years' concession with UMEME-UK based Globeleq (owned by CDC Group and Eskom with 56% to 44% respective shareholding) (Gore, 2006: 362, Nsasira, Basheka and Oluka, 2013: 51). Based on the above categorization, and UMEME's concession they share characteristics of an operating concession (Lobina and Hall, 2003: 3, Hall, Motte and Davies, 2003: 6).

According to UMEME (2015: 2), the concession was a 20-year concession awarded in 2005 and terminates in 2025. Under the concession UMEME, Electricity Regulatory Authority provided targets associated with reducing both technical and non-technical losses, revenue collection targets, infrastructure investment targets and operating cost allowance. In return UMEME, the concessionaire would earn 30% of the end user tariff. While it was envisaged that concessions would provide greater electricity access, reduced power losses and availability, a year later the concession it is argued that the concessions have not delivered up to expectations. It is argued to have turned to a 'perfect storm' for the electricity sector in Uganda (Gore, 2006: 362).

Tariffs have over time been unstable and increasing (Gore.2006: 362). However, this view point is to the contrary according to UMEME (2016: 2). The firm records indicate that its engagement in the sector has helped to provide affordable tariffs compared to its peers in the EAC region.

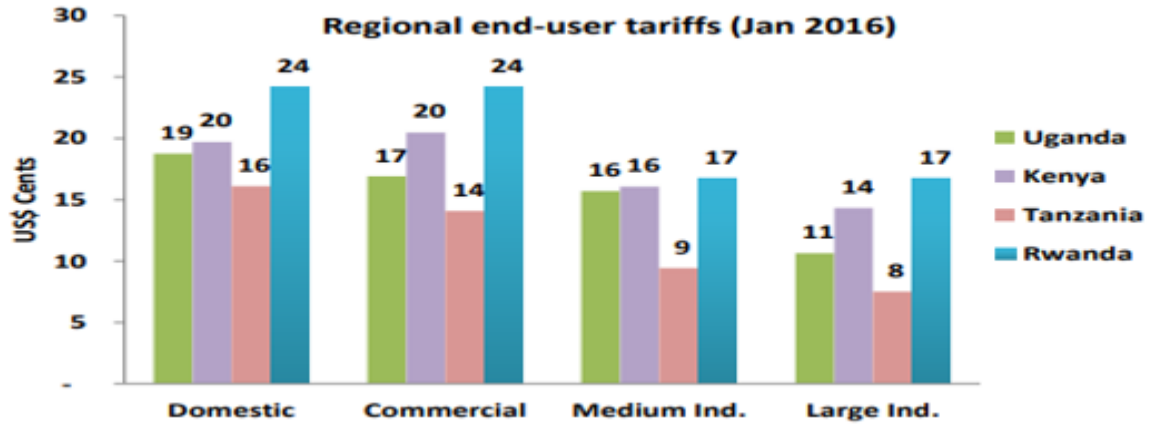

Figure 2.7: Regional end user tariffs (January, 2016

Source: Electricity Regulatory Authority Uganda, Electricity and Water Utilities Regulatory Authority Tanzania, Electricity Regulatory Commission Kenya, EWSA Rwanda. Data collected as at the close January 2016 and converted using Bank of Uganda official COMESA exchange rates to US$ as cited by UMEME (2016)

From the above figure 2.7, on regional tariff comparisons tariffs as at close of 2016, the Uganda domestic consumer paid US$cents 19 compared to its peers Kenya that paid 24 USD$cents kwh and Rwanda US$cents 20kwh. While Ugandan domestic consumer paid USD$3cents higher than the Rwandan end user of electricity, the end customer in Uganda paid lesser tariff than Kenyan and Rwandan consumers.

The same trend continued across commercial, medium industry and large industry. Based on figure 2.7, Ugandan consumers enjoyed relatively competitive tariffs than their peers in Kenya and Rwanda (UMEME, 2016: 18). According to UMEME (2016:3) customer base has grown with a ratio domestic to industrial ratio of 91%:9%. Despite such achievement, harsh criticism exists on whether the UMEME concession was the right direction to take for the GoU (Gore, 2009: 359-399). This critique that started as a joke has previously worsedned ,leading Members of Parliament to overwhelming vote to a 'yes 'on a question to terminate UMEME concession. Despite such vote and controversies surrounding the concession, UMEME is unrattled as it continues to service its obligations as per concession in place up to 2025(UMEME Annual Report,2017 & 2018).

Case Study 2: Bujagali Dam PPP

To reduce the electricity challenge, the Government of Uganda (GoU) through Uganda Energy Generation Limited (UEGCL) secured a public private partnership (PPP) with Bujagali Energy Limited (BEL) (Electricity Regulatory Authority, 2018: World Bank, 2014: 9).

The Bujagali Hydropower Project (HPP) provides the country a volume of installed electricity capacity of 250 MW. The HPP facility is located on the Victoria Nile, Kayunga district, Uganda and was commissioned in 2012 (Rex et al.2012). The project sponsor was Bujagali Energy Limited, a special purpose vehicle that constitutes a project-specific partnership of SG Bujagali Holdings Ltd, wholly owned affiliate of Sithe Global Power, LLC) and IPS Limited (Kenya)(Kabanda 2014, 1-13).

According to World Bank (2008:2), the initial estimated cost for the project was US$900 million non-recourse, and considerably the largest Independent Power Project (IPP) project financing in sub Saharan Africa at the time the HPP was constructed.The financing structure that was adopted included: US$700 million long-term debt: 16 -year facility from Exim Investment Bank (EIB), AfDB, DEG and IDA PROG Covered: Barclays/Absa and Standard Chartered banks offer a 20-year facility from International Finance Corporation (IFC), Proparco and FMO while Blackstone and the Aga Khan Foundation offered private equity worth US$180 million (Blackstone and Aga Khan Foundation) and US$20 million public equity investment. The project that commenced in 2008 has suffered several challenges. From political through to environmental and economic constraints, contestations exist on whether the project has delivered its objectives.

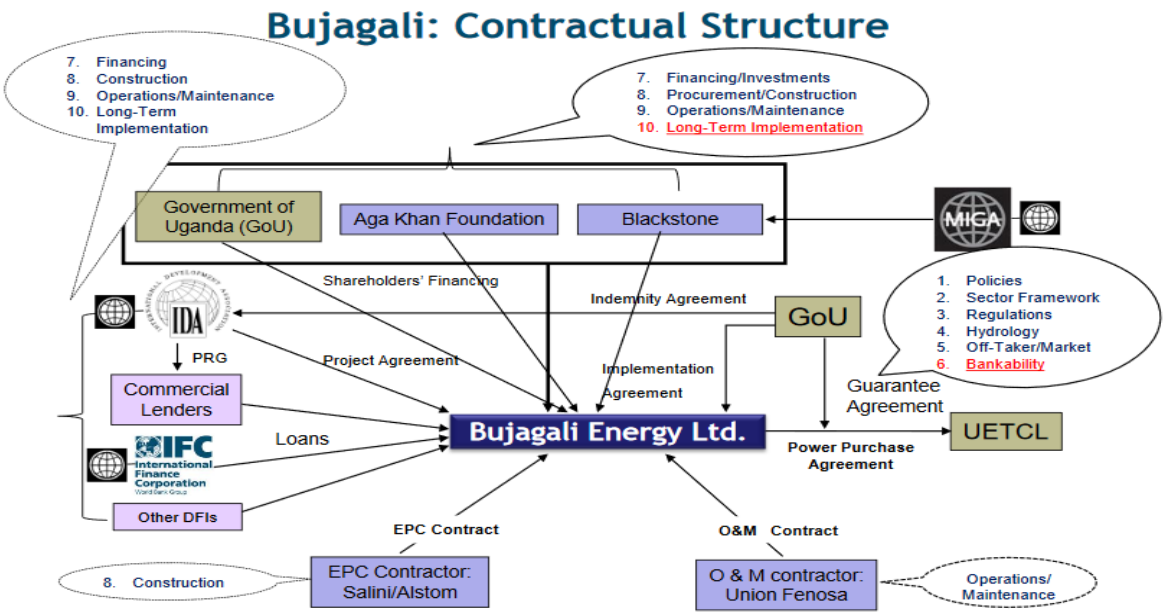

Figure 2.8: Bujagali Contractual Structure

Source: IFC, 2008

According to Kabanda (2014: 7) design, finance, build, own, operate and maintain is yet another PPP model that has been popular in the Uganda's hydroelectricity power environment. Under this PPP arrangement, it is argued that Uganda Electricity Generation Company Limited (public agency) contracted with Bujagali Energy Limited (BEL) a private consortium to design, finance, build, own, operate and maintain Bujagali Dam for a period of 30 years.

It is further argued that under the agreement, BEL was to produce power under this dam of 250MW installed capacity and sale it exclusively to Uganda Electricity Transmission Company Limited (UETCL) under a Power Purchase Agreement (PPA). The agreement consequently resulted into the procuring and signing of fixed price engineering procurement contracts to deliver the dam within 44 months (Kabanda, 2014: 8). While the PPP agreement was signed on 5th December, 2001, works were delayed and started in 2007.

Despite the promise that this dam provides Uganda, controversies remain on whether promises guided by its feasibility study such as reducing Uganda's power challenge (Pottinger, 2008:4, Gore,2006:4). From its inception PPP project is argued to have been challenged by social discontent over environmental and cultural safeguards that

appear to have been left out (Kabanda, 2014: 9: Gore, 2006: 362, World Bank, 2007: 2). Despite the value and excitement, the dam provided, it has been argued that the current PPP arrangement was a bad deal having put Uganda is in deep crisis in the years later (Akintoye 2003: 4, Gore, 2006: 389: Kabanda, 2014:9).

The dam is considered to be producing 125MW compared to the 250MW installed capacity projection, tariffs have remained unstable and taking an upward trends (Gore, 2006: 8: Pottinger, 2008: 8, World Bank, 2007:4).

It is argued that part of the bigger problem is that the Bujagali private party, was not competitively procured (Pottinger, 2008: 8). On the contrary, Rex et al. (2014:8) argues the BHPP increased capacity of installed power by 100%, reduced expenses by businesses in generating own energy using costly liquid fuels such as diesel and lowered the cost of electricity averagely to as low as US$0.05cents kwh. It is also argued that access to electricity increased from 5 to 14% by 2014. The success of the BHPP attracted interest of new IPP in the sector. It is further argued that being the biggest dam at the time managed by an independent power producer (IPPs). Other benefits attributed to Bujagali HPP have been the reduction of emissions estimated at 904,000 metric tonnes CO2 equivalent per year (Rex et al.2014:8).

Case study: Procurement of Karuma Power Dam Project

The Karuma project was conceived in the early 1990s as a potential to generate 200 megawatts (MW). In the mid-1990s, the Norwegian firm Norpak acquired exclusive rights to develop the project. Early 2008, Norpak pulled out after a protracted conflict with the World Bank. It handed the project designs, maps, ground investigations and other information over to the Ugandan government. The government made a decision to increase the capacity of the Karuma dam from 200MW to 600MW after feasibility studies in 2010 confirmed that the water flow could generated that amount of energy (UEGCL, 2018:np).

The project hit a snag in 2010. This was mainly because residents of the area around the proposed site for the dam were not informed about the pre-feasibility studies and

the drillings that were taking place in their plantations (UEGCL, 2018). This activity was going on without their consent resulting into a resurgence of conflict over settlement plans. This created a negative impact on the project, hence a longer time frame than planned for. In future projects, this call for consideration of the rights of the local people who are to be affected by dam projects in all three phases of a dam project that is planning, construction and operational (UEGCL, 2018).

The Karuma project mostly used a public notice as the method of public involvement. This is troublesome since in rural areas, many people may be interested, but unable to reply to public notices due to illiteracy or lack of ready access to newspapers. Therefore, public involvement can be increased through use of public meetings. In a public meeting, local people can voice their opinions, concerns and suggestions. This method can complement public notices and can be very effective in ensuring public involvement. It may also be appropriate to conduct interviews, focus group discussions and a series of workshops with the local people and their leaders to gain more in-depth information.

The procurement process was marred by complaints that are arguably one of the causes of the delay of the dam. In January 2013, Public Procurement and Disposal of Public Assets Authority (PPDA) suspended the process of tendering the power project (Public Procurement Authority, 2013: np). This was after the intervention of the Inspector General of Government on allegations that M/S China International Water and Electric (CWE), was passed on the technical stage based on misrepresented facts about its capacity to construct the dam. CWE was among the companies competing for the contract. A series of court injunctions and cancellations and a repetition of the technical evaluation processes were poular due to petitions by construction companies which wanted open and fair competition for the contract led to a 2-year procurement delay. However, the government blamed the delay on certain elements bent on sabotaging economic progress. The president of Uganda attributed the delays to the mistakes of Ugandan professionals as well as the series of conditions imposed by development partners (IGG, 2017: np).

The Karuma dam project struggled to take off and this led to the increase in the construction price (UEGCL, 2018: 1-14). Secrecy surrounded the process of Karuma

dam construction right away from the planning stage: the public was initially denied access to the information about the whole process. The project will cost over $2 billion, 85% of the funding came from the Exim Bank of China as a soft loan while the Ugandan government provided 15% of the funding. In August 2013, President Yoweri Museveni commissioned the Karuma power project construction works and it is expected to come online by 2018. Sino Hydro Corp Ltd from China is undertaking the project since 2013(The East African Newspaper, 2018: 3).

The initial plan was that Karuma would be a public project fully financed by the government of Uganda through the energy fund and oil revenues in order to provide cheap electricity and neutralise the high tariff (The East African Newspaper, 2018:3). However, this was not possible. On March 24, 2015, the parliament of Uganda approved a government's request to borrow funds for the construction of the hydro power plant. The money was to be payable over a 25-year period at an average 3% interest rate. The Energy Fund money is funding only 15% of Karuma Hydropower Project and the loan finances 85% (The East African Newspaper, 2018: 6).

According to Ndyabawe, (20015: 1) issues regarding the compensation and resettlement of residents who previously settled around Karuma area also threatened the commencement of the project. Early 2013, the residents filed a case in court over compensation and wanted an injunction on the project until their issues were looked into. According to the Environment and Social Impact Assessment of the dam, the total land required for the project was 465.52 hectares. It is further revealed that in the mid-1990s, Norpak, the previous contractors, acquired some land and compensated the owners. But some more land was still required: it was to be acquired from locals residing in four villages in Mutunda and Kamdini sub counties in Kiryadongo and Oyam Districts respectively (Ndyabawe 20015:1). However, residents were bitter that the money being offered was too little and they vowed not to leave their land. The local leaders who were partly involved were also accused of being unfair to the community members because they had allegedly been bribed and they hurriedly did the work, which worsened the compensation issues. Different rates were used in the same areas, which contributed to the problem, and no compensation was given for land they had occupied as see from annexes 1 1nd 2 of this study. This has made local residents to

reject the rates as very low, which attracted legal battles in court between residents and the government that further delayed the project (The East African Newspaper, 2018).

A local independent Complaints committee should always be put in place before the project starts in order to settle the disputes and inequity in the compensation exercise in time for the projects to start as planned. This is in line with Article 6 of the Indigenous and Tribal Peoples Convention, 1989 which emphasises the principle of proper consultation and participation of the affected people.

Ndyabawe (2015:6) argues that the IPP project at Karuma has faced controversies over insurance. The Engineering Procurement Contractor Sino hydro has failed to pay premiums to a consortium of 23 insurance and re-insurance companies, and is instead questioning the 2013 contract. National policy requires all national projects to be insured with Ugandan insurance companies as a way of reducing capital flight and help deepen the domestic financial system. However, the contractor is uncomfortable with this arrangement. This disagreement means that component of the project is not insured and Uganda could lose in the event of a catastrophe.

The issues, which negatively affected and delayed the construction of the Bujagali dam, are almost the same issues, which are affecting the construction of the Karuma dam. This therefore shows that the government of Uganda did not learn from the experience of Bujagali dam especially in the areas of procurement of contractors and compensation of the people to be affected by the dam. Uganda has to completely settle the abovementioned issues if it is to improve its energy sector and achieve universal electrification as stated in its Vision 2040 master plan.

While PPPs projects in the hydro electricity sector have had challenges, similarities exist between the challenges cited in reviews over the projects. Environmental financial, procurement and resettlement issues remain key issues that feature. Stakeholder resistance also is deemed to constitute part of the greater challenge faced by the private parties that engage government through either the procurement or the PPP process in the journey of improving electricity energy subsector in Uganda.

2.10 Principles of PPPs

PPPs like any approach used by governments in delivery of public services are guided by principles. In India, PPPs are guided by principles such as Value for money(vfm), equitable contractual structures, transparent procurement process, enabling institutional framework, payment for services, efficient utilization of existing assets and optimal allocation of additional resources coupled with sustainable incentives and concessions (Ullah,2015:5).

In Uganda, the cardinal principles that guide PPP implementation include: value for money, protection and respect of rights and interests of users, transparency in the procurement process, accountability of contracting party to users of the project, promotion and participation of citizens (PPP Act, 2015:8).Other principles include: compliance with terms and conditions of relevant laws, protection of intellectual property and stimulating growth and development through harnessing private sector innovation and efficiency (PPP Act, 2015:8).

In the developed world, and in countries such as UK, Italy, USA, Australia Germany, principles such as accountability, competition, value for money(vfm) and transparency have dominated the PPP implementation process (Finders, 2005:215-239).

2.10.1 Objectives of PPP adoption in Hydro Power subsector

Conventionally, PPPs are conceived with multiple objectives ,PPP Policy (2010:4 and PPP Act (2015:3) including promoting infrastructure development, developing the local economy, reducing costs, increasing construction and operation efficiencies, and improving service quality by incorporating the private sector's knowledge, expertise and capital (Yuan et al., 2009).

To have a deeper understanding of the hydroelectricity energy subsector in Uganda and the PPP journey several scholars argue that while UMEME and BEL have been procured under PPP concessions, there is argument that government procurement process has also been used to procure private parties not necessary for core PPP agreements but for construction projects.

2.10.2 Challenges faced in implementing PPPs in Uganda and Developing Countries Electricity sector

Like in every sector of PPP adoption or any strategy adoption, challenges in Uganda pursuit to use PPPs as a policy and strategic tool to improve efficiency and effectiveness in the sector exist. A review of literature reveals that these challenges or constrains can be analyzed from three perspectives: contractor's perspectives, client's perspective and regulators perspective.

From a review of literature, the following are provided as the contractors' perspectives on constraints affecting PPPs in the electricity energy subsector.

Table 2.5: Contractors' perspectives on constraints affecting PPPs in the electricity energy subsector

S/N	Challenges Constraints Affecting PPPs In Hydropower sector Subsector	Authors
1	Investors' need for a pre-dictable investment environment	Lamech,2003
2	Unclear and unambiguous regulatory and legislation processes that provide guidance as well as avenues of redress for aggrieved parties	AfDB,2000 Sader,2000
3	Unwillingness of all participants to adhere to and respect the outcomes of these processes	AfDB, 2000
4	Restrictive conditions imposed by stringent regulations including the restriction on the project rate of return have acted as disincentives for the development of public private partnerships	Sader, 2000 Blackman et al., 1999.
5	A similar result has been obtained where there have been attempts to limit foreign ownership of private power companies	Jyoti et al., 1998: Blackman et al., 1999: Fraser, 2005: Woodhouse, 2005

6	an important incentive for and a consideration of investors when deciding to invest in the electricity sector Institutional challenge	Lamech, 2003
7	In addition, delays in the electricity reform process have acted as an impediment in that they delay the formation of an independent regulatory body:	Blackman et al., 1999, Fraser, 2005
8	Investors' reliance upon special situations and/or political patronage to obtain concessions often on a non-competitive basis (ADB, 2000).	AfDB ,2000
9	In addition, political interference in contract awards as experienced with the Hwange project in Zimbabwe and accusation of corruption and cronyism by a politically powerful family, for example, in the award of the Paiton and TanjungJati independent power producer tenders in Indonesia have been identified as constraints to private sector participation in the electricity sector.	Sader, 2000 Williams, 2006
10	Geological surprises	Ullah,2018

Source: Developed by Principal Investigator (2018)

In table 2.5, it is evident that PPP projects in electricity and other sectors are faced with constraints from an unpredictable environment through land issues, political influence peddling, and political patronage. On the other hand, land acquisition, institutional challenges remain challenges for PPP implementation in Uganda (UEGCL, 2016)

Table 2.6: Contracting party (Government) perspectives on challenges faced in Implementing PPPs in Uganda's Hydro Electricity Energy Subsector

S/N	Challenges/Constraints Affecting PPPs In Hydropower Subsector	Authors
1	Securing financial closure by private party delays commissioning of PPP projects	Bbumba,2006:1

2	Mismatch of investment expectations and investment climate	Izzaguire,2000:8 Lamech et,al.,2003:8
3	Delays by government to secure financial closure from development finance partners	Bbumba,2006
4	PPP failure in other countries is a disincentive in attracting	Akampurira,2007:6
5	Inadequate or absence of legal and regulatory framework	Akintoye,2002:5
6	Inadequate institutional environment	Lunn ,2014:np
7	Lack of skills among public sector staff	Akampurira,2005:3
8	Hydrology challenges due to lowering of water levels resulting into operation below capacity by hydropower dams-Bujagali, Kiira	Akampurira,2005:3

Source: Principal Investigator (2018)

In table 2.6 above, it is also noted that factors that tend to render PPP investments by governments unattractive for the private sector are analyzed. A limit on return on investment appears to be coming out from literature as one of the key disenables and discentivisers to investors. In addition, the legal and regulatory framework is viewed to be more skewed to protecting investment interests of the contracting party. This tends to expose investors to high risk that is viewed not to be a tandem with the level of investment required. Ezor (2009:9) argues that power theft remains a challenge not only to the client but also to the private party. This is because power theft increases losses, a target area for the private party. On the other hand, the more the power losses, the more subsidies that the contracting party or government is likely to provide the private party, increasing tax burden on citizens since money paid in subsidies is usually part of tax revenue paid by citizens.

While studies have focused more on the challenges faced by the contracting party and the private party, consumers of electricity have faced challenges in consuming electricity. According to Ezor (2009: 9) consumers are faced with challenges too. These include: unreliable power supply amidst high tariffs. It is further argued that despite efforts to increase installed capacity with the current construction at Karuma and Isimba HPPs, demand for electricity appears to be exceeding supply. According to Ezor (2009: 10) the year 2009 experienced peak demand 380MW while practical installed capacity stood at 340MW. It is asserted that this calculation assumes that there were no power losses (Ezor, 2009: 10).

It is further argued that where infrastructural projects are constructed, destruction of people's livelihoods has been affected. This has over time led to resistance to accept such projects by local residents in areas where PPP projects including Bujagali Dam project (Akampurira, 2009: 4) are being implemented. Additional challenges are identified as environmental challenges. It is argued that there is always belief that PPP infrastructural projects render the environment to destruction (Woodhouse, 2005: 4).
On the other hand, access to capital to close investment gaps by the public and private contracting parties remains a challenge (Gore, 2014: 390). This is attributed to a relatively small private sector that is unable to provide sufficient lending to projects that require high levels of capital and short payment periods that are unattractive to investors in PPPs (Akampurirra, 2009:4). In addition, it is asserted that private power investor's credit rating is considered poor by potential investors and lenders, requiring the government or the contracting party to provide guarantees. This has resulted into delay of projects (ADB, 2000: 12). Jyoti et al. (1998: 99-105) who asserts that in India similar challenge exists in financing IPPs share this view.

While the above are argued to be constraints affecting Uganda, a review of thoughts by scholars tend point to the fact that such constraints are not only affecting Uganda but are viewed to be common constraints in the context of PPP procurement and implementation in developing countries. Review of literature reveals that there is need to develop strategy to reduce these constraints in order to create appeal for PPP adoption amongst a spectrum of stakeholders.

2.11 Similarities and Differences of Procuring Hydropower Projects (HPPs)

While the study is primarily interested in the role of PPPs in improving competitiveness, it includes the concept of procurement and a case study organisation, Karuma Dam to explore whether project types significantly differ in cost and schedule overruns or not and whether lessons learnt from procurement can be used to improve procurement of PPPs with the aim of improving competitiveness of the hydropower sector.

It is argued that demand for electricity is increasing as populations continue to grow (World Bank, 2006: 1-2). To increases availability and access, governments world over have resorted to constructing large hydropower dams (HPPs). Governments have adopted a range of approaches to acquire HPPs. It is asserted that the most popular approaches have included: traditional procurement, PPPs and IPPs. This section of the study provides a discussion on experiences of acquiring HPPs through traditional procurement approach and PPPs.

According to Flyvbjerg (2005: 131–146), Budzier, and Lunn (2014: 50-51), hydropower dams acquisition decisions by governments are 'systematically biased'. In essence, HPPs acquisition decisions do not reflect value for money (vfm) propositions for citizens. It is argued that HPPs are costed below costs at the time of acquisition and are associated with high debt burden, social and environment costs.

On the other hand, it is argued that HPPs are characterised by 'optimistic judgments that are often exacerbated by deception' (Wachs, 1989: 476–479 Kabanda (2014: 1-13);: Pickrell, 1992: 158–176: Flyvbjerg et al., 2002, 2005, 2009:Flyvbjerg,2005:131–146, Flyvbjerg, 2002: 279–295). In similar critique, Besant-Jones (1998:317) notes that:

> "The economic impact of a construction cost overrun is the possible loss of the economic justification for the project. A cost overrun can also be critical to policies for pricing electricity on the basis of economic costs, because such overruns would lead to under-pricing. The financial impact of a cost overrun is the strain on the power utility and on national financing capacity in terms of foreign borrowings and domestic credit."

It is further argued that any delay is likely to result into a financial surcharge that is usually reflected in nominal tariffs (World Bank, 1996: 85).This increases debt burden on citizens, high tariffs making electricity uncompetitive (Terry,2008:26).

Acquiring HPPs has been through both traditional procurement methods and PPPs.To understand the traditional procurement approach, it is important to define the true meaning of procurement. Like other branches of study, procurement is a rotted in the discipline of business:

Table 2.7: Differences between traditional Procurement and Public Private Partnerships (PPPs)

ASPECTS	Traditional Procurement	Public Private Partnerships (PPPs)
Financing	Funded by loans from multilateral or bilateral public sources or central budget	Financed by special purpose vehicles equity, share of equity and long term loans from development banks
Risk allocation	Private sector bears, Design construction, financial risk maintenance financial risk	Political, force majeure, loss of acquiring minimal revenue forecasts, political and regulatory risks
Contractual agreement	Short term, 1 to 5 years	Long term contracts usually 10 to 30 years
	Generally segregated contracts for asset creation and maintenance	Public sector/users pay for services linked to performance
Focus	Private sector delivers assets	Private sector directly delivers services to users. Public sector remains accountable for the same
Project Management	The public sector is responsible for managing the project	Private party is responsible for managing own project

Core Regulation	Public Procurement and Disposal of Assets, Acts and Regulations	Public Procurement Policy, Act, Regulations and Guidelines

Source: Developed by researcher (2019)

From the table 2.7 above, the study synthesis reveals that while scholarly literature ,reviews of Acts and Policies suggest that PPPs are financed through the cited option, Hyun, Nishizana and Yoshino, 2019:137 narrow the options to debt and equity as available options for PPPs.

On the other hand, it is argued that the implementing company for a PPP is a special purpose vehicle that is shielded from risk of bankruptcy from the parent company unlike procurement where it is not a requirement to register an spv (Hyun, Nishizana and Yoshino, and 2019:137). Accordingly, this situation shields the spv from reduces exposure risks that are associated with parent firm. Hyun et al (2019:138-139) further argue that PPPs are financed by corporate finance, public sector finance, and project finance.It is also increassingly asserted that bond markets provide some source of capital especially to support already existing PPP projects, (Hyun, 2019:154).On the other hand procurement is financed by public sector finance, grants and development loans.

While attempts have been made to identify differences between traditional procurement and PPPs, a review of literature finds anaemic review of similarities between the two approaches of HPPs acquisition. However a review of Public Procurement and Disposal Act,2003,Public Private Partnerships (PPP) Policy,2010 and PPP Act,2015 point to that view that despite being separate acquisition methods, they all have an element of procurement. Consider a PPP as a procurement method that is used to acquire public infrastructural assets for instance, roads, dams (Ahadzi and Bowles, 2004:968). In similar line of thought PPPs like procurement involve some element of collaborative relationships if they are to succeed.

A review of literature suggest that while PPPs have been adopted alongside traditional procurement, a total migration from the former has not happened as governments' continue to procure HPPs and infrastructural assets using hybrid approach that combines both procurement and PPPs as means of public service delivery.

2.12 Chapter Summary

This chapter provided a discussion on the Agency theory that guided the study. The theory is relevant since the study context involved relationship where government as a principal delegate its role of generating and distributing electricity to private players under PPP arrangement and traditional procurement.

In this context, the private players take on the roles that would otherwise have been performed by various electricity utility agencies. The Chapter also discussed the working of PPPs in the hydropower sector providing an analysis of international experiences in the developed world, BRICS and developing world and more specifically Uganda where the study is premised. Based on literature review, the chapter concludes that countries world over are adopting PPPs in various sectors. The hydropower sector has become one of the prominent sectors for PPP adoption.

The review concludes that PPPs and traditional procurement approaches have been adopted to increase electricity access and availability. Specifically, PPPs have been involved in designing, financing, owing and operating HPPs worldwide and in Uganda. Where PPPs and traditional procurement approaches have been adopted there are varying benefits and challenges. The review concludes that acquiring PPPs has and will require adoption of both acquisition methods: PPPs and traditional procurement. In specificity, the Ugandans experience of PPPs highlights mixed reactions on whether PPPs was the best approach to adopt in the electricity sector. While harsh criticism exists for PPPs implemented in the sector, some literature point to PPPs adopted as one of the best experience that Uganda has ever had. This is attributed to the benefits that PPPs have delivered in the hydropower sector and generally the electricity sector.

CHAPTER3: METHODOLOGY AND RESEARCH METHODS

3.1 Introduction

This chapter provides a discussion on the theory that guided the design of methods adopted for this study. It highlights the population size, sampling strategies and techniques that were adopted in undertaking data collection. The Chapter provides a discussion of the approaches that were undertaken to analyze data. The chapter reveals approaches that were undertaken to manage the quality of the study and ethical considerations. The chapter ends with a summary of the entire chapter.

3.2 Grounded Theory

According to Belgrave and Seide (2019:299-316) the genesis of grounded theory is traceable in health sciences. Cochran, Elder, and Niemeyer (2019:.269-274) argue that grounded theory is about designing methods that are aimed at exploring lived experiences of participants in a given study environment.The theory was adopted to select the methods that guided this study. The theory presupposes that methods developed do not aim at testing existence of relationships. The theory aims at designing methods that seek to retrieve fresh voices in understanding a phenomenon that is not well explained.

Applied in the context of PPPs and their role in improving competitiveness of the hydropower subsector in Uganda, methods were developed to explore why PPPs have been adopted to improve aspects of competitiveness of electricity but continue to face harsh judgment. While various studies have been undertaken on PPPs and electricity, a review of literature that guided this study points to an interesting phenomenon. According to Martin and Turner (1986:np) and Glaser and Strauss (1967:1), grounded theory is recommended for such study since there was no hypothesis to test but what was in existence an interesting phenomenon where PPPs have been implemented but are being contested. It is from this, that the study can deduce theory and hypothesis for future studies.

3.3 Qualitative Design

Based on grounded theory assumptions, the study adopted a qualitative design. According to Merriam and Grenier (2019: 1-2) it is argued that qualitative studies depict an approach that enables us understand the contexts "we live in".

It is argued that qualitative studies focus on explaining and providing a complex situation by providing illumination and understanding of hard to define psychosocial issues and are most useful for answering humanistic 'why?' and 'how?' questions (Marshal, 1996:522). Other researchers argue that qualitative studies are aimed at understanding questions that relate to the 'what is?' kind of inquiry (Perrault et al., 2015: Turhan et al.2018: 28-32).

The design is justified as it attempted to answer questions that focused of the 'What' issues as highlighted in the questions that guided the study below:

RQ1: What PPPs models are implemented in Uganda's Hydroelectricity sub sector?

RQ2: What is the legal and regulatory framework for PPPs in Uganda?

RQ3: What lessons can government learn to improve PPP performance and competitiveness of the hydroelectricity sub sector?

RQ4: What are the challenges faced in implementing Karuma and Bujagali Dam projects?

RQ5: What is the most suitable PPPs for improving Uganda's competitiveness of hydroelectricity sub sector in Uganda?

Using a qualitative inquiry, the study listened to deep voices of persons that included: policy makers, contractors, or users of PPPs and Hydropower in Uganda. The inquiry set out to understand attitudes of people and beliefs surrounding their experience on PPPs and Hydropower competitiveness of hydropower. This approach is further justified by other researchers (Percy et al, 2018:1-3: Mason, 2010:3-4 and Green, 2018:13: Warwick et al., 2004: np, Rhodes et al., 2000: np: Guba and Lincoln, 2005:2002). Tracy (2010:839) upholds such position by noting that qualitative design provides conventional rather than traditional Catholic approaches that are inflexible in matching dynamism in the research environment such as saturation. While such a view of advantageous flexibility is promoted, critique of such advantage on the other hand

arises on grounds that quality for undertaking research may be compromised, which in turn compromises scientific validity of the study (Tracy, 2010:838). To mitigate such challenge, a criterion for ensuring the quality of qualitative research is provided: worthy top, rich rigor, sincerity, credibility, resonance, significant contribution, ethical, meaningful coherence is developed (Tracy, 2018:838). In undertaking this study, such criteria was adhered to.

3.3.1 Literature Review

From the onset, the study identified literature necessary for the study. To search for literature, the study used various search engines by typing key words 'public private partnerships' 'hydropower", hydroelectricity' and 'competitiveness of hydropower/energy sector'. By using search engines, the study chose to review articles on electricity dating as from the 1900s to date.

Gore (2009: 368) argues that it is around this time that Uganda's electricity sector became a key issue of concern for the colonial government and administration. In similar thought, it is argued that around 1905, the potential to generate electricity from river Nile was identified by Sir Winston Churchill, an administrator of the British Colonial government (Mawejje, Munyambonera and Bategeka, 2013:127).

Globally, studies of electricity were not limited by time as searches indicated different countries experienced electricity reforms spanning different periods. Literature on PPPs review spanned from the 1990s.This choice of literature selected by this study was guided by scholarly reviews that indicate that PPPs have been popular for the last 3 to 5 decades. According to Hearne (2009: 9-11), it is around the 1990s, a radical shift in transformation of state policies occurred.

It is argued that at this time, governments shifted from welfare policies where the state was directly involved in providing social services and adopted a neoliberalism approach to delivery of social services. Under this new approach, the states withdrew from direct provision of social services and promoted engagement of private sector actors while retaining the mandate of providing policy direction and regulation. It is argued that as

government set out to implement neoliberalism as the mantle of national policy, PPPs started being adopted worldwide with the UK manifesting as the earliest adopter in 1992(Hearne,2009:10-11: Osborne,2000:1: Whitefield,2001:8-11).

The study further benefited from snowballing technique. According to the technique, reaching out to information is enabled by referrals. Based on this opinion the study utilized findings of a study by Marsilio and Gapellaro, (2011: 711) as to identify PPP articles to form a benchmark for selecting the time scope of articles reviewed. Based on this benchmark, the study chose articles published between 2000 to 2007 as base articles in reviewing trends on PPPs.

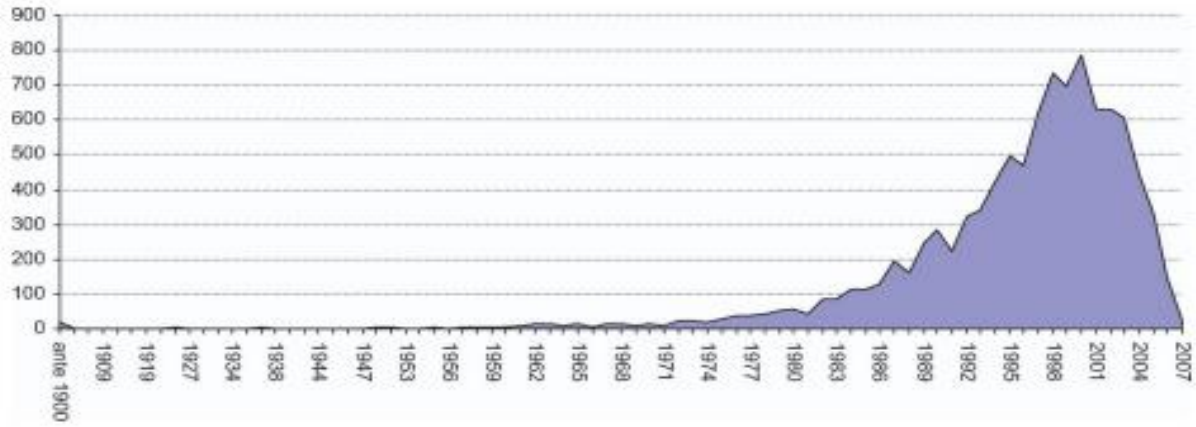

Table 3.1: Frequency distribution of PPP study citation publication dates

Source: **Marsilio and Gapellaro, (2011: 711)**

According to figure 3.1, scholarly literature on PPPs has existed since the 1900s, but became more popular starting in the 1970 with high increase detected from 1992 onwards with a sharp fall between the year 2001 to 2004 and established in the year 2007.Based on this outcome of a study by Marsilio et al. (2011: 771), the study validated its choice for search of articles on PPP studies within the last 3 to 5 decades.

3.4 Empirical Study

The study involved securing insights from voices of participants on the ground. By undertaking empirical studies, fresh voices from the ground can be retrieved to inform the study. This approach is adopted in the study of PPPs as it has been used in other studies on PPPs by Lee, Gasper, Alano and Han (2014:15), Jadhav, Min and Jei (2019),

Biygautane Neeshham and Yahya (2019), Fabre and Straub (2019), Ahmed, Mrsonda and Pretorius (2019), Timbang and Rao (2019), Hyun, Park and Tian (2019).

3.5 Population

A study population refers to the summation of potential participants that constitute a study. It is from a population that a sample is drawn (Mason, 2010: 21: Marshal, 1996: 522-523). The variable that was used in determining the population was purely experienced in PPPs and Hydropower consumption. Overall, the study draws a population of 1,500,000 electricity users. Statistics from the Electricity Regulatory Agency (2018) indicate that Uganda has an estimated 1.5million connected users to the national grid. The population drew stakeholders of the electricity supply chain industrial users, end users of electricity and experts in the energy sector. Engaging experts in a qualitative study is justified (Creswell, 2014: 16-17: Tracy, 2012: 839) as it form part of the credibility pillar of academic studies. Credibility forms a key attribute of research (Tracey, 2012: 839). By choosing a population that constitutes of experts, credibility of the study was guaranteed (Marshall, 1996: np).

3.6 Sample Size

It is argued that selecting a study sample is a critical part in any research project (Marshall, 2010: 522). Sampling is a key component of any study because it usually not practical neither ethical to use the entire population as an entire sample. In view of this argument, the study adopted a sample size.

The objective of a sample size is to secure insights to generalise findings of the study. According to Neumann (2012: 1) & Marshall (1996: 522), an appropriate sample size should be representative of the entire population.This helps to ensure ethics of the study while providing adequate findings that can be relied upon to make decisions that affect society (Marshall, 1996: 524).To determine an appropriate representative sample size to adopt, is also viewed a difficult task (Creswell: 2012: Merriam, et al., 2015: 1-20 and Marshall, 1996: 522-525).

According to Marshall (1996: 522) 'the larger the sample size, the smaller the chance of a sampling error, but since the sampling error is inversely proportional to the square root of the sample size, there is usually little to be gained from studying very large samples'. The optimum sample size depends upon the parameters of the phenomenon under study, for example the rarity of the event or the expected size of differences in the outcome between the intervention and control groups.' Based on this view and limits of expertise on PPPs in Uganda, 33 participants were selected to constitute the sample size. The selection of sample size was in conformity with Goskell (2000: np) who argues that sampling in qualitative research should be guided by the nature of the topic and at times by resources pool. In line with this view, the study judgmentally and purposively selected study participants based on the specific knowledge and experience of PPPs as either regulators, implementers, contractors, policy makers, users of PPPs and hydroelectricity. Other participants were selected because they were either lecturers or consultants in the respective area of study. Scholars that have adequately research on the appropriateness of sample size when undertaking qualitative studies further support this view.

While the study targeted 33 respondents, 31 (thirty one) participants representing 93% of the study sample size were involved in the study. At 31 respondents, the experienced both data and thematic saturation, as voices of participants indicated no emerging trends neither new data. When faced with such situation, it is recommended that the study scales down on the number of respondents under the study (Green and Thorogood, 2004: np: Green and Thorogood, 2018:22: O'reilly and Parker, 2013:190-197).This approach of stopping the journey too early in collecting data is validated by the view that qualitative inquiry is more to do with richness of data rather than how adequacy of the numbers of the sample size reached (Marshal,1996: 522-526: Kuzel, 1992:31-44).

3.7 Sampling Techniques

Sharma (2018:748) argues that sampling should take into account critical issues when narrowing from a population to sample size.

To arrive at an appropriate sample sampling techniques should be deployed. Cochran (2007:2: Sharma,2017:748) defines sampling techniques as 'procedures employed by a researcher to systematically select a relatively smaller number of representative items or individuals (a subset) from a pre-defined population to serve as subjects (data source) for observation or experimentation as per objectives of his or her study.' This type of research design calls for a comprehensive and exhaustive analysis of a single case. Stakes (1995) observes, case study is concerned with the complexity and particular nature of the case in question (Cited in Bryman, 2008: 52). Commonly, a case study is taken as a study of a single location, community or organization. Hall, Motte and Davies (1994) also define a case study a 'evidence' on the ground that field work was undertaken at a single location, Bryman, (2008:53) Thus, a case here in quantitative research is 'representative or typical case', exemplifying a broader category to which it belongs to providing a suitable context for certain research questions in line with this view the study adopted sampling techniques in determining sample size of population.

3.7.1 Critical Case Sampling

Yin (2017: 2) defines a case study as a section of the society that informs a study of a given phenomenon. Commonly, a case study is taken as a study of a single location, community or organization. It is common to associate case study with qualitative research (Yin, 2017: 1-5). A case study may be associated with both quantitative and qualitative studies. In addition, Bryman (2008:165-200) tends to suggest that by narrowing to a case study and participants in such a case study, enriching information can be secured compared to considering a big spectrum of context and huge number.
When using case study approach the researchers aim at undertaking a comprehensive empirical analysis of a phenomenon. A single case study or multiple case studies may be chosen to constitute an in-depth study. It is argued that selecting cases to constitute any given study needs to be guided by some kind of systematic procedure (Hetel et al., 2017: 309-335: Viola, 2018:2).

According to Yin, (2017:4) case studies should be adequate to form a generalization of findings for the study (Viola, 2018: 2). Sykes et al., (2018: 231), Cochrane (2017:2) and Curtis, Smith, Washburn, Gesler (200:1008-1009) and Patton (1990:1). It is also argued

that for a case study to be selected to represent a big phenomenon, it is important that such case studies possess e some criticality or deviance or uniqueness in them to form a phenomenal study (Patton, 1990:1) and Russell and Gregory (2009:1-6). Accordingly, Karuma and Bujagali Dam were selected as unique case studies to inform the study. Karuma Dam was selected, as it is the biggest hydropower dam currently being acquired under traditional procurement framework in Uganda's history. The Dam is expected to deliver 600mw of installed capacity on the national grid (ERA, 2017). Bujagali Hydro Power Dam was selected since it is Uganda's biggest hydropower dam acquired under a PPP arrangement. The dam is located in Jinja, eastern Uganda with installed capacity of 250mw. It is further argued that when undertaking case study analysis documents (letters, agendas, progress reports), archival records (Service records, organizational charts, budgets etc.) Interviews (typically open-ended, but also focused, structured and semi structured interviews are adopted in collection of data.

3.8 Sampling within the case studies

Once the selection of case study was completed, the study chose sampling strategies to identify and select participants that participated in the data collection process to adopt within the case study. These included: purposive, and snow ball sampling. The sampling strategies selected are discussed herein.

3.8.1 Purposive sampling

Purposive sampling is defined as a strategy that involves categorisation of a population into strata (Sharma, 2018:749-752). Sharma (2018:749-752) defines strata as a part of a population that shares similar characteristics. In selection of participants to be interviewed or engage in a focus group discussion, were selected based on on their technical expertise in PPPs, mandate of organisation in the hydropower chain and consumption of hydropower, or representative of body that was a key stakeholder in either procurement, PPPs and electricity. Based on this background, the study selected study participants from the Ministry of Finance Planning and Economic Development, Public Procurement and Disposal Authority (PPDA) ,PPP Unit , Ministry of Energy and Mineral Resources Development, Uganda Electricity Generation Company Limited (UEGCL),Electricity Regulatory Authority (ERA), Rural Electrification Authority (REA) and

Uganda Electricity Distribution Company Limited (UEDCL), members of the Private Sector Foundation of Uganda (PSFU) ,members of Uganda Manufacturers Association (UMA). Domestic consumers of electricity, PPP scholars and Procurement professionals and while others in practice were selected as stakeholders of Bujagali HPP, Karuma HPP and UMEME Company Limited.

By identifying and selecting participants with characteristics of any given sample, the study is able to eliminate or reduce a potential for bias in selecting participants of any given study. The selection of study participants is undertaken in a random mode but emphasis is made to ensure some level of stratification in order to avoid missing diversity in all strata. The sampling procedure is justified as it safeguards missed data and variance of data from participants. Since participants possess similar characteristics, missed data can be collected and corrected by other participants in the strata being targeted for responses. This view is supported Sharma (2018: 749-752). Earlier studies in health surveys and uptake of mobile telecommunications studies have adopted purposive sampling on similar grounds (Othman et al.,2018:np, Begley et al.,2018: Chimeddamba et al.,2015:112, Yoder et al.,2016:48, Danesher et al.,2018:5, Ware at al.,2018:5,Kim et al.,2018:578-85).Based on this justification participants were selected based on their experience in the sector and or whether they were users of electricity.

3.8.2 Snow Ball Sampling

Snowball sampling has been a popular concept in research disciplines such as sociology and statistics, Sharma (2018: 749-752). The technique is further known as chain sampling, chain-referral sampling, Sharma (2018: 749-752). It is a non-probability sampling technique where existing study participants recruit subjects from among their peers, friends or communities.

By using the snow balling technique, the study referred to engaged respondents that were not initially targeted by the study. A representative from PERD, an organisation that was given the mandate of privatisation and divestiture of government enterprises alongside members of the Uganda National Renewable Energy and Energy Efficiency Alliance (UNREEEA) is an umbrella organization of six member associations: among

which include Uganda Hydro Power Association. These referrals were interviewed as well. Studies undertaken by Boa et al., (2018:47), Rao et al., (2018:4), Lircher et al., (2018:374-388), Alfaro et al., (2018:3743-388), Lelubre et al., (2018:668-673) and Hove et al., (2018:18-23) have adopted the snowballing concept. By including snowballs, the study becomes more enriching and facts that would have been missed out are discovered and included in the study.

3.9 Data Collection Techniques

To collect data, the study deployed data collection techniques. According to Mohanty, (2017:135) data collection techniques are defined as 'methods for eliciting information from the respondents.' It is argued that techniques have and continue to be referred to as 'tools of data collection'. Data collections tools enable the study to retrieve data from participants in an organised approach. On the other hand, collecting data in an organised approach is critiqued for failure to capture some information that may not fit in an organised or structured tool.

In undertaking this study, the following tools or techniques were used in collecting data.

3.9.1 Interviews

The study adopted interviews as one of the primary methods of data collection. Interviews are used to elicit facts and knowledge about the phenomenon under investigation using a series of interview questions (Mojitahed, 2014:87). It is further argued that either telephone or face-to-face (Polit and Beck, 2010:1451-1458), can hold interviews. While these options exist, the study adopted face-to-face interviews with participants of the study as the primary means of data collection.

While interviewing can be enabled by structured and semi structured interviews, the study adopted semi structured interviews to elicit views about PPPs and competitiveness of the hydroelectricity sub sector in Uganda. According to Green et al., 2018:3 interviews are recommended when conducting qualitative studies as they promote active listening and digging deep into what would have been left out while enabling learning by the investigator.

This interview technique was systematically used. According to Irving (2005:3-4) interviews are aimed at listening to lived (Menan, 1990) experiences of people and the meaning derived from that experience. Interviewing technique provide an opportunity to listen to deeper voices using semi structured interview guide.

Stage 1: To generate an interview, the investigation involved review of literature to gain an understanding of PPPs and competitiveness of hydropower power from an international and local perspective.

Stage 2: The stage involved review of other similar studies and designing bio data questions from a benchmark of such similar studies.

Stage 3: The stage involved using insights reviewed in literature in designing questions that constituted the interview.

Stage 4: Having developed the interview guide, the investigation set out to pre-test the interview guide. Hamilton (2017: 21-34) notes that by pretesting interview guides the study is able to assess whether the questions are well understood and interpreted.

Pretesting provides opportunity to make improvements in the quality of interview guide design, to increase acceptability of the guide, validity and confirm the method of administering the guide. Validity was confirmed by ensuring that truth-value, consistency was achieved during interviews. This view is supported by (Noble et al., 2015:4: Slevin, 2002, 79-197).

Participants who responded to the study's invitation for an interview were given the opportunity to identify convenient times and places of their choice for the interviews. This was aimed at maximising comfort of participants during the interviews. To avoid upset, the investigator and team ensured strict compliance to the times scheduled for the interviews. While either the study had, a choice to adopt structured or semi structured interviews, the study opted to adopt semi-structured interviews. The choice of semi-structured interviews was informed by the value of diverse and stretched opinions when interviewees were given the freedom to share their experiences and knowledge with utmost comfort.

Semi structured interviews provide opportunity for the investigation to access snowballed literature. Before the conversation set out, the investigation provided consent forms that revealed that maximum confidentiality should be maintained for issues in the conversation. This helped to rein force the purpose of the study and helped to build trust among interviewees. In line with previous studies this approach is recommended (Ashton, 2014:27: Kallio et al., (2016:2954-2965): Opdenakker, (2016:1-4) and Murphy et al. (2010: 62-67).

The interviews held with participants were aimed at gaining deeper insights from the participants of this study. Specifically, by using face to face interviews the study was able to capture the tone of messages through observing movements, pace of speaking, and emotions. This provided an enriching experience in capturing raw data from participants on PPPs and competitiveness aspects of the hydropower sector in Uganda.

Overall, 30 (thirty) participants were interviewed and engaged in a focus group discussion. Of the thirty (30) participants, seventeen (17) participants representing fifty six (56) % were interviewed using face to face interviews, while 13 (thirteen) participants representing forty-four (44) % were engaged in the focus group discussion.

Table 3.2: Categorization and number of study participants interviewed

S/N	Nature of Respondents	Justification for interview selection	Nature of sampling adopted	Number of respondents interviewed
A.	Ministry of Energy, Natural Resources and Mineral Development	In charge of energy policy making	Purposive sampling	1
B.	Ministry of Finance, Planning and Economic	In charge of PPP Policy implementation	Purposive sampling	1

	Development(MFPED)			
C.	Private Sector Foundation of Uganda (PSFU)	Bulk users of hydropower	Purposive sampling	1
D.	Uganda Rural Electrification Agency	In charge of hydropower extension across the country	Purposive sampling	1
E.	Uganda Electricity Generation Company Limited (UEGCL)	Issue licenses for hydro power generation, involved in providing guarantee for supply through power purchase agreements(PPAs) and contracting authority for Bujagali Dam Project	Purposive sampling	3
F.	Uganda Electricity Distribution Company Limited (UEDCL)	Possess mandate for bulk electricity distribution	Purposive sampling	1
G.	Uganda Electricity Transmission Company Limited (UETCL)	Possess mandate for bulk electricity distribution	Purposive sampling	1
H.	Public Procurement & Disposal Authority (PPDA)	Regulator for Public Procurement that is involved in PPP acquisition and key stakeholder in Karuma Dam	Purposive sampling	1
I.	Electricity Regulatory Authority(ERA)	a government agency that regulates, licenses, and supervises the generation, transmission, distribution,	Purposive sampling	1

		sale, export, and importation of electrical energy in Uganda, the third-largest economy in the East African Community.		
J.	Hydropower users	Consumers of hydropower	Purposive sampling	5
K.	Public Private Partnerships Unit	Coordinate PPPs in Uganda	Purposive sampling	1
L.	Uganda Hydro Power Association	Advocacy for competitiveness of hydro power	Purposive sampling	1
M.	UNREEA	Advocacy for the entire energy sector	Purposive sampling	1
N.	Public Private Partnerships Unit	In charge of overseeing PPPs in Uganda	Purposive sampling	1
O.	Public Enterprises Restructuring &. Divestiture (*PERD*)	Privatization	Snow Ball Sampling	1
P.	Karuma Dam Contractor	EPC Contractor at Karuma Dam	Purposive	1
Q.	Bujagali Energy Limited	SPV for Bujagali Dam	Purposive	1
R.	Members of Uganda manufacturers Association	Utilise hydropower	Purposive	2
S.	Institute of Procurement Professionals of Uganda (IPPU)	Knowledge on procurement and PPPs	Purposive sampling	1

T.	Lecturers on procurement, energy and urbanisation and electricity	Knowledge on use of electricity	Purposive sampling	4
U.	President's Office	PPPs and Traditional Procurement perceptions on service delivery	Purposive sampling	1
Total				31

Source: **Principal Investigator (2018)**

Table 3.2, provides a description of participants that provided views in this study. While the rest of the interviewees were targeted, respondents from the Public enterprises & Divestiture (PERD) were engaged based on a referral basis. This approach was adopted in line with studies Abdelhakim, Jones, Redmond, Hewedi, and Seaman (2019: 151-157). Other simialr studies by Osei-Kyei, Chan, Yu, Chen, and Dansoh, 2019(185-195).

3.9.2 Gender Description of Participants

Seven (7) of out thirty one (31) participants interviewed were female while 23(participants) representing seventy-seven (77) % of overall sum of participants constituted the conversations under this study. In the focus group, six (6) female participants representing 23% were involved in sharing views on traditional procurement, PPPs and their role in improving competiveness of the hydropower subsector. On the other hand, while organisations were requested to nominate staff to represent staff to engage with the study through interviews, only 2 (one) female participant representing 6% out of 24 participants that represents ninety five (95)% was nominated to represent respective organisations for face to face interviews during the study. This statistical conclusion points to a potential for limited knowledge and absence of gender mainstreaming in the study and practice of PPPs in Uganda.

3.9.3 Response rate

Overall the study sought views from 31 (thirty one) out of targeted 33(thirty-three) participants. This represents approximately 93 (ninety-three) % percentage response rate. Studies undertaken by Barut & Holom (2008:1139-1160) response rates for individual study may yield a an acceptable response rate of 52.7%. By acheiveing a rate higher that the vaerge rate,the study met minimum requirements for response rates.

3.9.2 Focus Group Discussion

The focus group refers the practice that involves undertaking multiple interviews undertaken at the same time with participants of same agenda and interests (Berg et al., 2004: 3-6 & Nicola, 2012: np). Scholars on PPPs and Hydropower including lecturers and consultants were merged in a conference hall and were engaged in a conversation. A moderator was selected to moderate the discussion. The choice of the moderator was informed by a referral from a renowned journalist in the city.The background of the moderator and the eloquence trait of business journalism coupled with a debriefing from the principal investigator, enabled the moderator to ask questions that stretched the conversation. According to Patton, McKegg, and Wehipeihana (2015: 1-25) the choice of moderator should be based on experience, knowledge and insights. This approach enabled the study to capture diverse insights on traditional procurement, PPPs and competitiveness of the hydroelectricity subsector. Upon recruitment of the moderator, a briefing on the topic of discussion was undertaken. This was aimed at building capacity of the moderator to dialogue with respondents on concept of PPPs and competitiveness of hydropower.

Using the focus group, individuals were requested in their own capacity to attend to a discussion with a predetermined date and theme: PPPs and their role in improving competiveness of the hydroelectricity energy subsector in Uganda. The focus group discussion is justified for this study and the PPPs under review are a relatively new concept in Uganda coupled by referral. Powell (1996:499-504) and Gibbs (1997:1-8) justifies the adoption of focus group discussion in this context with an argument that FGD are suitable in focus where there exists inadequate knowledge about a subject and

where new elaboration by multiple stakeholders of the subject can result into new hypothesis.

The focus group discussion consisted of 13 members with a mix of experience and knowledge of PPPs and Hydroelectricity power. The discussion involved the use of in-depth group conversation more less a family setting. To engage in such discussion, participants were selected because of their knowledge and experience on PPPs. Participants were either lecturing at university level or management institute where PPPs were being taught or working as consultants on PPPs and Electricity in Uganda. Participants of the focus group discussion were selected on the basis that they were aged between 35 to 50 years of age. They were also consumers of hydroelectricity.

The selection provided mutual diversity that was necessary for successful discussion. Such characteristics enabled the study participants to talk comfortable with the interviewer and the moderator.

By engaging the moderator of the discussion, the investigator was able to manage bias and was able to capture views of the focus group discussion.
The focus group discussion involved PPP Scholars, PPP Students, Procurement Specialists and Scholars and an energy specialist. A business journalist who have been briefed on the study, PPPs in Uganda and their applicability in Uganda hydroelectricity sector moderated the discussion.

3.9.4 Documents Review

Several documents were reviewed in this study. Documents were reviewed to guide the process of development of questions that were used to retrieve insights on PPPs and hydropower. The choice of documents to be reviewed was based on industry expert opinion and snowballing technique. Using the snowball technique, the investigator reviewed other previously non-targeted documents from references from initially targeted documents.

The documents broadly included Acts, Policies, Newsletters by Electricity Supply chain stakeholders posted on their either websites; social media page, or update releases in newspapers and newspaper articles on PPPs and Hydropower. The review of documents was critical in providing some opinions that were missing in the scholarly literature reviewed in chapters 2 and 3. A checklist was initially developed to provide scope of the documents to be reviewed.

3.10 Quality Management

Several measures were undertaken ensure quality of the study. Morrow (2005: 250) argues that the quality dimensions in undertaking inquiries in qualitative context should focus on, credibility validity, trustworthiness or rigor.

3.10.1 Strategies to enhance quality of study

The quality of qualitative research has overtime been challenged. It is argued that challenge of the design is skewed towards, lack of accurate metrics, limited scientific methodology and methods (Green et al., 2018: np, Hammersly et al., 2018:9-22, Denzin et al.,2018:1-138, Alvenson, et al.,2017:2-3). This approach is used arrive to conclusion on a given phenomenon using their experience (Nicola, 2012: np). To enhance quality of this qualitative study, several concerns were addressed.

Based on the paradigm, selected participants in the hydro electricity supply chain, scholars and PPP experts, Procurement professionals and endusers of electricity informed this study. Interviews, focus group discussion and documents review were adopted to retrieve insights on Public Private Partnerships and their role in improving competitiveness of the hydropower sector. According to Nicola et al. (2012:1), this approach is acceptable and recommended.

3.10.2 Data Analysis Strategy

Data analysis was guided by the evaluation objectives, which identify domains and topics that were investigated. This approach was guided by the work of Thomas (2006: 1). Data analysis involved documenting a range of issues that exist in describing the

phenomena of PPPs and their role in improving competitiveness of the hydro energy subsector. This approach is recommended by Lofland (1971: 13). The analysis was carried out through multiple readings and interpretations of the raw data: this was followed by analysis of data using a range of approaches. These included: a review of literature shows conflicting opinions and unsolved issues regarding meaning and use of concepts, procedures and interpretation. The analysis was extended by undertaking thematic and content analysis.

3.10.3 Editing of Data

Text and voice data collected from interviews and focus group discussion was edited. Editing involved analysis of voices recorded in ink and audio. This was aimed at ensuring consistency, completeness and eligibility of data.

To ensure consistency, interview guide, scripts, and audio recordings were edited systematically from the first questions asked to the last question in a systematic way. This was aimed at analyzing patterns of data. Completeness was safeguarded by revalidation of data through adopting a hierarchical data editing approach. According to Dyer et al., (2018: 352) safeguards in editing hierarchical data must be put in place when editing data. The study sought to achieve this hierarchy by deploying two research assistants in editing data at two tiers of editing where each of the research assistants edited data after each other. Where variances arose, the principal investigator provided yet another tier of edition by crosschecking and reconciling varying data texts.

This was aimed at ensuring completeness of data extracted text and audio data from interviews and focus group conversation. Such approaches were adopted other studies (Snow et al.,2012:352, Pinarbasi et al.,2012:831: Pinarbasi et al.,2013: 243: Gilbert et al.,2016:175, Aoki et al.,2018:119). To ensure eligibility of data, we adopted the inclusion and exclusion criteria. Lunny et al (2018:231) support this view. To ensure eligibility only statements in English and in non-political language were included while some political statements in support or anti-government were excluded from the editions.

3.10.4 Data Entry, Memos and Coding of Data

XZhang et al. (2018: 325) defines coding as a way of representing data using symbols. Based on this view data was edited and coded. The process of coding involves aggregating the text or visual data into smaller categories of information, seeking evidence for the code from different databases being used in a study, and then assigning a label to a code (Creswell, 2013:184). Data was also condensed into memos as vast amounts of data may be difficult to code and later analyze (Mathew and Michael, 1994:45). Some data that was found not to be useful was discarded. This is acceptable and endorsed by Wolcott (1994: 53). Alphanumerical codes were developed for data with similar characteristics. Data on PPPs was coded using Ps and numerals such a 001. These alpha and numeric codes were combined to form one single code for instance P001 for the initial responses on PPPs and codes starting with E001 were allocated to uses on hydropower. Editing data of the study were recorded in pseudos using codes. This was done to avoid harming participant identities based on responses while maintaining meaning (Uthayakumar et al., 2018:3).

3.10.5 Thematic Analysis

The study synthesized data using thematic analysis. Braun and Clarke (2006:77-101) argue that thematic analysis is a systematic approach used in analyzing data with the objective of understanding patterns forming common trends when undertaking qualitative inquiry. Barun, Clarke, Hayfield and Terry (2019:843-860) also define thematic analysis as the process of extracting meaning from data collected from conversations with study participants. This approach was recommended by Mcleod (2001:2) who argues that the thematic approach provides a better understanding of people's everyday experience of reality, in detail, to understand the phenomena in question.

In extension of such views, Braun and Clarke (2006:6) assert that thematic analysis is concerned with identifying, analyzing and reporting themes as patterns within data. Such analysis is arguably concerned with aggregating responses according to themes derived from research questions. A survey of literature reveals that thematic analysis has been adopted in studies associated with PPPs and yielded interesting results.

For instance studies Nair, Philip, Varma and Rakesh (2019:160), Palco,Park,Kim and Rho (2019:205-218), Oparo and Rouse (2019:192-219), Biygautane, Neesham and Yahya (2019:192-219), Solheim-Kile and Laedre (2019:1-17), Verweji and Gerrits (2015:189-68),Hossain, Guest and Smith (2019:46-68) and Ahmed, Mrsonda and Pretorius (2019) have used thematic studies on PPPs.

Based on such experiences the study-organized data collected into themes by identifying common words from statements. To identify common words, the study summarized statements, listened repeatedly to recordings of the investigation and focused on re reading notes summarized. By undertaking such actions, the study sought to not only extract common messages but also get to the depth of the meaning of the identified common messages. Based on this depth of nalays, unintended probing questions and ideas aimed at improving not only PPPs performance but also traditional procurement in the context of improving competitiveness of hydropower projects that kept emerging from data. While this appeared as a new invention, studies by Aronson (1995:1-5) reveals that such trends of being exposed to some unknown ideas through such synthesis is deemed to happen. Conclusively, the study was able to categorize responses under the following themes: meaning of traditional procurement approach and PPPs in public service delivery and more so to hydropower sub sector: PPP models implemented in Uganda hydroelectricity sub sector: challenges faced in implementing Karuma Power Dam and perceptions on how it will support improving competitiveness of Uganda's hydropower sub sector. The study analyzed the challenges faced in implementing Karuma Power Dam PPP.

The study explored lessons learnt to improve PPPs competitiveness of Uganda's hydroelectricity sub sector and analysis of the most suitable PPPs for improving competitiveness of Uganda's hydro power sub sector will be done.

3.10.6 Content Analysis

The study adopted content and discourse analysis to analyze data collected from voices of the study participants. According to Thorne (2000:68-70) content and discourse analysis involves collection of data from experiences of study participants and extracting meaning to understand any given phenomena. This view is upheld by Taylor (2001:39), Braun, Clarke, Hayfield and Terry (2019:843-860), Lim, Wynaden and Heslop (2019:237-246).

In the literature, unit of analysis refers to a great variety of objects of study, for example, a person, a program, an organization, a classroom or a clinic (Graneheim and Lundman, 2004:2). The study classified a unit of analysis as an organization. The study participants as cited in Table 4.1, for example Ministries, Authorities, Foundation, Procurement Professionals, and Uganda Manufacturer's Association were classified secondary units of analysis while the case studies of Karuma and Bujagali HPPs were adopted as the primary units of analysis. The voices of respondents under stratified respective unit constituted the content that was then subjected to analysis.
Constant comparison of words and frequency is undertaken to retrieve popular statements from voices of study respondents. The approach was initially promoted by Glaser (1965:246-444) and continues to manifest popular in other studies that promote it (Dye, Schatz, Rosenberg and Coleman, 2000:1-10: Boeije, 2002: 391-409: Leach and Onwuegbuzie, 2007:557).

While other have supported the view, other scholar have gone ahead to adopt constant comparison in undertaking qualitative analysis (Lim, E., Wynaden, Heslop, 2019:237-24: van Egmond, Wakkee, Droger, Bastians, van Rengen, de Roos,Nijsten, and Lugtenberg,2019:122-129:Gopinathan, Watts, Lefebvre, Cheung, Hoffman, and Røttingen,2019:175-189).

Wildman, Moffatt, Steer, Laing, Penn, and O'Brien (2019:98) Huang and Fang(2019:27),Gould,Hicks,Hopwood,Kenardy, Krivonos,Warren and Ponsford, (2019:376-394) Rodriguez,Bain,Hux, and Towns (2019:175-186) suport this view.

By analyzing views of participants and comparing them with existing literature standard concepts in the context of procurement, PPPs, competitiveness and electricity, the study was able to deduct comprehensive views from study participants.

3.10.7 Analysis of Documents

According to Galvin, et al. (0271:575) document analysis is about the method of identifying voices in documents. It is about analysing language expression from documents to inform context analysis within themes.

Document analysis enhanced the empirical investigation on PPPs and implications for improving competitiveness of the Hydroelectricity subsector in Uganda. Messages from documents were used to close and strengthen arguments by participants. This provided a triangulation experience for the study as data contained in themes and content was also compared to what was contained in publications and newspaper works before conclusions were drawn from the fresh voices of the study and silent voices contained in the documents. This helped to enhance the credibility of findings. All voices were considered as relevant to the study on PPPs and its role in improving competiveness of the hydroelectricity energy subsector.

3.11 Ethical Considerations

Like in any other study involving human subjects, the process of collecting and analyzing data, ethical dilemma was likely to be encountered. In line with this view, the study identified ethical considerations that were likely to be found while undertaking the study. According to Nigel, Amanda and Amanda (1998:1) ethical considerations envisaged in undertaking this study included: informed patient consent, coercion of research subjects, confidentiality, privacy, the potential damage or threat to the patient, scientific validity and how the research will benefit society.

The study underwent various stages of ethics clearance. These included North West University Community of Advanced Degrees check, The North Wes University Ethical Clearance, Gulu University Ethics Clearance Committee and now Uganda National Council

for Science and Technology clearance in Uganda. The principal investigator also undertook ethics training. This was aimed at acquiring knowledge on the ethical issues that would need to be identified and how they would be managed in undertaking the study. The training was undertaken with training with Marque University in Australia. The training helped the principal investigator in understanding the scope of research ethics, ethical dilemmas usually encountered in undertaking the study and strategies to manage a diverse range of ethical dilemmas.

While undertaking the investigation, the study was prone to some ethical considerations that were managed. By acknowledging the potential ethical dilemma and developing strategies to manage the respective ethical dilemmas, the study had identified.

3.11.1 Bias and management of bias

The focus group discussion involved some workmates. By moderating a discussion where workmates were involved, bias would settle in the discussion. This exposed the investigator and the study to bias.

To manage this situation and other related biases, the investigator deployed the services of a moderator for the focus group discussion and a moderator for guiding the conversations during the focus group discussion.

Before engraining the third parties to this study, the investigator provided preliminary discussion on PPPs and hydroelectricity sector in Uganda and worldwide trends in the same sector, the legal and regulatory framework and shared some insights on current PPPs projects in the hydroelectricity.

The Investigator provided some resources for personal reading on the subject matter and shared a copy of the proposal approved for this study. The third parties were also briefed about ethical dilemma that may be encountered when dealing with human subjects and how to manage in difficult situations when acting as either a research assistant and or the moderator of the focus group discussion (Patton, et al., 2015:1-25).

The investigator provided some resources for personal reading on the subject matter and shared a copy of the proposal approved for this study. The third parties were also briefed about ethical dilemma that may be encountered when dealing with human subjects and how to manage in difficult situations when acting as either a research assistant and or the moderator of the focus group discussion. A research assistant was recruited to support the study.

The Assistant was offered a one-week long training on the topic and procedure for undertaking this study. Areas of training included a background on Public Private Partnerships and their evolution in adoption in the hydropower sector in Uganda, definitions of competiveness were constituted part of the training. Ethics, ethical dilemma and strategies to manage ethical dilemma, procedure for data collection and how to use data collection instruments and focus group discussion management constituted the training.

In furtherance of instituting safeguards to manage bias, the study also adopted replication. While in some instances the research assistant collected the data, validation exercise was independently in some instances undertaken by the principal investigator. Champless and Hollon (1999:8) who argue that by undertaking independent replication, the study is able to manage bias and gaps in data collection recommend this approach. In instances where the principal investigator undertook the process of data collection, the research assistant in the study then undertook validation of findings.

3.11.2 Authorization to undertake study

The North West University Committee of Advanced Degrees and Ethics Committee authorized the study. Further authorization was sought from the Gulu University Ethics Research Committee (GUREC) and Uganda National Council for Science and Technology (UNSCT) in Uganda.

The study also secured gate passes from various organizations in which the study was undertaken. Securing clearance was part of the requirement for conformity to North West University research guidelines and national laws of Uganda where the data was

collected. Lincoln and Guba (1985:290) assert that credibility, transferability and dependability are important aspects for undertaking qualitative research. To ensure credibility, transferability and dependability, the study will undertake the following:

3.11.3 Credibility

The study held extended engagements with participants of the study. This view is supported by Morrow (2006:252) who argues that by extending conversations with participants of the study, can improve its credibility and by observing emotions of the study participants. Critical observation to emotions of participants was done by noting feedback sessions where participants exhibited strong emotions, by increasing either the volume of voice, or extending discussions and citing of incidents and examples .The study summarized notes in form of memos, interviews and other extracts from the main analysis to respondents that participated in the research. The objective of this practice is to ensure that critical data was not left out of the findings. Lincoln and Guba (1985:314) argues that such practice provides opportunity for participants to indicate their agreement or disagreement with the way in which the researcher has represented them.

3.11.4 Transferability

The study sought to provide a detailed, rich description of the setting studies, so that readers were given sufficient information to be able to judge the applicability of findings to other settings that they know. Lincoln and Guba (1985:314) argue that to ensure transferability, the study should provide a preamble of concepts under review. To ensure transferability, participants of the focus group discussion or interviews were briefed on the concepts of traditional procurement, PPPs and aspects that constitute competitiveness of the hydroelectricity sub sector in Uganda. This was aimed at enabling participants secure an understanding of the context of the study before they provided thoughts on various perspectives about traditional procurement, PPPs and competitiveness of the hydropower subsector in Uganda.

3.11.5 Dependability

To ensure that findings from the study are dependable, the study developed standard instruments such as interview guide, focus group discussion guide and documents check

lists. The instruments were reviewed at five (5) tiers for quality control checks. Initial review was by peers, then the promoter, ethics committee at NWU, Ugandan delegated Ethics Research University and Gulu University. The last tier was the Uganda National Council of Science and Technology, a national research agency with the mandate to authorize undertaking of Masters, PhD and Scientific studies in the country. At all tiers, comments to refine errors were captured and these informed the perfection of the data collection instruments that were finally adopted for this study.

3.11.6 Conformability

When undertaking qualitative studies, the findings should be aligned with the situation or standards that are deemed to be associated with the situation or area or issue under inquiry Marrow (2005: 251-252).This requires that the findings of the study should not be biased or dominated by mere beliefs of the researcher.

This view is promoted by Marrow (2005:252) and Gasson (2004:93). To ensure conformability, the study adopted parallel verification process that involved post interview confirmation of findings with study participants, review of theoretical strands in context, concurrent analysis of data and ensuring that methodology adopted is coherent with other and similar studies. This approach is supported by Morse, Barrett, Mayan, Olson, Spiers (2002:16) that advocate for adoption of similar verification strategies in qualitative research.

On the other hand, the study sought diversity of opinions from multiple stakeholders in the context of public procurement, PPPs and electricity sector. While to a lesser extent some meanings of situations on public procurement, PPPs and competitiveness of hydropower sector varied, through extended interrogation meanings of situations were standardised by the attempts to secure conformability.

3.11.7 Securing Gate Passes

The study underwent various stages of ethics clearance. These included North West University Community of Advanced Degrees check, The North Wes University Ethical Clearance, Gulu University Ethics Clearance Committee and now Uganda National Council

for Science and Technology clearance in Uganda. The principal investigator also undertook online. This online research ethics training was undertaken with Marque University in Australia. Upon successful completion, an online assessment was undertaken and a certificate issued (annexes) on the training to expose the investigator to the scope of ethics in research and strategies to manage a diverse range of ethical dilemmas. While undertaking the investigation, the study was prone to some ethical considerations that were managed. The focus group discussion involved some workmates. By moderating a discussion where workmates were involved, bias would settle in the discussion. This exposed the investigator and the study to bias.

3.11.8 Truthfulness

Trustworthiness was incorporated into the study by making sure that citation of authors for works used in the study was done. Truthfulness was maintained by ensuring that what is recorded that only voices heard are incorporated in the study. Validation of these voices is done by sharing specific findings from voices with study participants that informed this study. Truthfulness was further enhanced by referencing works of previous researchers and publications used during this study. Constant comparison of findings extensively provided truthful findings.

3.12 Chapter Summary

This Chapter provides a historical background of traditional procurement, PPPs and their adoption in public service delivery system. The chapter discussed the problem that guided the study. In the chapter, the study provided a discussion of the objectives, research questions and theoretical statement that guided the study. Largely, the chapter provides an in-depth discussion of the methodology and methods that were adopted for the study. In this section, the Chapter provides extended discussion on why the cited a qualitative case study approach was undertaken and type of instruments that were used, detailing the process that was adopted to collect data. It further discusses the approaches undertaken to transform data collected into findings that inform this study. The chapter concludes with a discussion on ethical process and safeguards that were considered for this study.

CHAPTER4: CHALLENGES FACED AND LESSONS TO IMPROVE PPPS PERFORMANCE, IMPLEMENTING KARUMA AND BUJAGALI HYDRO POWER DAM PROJECTS

4.1 Introduction

This chapter provides a discussion of challenges faced in implementing Hydro Power Projects (HPPs) under traditional procurement and PPP route. Based on empirical and document analytical findings, the chapter relays lessons learnt to improve performance with the objective of improving sustained competitiveness of the hydropower sector.

The study reveals that PPPs can improve competitiveness of hydroelectricity sector. Findings from voices heard in interviews and focus group discussions reveal that PPPs enable countries to increase installed capacities, enable governments to deliver public services much earlier especially when governments are faced with financial constraints to implement high capital-intensive projects like hydropower dams.

However, to some extent participants note that PPPs are only able to offer benefit to the sector only when safeguards for corruption are signaled, understanding of the context of negotiation and up skilling of negotiators knowledge on PPPs critical areas such as finance, procurement, monitoring and evaluations, processes and factors for deriving tariffs or user fees and limiting politics into PPP implementation processes.

4.2 Challenges faced in implementing hydropower dams under traditional procurement route

Findings from the study point to several challenges that have been faced in implementing HPPs using the traditional procurement route.

4.2.1 Political interference

The study identifies political interface as one of the key challenges that are facing procurement process for HPPs. In their responses to challenges on procurement processes for HPPs especially Karuma Dam, political interference manifested most times as number 1 for the 6 sets of interviews and manifested as number 2 challenges in instances where it was not pronounced as number 1 challenge facing PPPs. To support this view, a participant noted,

> "The process selected the best evaluated bidder, but politicians awarded the contract to a bidder who did not even bid for the contract".
>
> Participant No. 13

Participants argue that by hijacking procurement processes, politically influenced projects are likely to become overbilled at construction and that since they are finance by some proportion of the loan, the citizen may end up paying more that they would have paid in tariffs to recover high cost of loan due to an award of a contract to an expensive and wrong bidder.

4.2.2 Misconception on capacity of PPPs

The study finds views that suggest that PPPs were not necessary in the electricity sector as they are deemed to some extent to have underperformed. Some players in the utility sector underscore the adoption of PPPs in the utility sectors. They claim that the vertically integrated sector players have to capacity to deliver especially in areas of distribution and operation and maintenance of dams. This notion was prevalent also among politicians and was prominent in the pint media releases. In such media, there is a view that Eskom an operate and maintain concessionaire at Nalubaale and Kiira HPPs has failed to invest in main tying the infrastructure at the dam, resulting into widening cracks that is reducing the lifespan of the dam. While this analogy points to weaknesses in contract design thereto affecting monitoring and evaluation, the latter points to the possibility of a lack of undertaking a Public Sector Comparator assessment before the concessionaire is brought on board. The absence of a PSC is likely to create an environment where stakeholders are skeptical of the value that PPPs bring into the

electricity sector. This situation silently limits stakeholder cohesion that is required in delivering a competitive electricity sector that serves the interests of citizens.

4.2.3 Corruption

Findings reveal that corruption is a common constant. Participants argue that the initial best-evaluated bidder did not meet the requirements after the initial evaluation process. It is alleged that while in the due diligence exercise it was observed that the alleged winning bidder did not meet the capacity requirement in terms of experience, they were awarded a contract. Through constant comparison, the study validated this assertion by review of a report by IGG (2013:1-8). According to this report, it is asserted that despite evidences that the alleged winning bidder did not meet the requirements after a due diligence exercise, the firm was awarded a contract.

This view is consent with earlier studies in Utilities. According to Kenny & Soreide (2008:2), corruption has stagnated the full liberalization of the utility sector in developing countries. Similarly, some participants allege that there could be some aspect of corruption in the utility sector.

A participant mentions that,

> "at times the winning bidder doesn't win and that at times:
>
> the loosing bidders are more powerful than the winning bidder."
>
> **Participant No.3**

This implies that the best-evaluated bidder chance has at times been hijacked by losing bidders and their associated 'silent' internal and stakeholders.

They argue that when corruption enters a procurement process it becomes hard to achieve value for money for from the project. This is turn leads to an expensive project that may result into higher tariffs as cost recovery option. It is also reveled that managing performance of a concessaire that has won a PPP contract or procurement contract genuinely is difficult. Other participants note that when Bidders win genuinely, the contracting authorities are bond to evidence low participation of bidders in future projects.

4.2.4 Faulty negotiation and renegotiations

There is a feeling that GoU could have got a raw deal at the time of concessions. For instance, a participant notes that Bujagali Dam serves the national grid at a price of 8USD cents while state owned Hydropower dams Nalubale sale power to the national grid at 1.5USD cents. While it is understanding that BEL, the current operator and owner of Bujagali Hydro Power Dam must service costs association with operations and maintenance, pay back loans including factoring in the impact of currency and inflation risks and deliver a return on investment for its equity owners, there is a lingering view that the feed in tariff to the grid of USD8cents is high. In line with this view, participants argue that this alleged high feed in tariff to the grid could be responsible for the relatively high end user tariffs in Uganda. It is also alleged that the earlier treatment of contracts for Bujagali and UMEME as confidential and restricted could have defined some element of lack of transparency on the part of government. It also noted that the high tariffs could be partly responsible for the non-technical losses that utility players suffer. Despite the tariffs being considerably unaffordable, stakeholders contest the need for renegotiations that have occurred in the sector and ended up taking tariffs even higher. Based on these issues, some stakeholders contest the role of PPPs in improving competitiveness in the hydropower sector in Uganda.

4.2.5 Counterpart Funding Delays

Participants also reveal that where counterpart funding is involved, government must ensure that they service their commitment on time. It is argued that in the case of Karuma dam government had to commit 14 to 20% of funding while China Exim bank was to provide 80% of the funding. Findings from interviews reveal that while this was short lived, it influenced negatively the timelines of project completion. While this came out, the impact appears to have been minimal.

4.2.6 Resettlements' Constraints

The study reveals that the dam was associated with the need to resettle communities from the area where the dam construction works were to be undertaken. It is argued that in resettling people, there are two key issues that need to be considered: people in most cases want to be resettled in a communal way to avoid losing social networks. It is

further argued that resettlement should aim at not restoring livelihoods but make livelihoods much better. According to some participants, it is argued that while improving livelihoods was catered for, maintaining social networks may have not been built into the decisions associated with resettlement of communities. It is argued that failure to incorporate such issues into the resettlement plan, may expose similar projects to resistance to relocate by affected communities. This finding is in conformity with earlier views of Dixon, Talbot Le Megoigne (1989, 1:44: Li-Luo and Zhang, 2019:04019002) that argue that resettlement plans must be well planned to avoid change resistance that results into project delays. Akhmetshin & Kovalenko (2019:240) argue that resettlement and compensations are a power issue that requires stakeholder commitment. By failing to appreciate this notion, resettlement may face constraints.

4.2.7 Land Compensation

Unlike in other studies where land speculator hike prices of land in anticipation of public investment projects, participants argue that for the case of Karuma Dam. Participants argued that they were not compensated for their land but only told that they would compensate for what was on the land like crops, earth graves, mango trees (see exhibit 1& 2 in annexes). Despite the project having started in 2012, such compensation has in some instances never been paid or is still under contestation. Probed further on why the values attached to elements on the land were being contested, a participant notes:

> "They price valuation are little and we were not involved determining and understanding the approach used for instance in valuing my mango trees and my neighbors grave yard. A graveyard is an outcome of an expense: I will used more money than UGX 300,000. In my culture to rebury remains of my people, I need new coffins and small ceremony. Otherwise, my gods would be unhappy with me and haunt me forever. At worst, the compensation for the graves would bring bad luck in my life. I would rather forfeit the compensation than tamper with the graves of my people".
>
> **[Participant No.26]**

4.2.8 Environmental Challenges

Participants argue that procurement and implementation of HPPs is associated with environmental vulnerabilities. By delving deeper in the discussion, participants argue that Karuma Dam is situated in a game reserve where nature birds, gorillas, snakes, forest cover, water and snakes thrive. While environmental impact assessments were undertaken, participants argue that recommendations of report were delayed either to be implemented or not implemented at all.

4.2.9 Lapses in Monitoring and Evaluation

The study notes that monitoring and evaluation remains a challenge when implementing contracts for HPPs using traditional procurement route. Participants argue that lapses in monitoring and evaluation resulted into the contractor not deploying the technical staff as agreed in contract and as proposed in the bid submitted.

For instance, "Engineers that were supposed to have been on the team never showed up during contract implementation as the contractor opted to use relatively experienced and cheaper staff."

This is asserted to have resulted into defects that appeared inform of cracks at the dam. "By failing to undertake monitoring, the costs of monitoring and delays usually into missing of initial dates may arise. The President has had to constitute an adhoc committee chaired by former Electoral Commission Chairperson to fast-track project execution of Karuma HPP." It is also asserted that investigations aimed at verifying defects, extent of defects and creative reactive committees to this effect, cost valuable time.

4.3 Challenges faced in Implementing Hydropower Dams under PPP Route

Findings from the study reveal that the process of acquiring HPPs by PPPs has also been characterized by political influence.

The study found some challenges that are faced when acquiring hydropower dams using Public Private Partnerships (PPP) framework. The challenges faced relate to the upstream operations of a hydropower dam projects acquired using PPP framework. Statements such as "Bujagali HPP deal was a raw deal" (The East African newspaper,

2016) from the political leadership negatively impacts on PPP investor confidence and discourages technical public administrators from their focus of retaining a sustainable electricity sector using hybrid options. In table 4.1, the study provides a summary of other challenges faced in implementing Bujagali HPP.

Table 4.1: Challenges faced in PPP Implementation in Bujagali Hydro Power Project

Challenges in implementing Bujagali Hydro Power Project	Focus Group Discussion	Procurement Regulatory Authority	PPP Policy stakeholder	Consumers of Electricity	Member Private Sector Federation	Contractors Perspective	PPP Experts and scholars	Policy Makers of Energy and Mineral Resources Development & Ministry of Finance Planning and Economic Development	Civil Society stakeholder, member of UNREEA
	Breach of procurement rules	Capacity constraint to undertake PPPs	Land acquisition has been another challenge	Corruption and fraud	Cost is high and we may end up paying too much. Of course we shall not shield the cost.	Inconsistency of policy	Government should have adopted PPP to reduce the tax burden on citizens. Instead of getting the	Delays in meeting contracting authority's own roles and responsibilities under contract	Failure to design appropriate livelihood alternatives for communities

	Land acquisition has been another challenge. Its expensive due to prospective and land law grants private 'Mailo' ownership of land		Managing subcontractors is a problem- delayed construction occurred	Prices offered to government buying agencies are higher than open market prices. Value for money is difficult to achieve by such projects	Political influence. 'If systems are left to work the cost perhaps could be low'	High capital costs	loan, a private operator would have been engaged	Power losses remain a challenge due to lack of community policing	Destruction of eco-tourism assets and plan to reallocate endangered species of wildlife
			PPP were timely at the time they came but we lacked skills and it appears the private party was more skilled and was in a position to		Tariffs appear bot to have been set considering competitiveness trends in the region	Lack of adequate demand		PPP are a new phenomenon and we are learning	Tariffs are considered to be high for the rural consumers

			negotiate a better deal than governmen t agencies involved						
	Paying private party for losses incurred deprives the achievement of targets	*Limits of capacity to procure PPPs*	Tariffs are high due to securing of loan in USD but tariffs charged in UGX.	Subsidies for losses		Unfavoura ble land Act making land acquisition difficult		Politics disturbs investor confidence in uptake of PPP investment in the country	Waste of public resources through PPAs

Source: Principal Investigator (2018)

A review of challenges faced in implementation of PPPs reveals that key challenges include land acquisition, pressure from civil society, and week financial muscle by the private sector in Uganda, inadequate guidelines for operationalization of PPPs at the time of PPP implementation. Financing is also considered a constraint. Private players secure financing in more stable currency the USD dollar but charge for electricity produced in local volatile currency (UGX).

4.3.1 High User Tariffs and Initial Connection Costs

Consumers of electricity have faced blackouts some time back around 2006,It is further revealed that the cost of connecting to the grid to provide demand has been considered costly and worse still, staying connected has been expensive for the rural consumers due to inability to pay for the bill. This has resulted into lower demand.

Despite the view that Uganda needs additional electricity, controversy remains on who will consume the power! High tariffs according to civil society stakeholders have contributed to perceived low electricity access in Uganda. UBOS (2014) reveals that Uganda has a population approximated at 40million with electricity access estimated at 23% of the population and 1.4million connections as at 2018 (Uganda Transmission Company Limited Quarterly Report, 2018). Despite this high population, and access levels it is revealed by utility agencies that Uganda has excess power indicating that supply outstrips demand confirm this view. It is revealed that after Uganda's surplus electricity before commissioning of Karuma Dam 600mw and Isimba HPP 183mw, the surplus stood at 384mw as demand stood at 600mw. While are planned attempts to export some of the power and provide free connections to rural households within 90metres from an electricity pole. From the analysis of voices, the study that former may work but latter initiative may not be sustainable as the existing tariffs may still be unaffordable thus delaying the concessaires recoup of investment in prepaid meters. The finding points to exploring sustainable options to reduce electricity tariffs for users.

4.3.2 Old and outdated infrastructure

Good electricity infrastructure is critical for reducing power losses, increasing connections and accidents. However, the study reveals that the major challenges faced in distribution concessionaire has been old and outdated infrastructure. Participants claim that electricity pole and line infrastructure has a lifespan of 15yaers but Uganda operates infrastructure that is as old as her fifty-seven (57) years independence anniversary. Old infrastructure such as poles have fallen during rainy seasons resulting into black outs. Since the distributing and generating PPP concesaires must use this infrastructure, they are argued to have fallen victims for critique of an old and outdated infrastructure that has caused power blackouts in the country.

4.3.3 Currency Risk

It is argued that the cost of financing PPP operations is high. Participants reveal that by producing power in more stable currency (USD) dollars and selling it in local currency (UGX), the cost of financing production is high. Participants also reveal that perhaps this is costs by the tenure of loan and currency fluctuations. In probing deeper, the study reveals that loan tenure is usually shorter than the tenure if government was to secure the money from international financial institutions (IFIs). This view is popular across the PPP Unit, Ministry of Finance, Planning and Economic Development (MFPED), Private Sector Environment, PPP and strategy scholars and PERD.

4.3.4 Demand and Supply Risk

Limited demand; Participants from an energy policy perspective informed the study that in the year 2006, Uganda faced shortfall of electricity supply. It is argued that there was considerable effort made to license independent power producers (IPPs) to bridge the gap. It is further argued that through such initiative, the Government of Uganda was able to attract several IPPs across the country that supply power to the national grid. The study reveals that while effort was to enhance supply side, it appears that supply has overstricken demand. To understand phenomena better, the study revealed the Uganda Census Report, 2014.Findings reveal that despite Uganda having an estimated population of 38 million (UBOS, 2014) as per forecast and at the

time of the study, only 1,400,000 customers are connected to the national grid. This view is line with view of the electricity regulator (ERA, 2018) that asserts that while various hydropower dams have been and being constructed, there is limited effective demand for the power. Rebeiz (2011:419-428) share a similar view, by arguing that BOOT model is exposed to demand risk. This point to the view that despite effort to increase electricity supply, uptake of power generated is still low. This affects competitiveness of the sector, as power is produced and paid for by government in line with Power Purchase Agreements but which a majority of citizens do not benefit from. Consumers that participated hold a different view.They argue that there could some waste as electricity is paid for but never reaches the majority of citizens. This view was popular among consumers, private sector players and civil society.However, policy makers argue that the Bujagali HPP PPP from 2012 enabled GoU to eleimiate subsisdies for power as dam increased supply and provided cost refelective tarrifs in the market.

4.3.5 Land Acquisition, Political Sabotage and Delays in Meeting Obligations

From a policy maker's perspective, land acquisition, political sabotage and delays in meeting government's own obligations are cited as major challenges. Policy makers reveal that PPP projects have been vulnerable to delays have been due to land compensation disputes. The disputes are said to have arisen from a law that gives rights of ownership to land. Other factors responsible for land acquisition challenge that are cited include: speculation, environment and culture. Participants of the study argue that land in some instances has housed graves, eco-tourism assets such as forests, vegetation, rivers and lakes. By constructing dams, participants argue that distortion and destruction of such items has been common. Further it is advanced that when government is in charge of constructing such dams, it is likely to consider alternative mechanism to sustain these assets but where private operators under PPP arrangements are involved, such assets may not matter to them yet they are important to communities that are resident in land acquired for such projects. The state's own failure to provide land, requisite licenses, and play a citizen engagement role are considered as major hurdles to such projects.

4.2.5 Absence of PPP Investment Fund

From the contractors' perspective, the absence of a PPP Fund is constraining PPP operations and could be negatively impacting on end user tariffs. It is argued that elsewhere PPP Funds are established by government to provide finance to PPP investors. The absence of the a PPP Fund, exposes the contracted PPP investor to delays in securing financial closure and high cost of capital characterized by high interest rates and shorter loan tenure from international Institutional lenders and commercial banks. It is argued that this is likely to result into a longer pay back period for the project, higher user fees to accommodate high interest rates and compliance with short contracted loan repayment schedule. Contractors of PPPs also cite land acquisition challenges, perceived sabotage from civil society organizations as major obstacles that exposure their PPP projects to delays and unnecessary cost.

4.3.6 Capacity Constraints

Participants from the public procurement oversight agency reveal that major challenges that have existed is capacity to procure PPPs. Findings reveal that the PPP Policy 2010 and PPP Act 2014 are as new as the PPPs themselves. It is argued that there is limited capacity to procure, negotiate, and manage perhaps at later stage exit PPP is lacking. In similar view, participants assert that some mistakes in the procurement and implementation phases of current PPPs may have over could be due to but this could have been due to lack of technical capacity on use and adoption of PPPs across the country.

Such allegations are said to have prompted administrative reviews resulting into project delays and higher costs of implementing such dams.

Based on a conversation held with participants of a focus group discussion that comprised PPP Scholars, Lecturers and persons in practice of procurement and electricity engineering, several challenges are observed. Participants argue that acquiring hydropower dam projects in Uganda has encountered challenges that have included breach of procurement rules, and land acquisition challenge. Notably, one participant reckoned,

'Uganda's *land comprised of 'Mailo' land where are private individuals own land unlike elsewhere in Rwanda and Tanzania, Speculation has escalated the challenge. For instance, when they speculators get access to government public infrastructural investment plans, they will go and buy land cheaply in speculation and they hike prices when they are selling same pieces of land to government agencies in charge of implementing development plans such as roads, dams, bridges and ICT backbone infrastructure'. Review of the land law should be considered but I don't know how they will do it because they speculators are part of the process that reviews laws in this country.'*

[Participant, Focus Group Discussion, 2018]

Participants further allege that corruption and sabotage has dominated negotiations for such PPP projects. Prompted further, to retrieve evidence participants reveal that despite not having evidence, the public domain including the media have always made mention of similar allegations. This point to the need to explore strategies that aimed at detecting and managing corruption and sabotage in the early stages of PPP adoption.

4.3.7 Geological Surprises

Stakeholders were of the view that when implementing Bujagali HPP, a rock was found below water. It was argued that this might not have been detected at the time of design of the dam. Failure to have identified the dam led to delays and cost escalation of the project during the construction phase. By failing to detect the rock at design, government risked encountering the risk of delayed dam construction.

4.3.8 Limited marketing and public relations

It is largely found out that despite the value that Bujagali HPP has contributed to competiveness of the hydropower and electricity sector, there exists limited unknown about this dams. What is know to a majority of participants are the negative comments such as allegations of collapse, high tariffs, contribution to black outs.

4.4 Lessons Learnt to Improve HPP Projects under Traditional Procurement and PPP Routes

This chapter provides a discussion of summary of gaps. It provides a discussion on lessons learnt to improve PPP performance and competitiveness of the hydroelectricity subsector in Uganda. The areas against which lessons include: legal and regulatory framework, political climate, economic environment, marketing and communications, financial closure, societal impact analysis reforms. Based on findings from the study, several gaps are identified. To close the gaps in procuring and acquiring hydropower dam projects, several lessons can be being learnt to improve competitiveness of the hydroelectricity energy subsector in Uganda.

4.4.1 Legal and Regulatory Framework

The legal and regulatory framework is important for successful implementation of hydropower dam acquisition process whether implemented through procurement or PPP. Findings from the study reveal that an adequate framework will constitute of PPP Policy, Procurement Policy, PPP Act, Public Procurement Act, Whistleblowing Act, Anti-Corruption Act, Public Finance Act, and Arbitration Act. Participants of the study believe that a robust framework that is cross-listed in each document helps to promote investor confidence and provides clarity on roles and responsibilities of stakeholders in PPP arrangement. This in turn helps to avoid delays and unnecessary costs that affect output of service, user fees or tariffs in implementing PPPs in the hydro sector and other sectors. A well-elaborated framework is crucial in the electricity sector. The framework provides legal mandate from political statements that are likely to reduce PPP investor confidence. The study reveals that beyond the national legal and regulatory framework for Ministries Departments and Agencies (MDAs), ERA has been able to design and oversee custom-made procurement and disposal guidelines for electricity IPPs (ERA, 2017).

4.4.2 Political Climate

A good and stable political climate is important and recommended. An environment with a potential to forecast transition of power of the President to another and predictability of the aftermath is vital. Findings from participants of the study note

that PPPs in hydropower sector such as BOOT and BOT last between 10 to 30 years now. By virtue of such tenure and payback period, investors wish to engage in an environment that enables predictability of power transition from one President to another and the aftermath of the transition. An environment that does not provide such characteristic is deemed high risk and unattractive to PPP investors. Earlier studies by Flinders (2004:214-239) in the UK also point to good political climate and support of government as critical for the adoption of PPPs.

4.4.3 Power Pricing and Economic Environment

Government intervention through PPP will moderate the scaling up in the tariff that the sector requires to provide affordable and adequate electricity. Power pricing that guarantees an attractive rate of return to investors adjusted for industry risk and security of investment and input are two important considerations in private sector investment in the industry. The new multi-year tariff scheme, which is yet to be operational, is an important step in bringing new capital to the electricity industry. Effective implementation of the core reforms in the Electricity Power Sector Reform Act would ensure industry operation based on global best practices from the petroleum products perspective, the plan of the government.

4.4.4 Marketing and Communications

While PPPs are acknowledged as a key tool in fast tracking growth, limits, appear to exist on the concept of PPPs from the private sector view. Awareness of PPPs opportunities through various approaches can support stakeholders to have knowledge of PPP solicited and unsolicited opportunity and grasp the, policy and Act tend to generated increased and sustainable uptake of PPP investments (Republic of Uganda PPP Act, 2015: Mistarihi,2013:1-3) While PPPs are communicated in the National Vision 2040 (Uganda National Planning Authority, 2014:3: Mistarihi,2013:3). This view is validated in literature by Kabanda (2018:10) that argues implementation of Bujagali Hydropower dams faced lapses in communication with the affected people was evident, delays in resettlement payments and focus on vulnerable people needs was limited.

4.4.5 Financial Closure

Reaching a PPP agreement can be a daunting process but securing financial closure can be more problematic. This is due to complexities that arise on financial structuring. Financial structuring usually takes various forms: equity, debt, bond financing, public finance. Financial closure can take up to 3 years. Delays in securing financial closure requires that governments establish PPP investment Funds. Such funds provide ease of access to finance and better terms in terms of interest rates and tenure of debt(Turley et al.,2013:3 and Semple 2013:3).

4.4.6 Empowerment of Private Sector

Empowering the private sector is key for delivering success of PPPs. Findings reveal that an empowered private sector creates opportunity for inclusive local economic development. However, findings reveal that hydropower dams require investment worth millions of dollars. A review of findings suggest that most Ugandan firms do not have capacity to commit such financial investment and may not invest in venture with payback period of less than 4 years. PPP investments on the contrary require investors willing to invest with returns in 10 to 30 years. By having PPP investors as locals, employment opportunities can be guaranteed for locals.

4.4.7 Citizen/Societal Issues

PPPs are likely to succeed if concerns of society of Project Affected Persons (PAPs), citizens or communities in which they are to be implemented are addressed and where PPPs themselves become citizens in communities where they are operated. Citizenship is acquired by PPPs through incorporation of interests of communities that are likely to be affected by PPP implementation. Findings reveals that PPP implementers need to provide alternative livelihoods to destroyed channels of livelihoods by PPP investment, reinvent eco-tourism and provide residual project assets for the benefit of communities. For example, shelters can be donated to local government administration as schools, while old vehicles can be donated to vocational institutions to be used as learning demonstration assets. It is noted that while compensation was done, it was delayed for up to 7 years and more so that the Project Affected Persons (PAPs) were not resettled in one area. Based on deeper probing, one participant notes.

Will people were resettled, it would be better they are identified land and resettled as a community. Overtime, people develop ties with society they have lived in. They develop networks that are developed over time in their communities. Such networks constitute social capital are built with sacrifice of time and money over time in form of weddings, and other community ceremonies.

Hydropower Consumer in Jinja District (2018)

Intrigued by the view, the study went further to the concept of 'social capital'. Given that the study is an academic research, the study reviewed the Social Capital Theory. In the review, the study finds defines of social capital.

Fukuyama (1994:Dukos,2017:) defines social capital "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition".

In similar view social capital is "set of informal values or norms shared among members of a group that permits them to cooperate with one another" (Fukuyama 1999: 16). According to Gallent (2007) and Fine (2018: 22-23) view social capital as neighbourliness or shunned new comers. Norburtas (2018:120-134) asserts that human beings want a sense of belonging. By resettling persons affected in different places by the construction of Bujagali Hydro Power PPP, the project managers appear to have fractured social capital of the affected persons.

Before exploring PPPs, a revaluation of expertise in house is important. Participants argue that at PPPs investor claim more expertise than what they have and when PPP contracts they source from public administrators. Participants argue that government should first examine why their staff fail to perform in house and manage this challenge,as PPPs in most cases are not the best options.

4.4.8 Monitoring and Evaluation

The study also reveals that monitoring, evaluation of HPPs acquired by either traditional procurement or PPPs is vital for improving competitiveness of any sector. By designing monitoring, and evaluation robust M & E frameworks, managers can be able to identify in time and take appropriate actions. In line with Agency theory, M&E enables detection of opportunistic behaviour in early stages of project execution. Earlier detection of such behaviour can enable managers to design strategies in time to avoid opportunism from occurring. This in turn enables design and implementation of safeguards in time. This lesson is consistent with World Bank (2016:11-13) Stem, Margoluis, Salafsky & Brown (2004:294-216) that ratify this view point and in addition argue that further argues M & E framework beyond being used as a control mechanism, can provide transparency in PPP implementation especially when findings of the M&E are dissemination to stakeholders.

4.5 Chapter Summary

In this chapter the study provided an analysis and discussion of finding relating to challenges faced by traditional and ppp routes for acquiring and managing HPPs. The chapter reveals that while some challenges may affect particular route adopted for hpp acquisition, some similar challenges cut across when acquiring hpps through traditional procurement and ppp routes. By understanding challenges and managing them, the electricity sector can reduce risks which in turn can result into increased installed electricity, triangulation of projects within budget, time and quality scope and ultimately impact on quality and affordability of tariffs set for users of electricity. In this discussion it is further revealed that by knowing the problem we can learn to improve sector actions to improve competitiveness. In the proceeding chapter six, the study provides further dissemination of the findings on existing ppp models implemented in the hydropower sector. the chapter offers a discussion perceived suitable ppps that are required to improve competitiveness of Uganda's hydro power sector.

CHAPTER5: PPPS MODELS IN UGANDAS HYDRO POWER SECTOR

5.1 Introduction

This chapter provides a discussion on PPPs implemented in Uganda's Hydropower subsector. The discussion is relevant in answering research question (v) that sought to provide an answer to the question relating to the most appropriate PPP models necessary for improving competitiveness of the hydro electricity sector. The discussion was based on analysis of findings from participants on the study, from review of literature and documents on the existing PPPs models implemented in Uganda. This ultimately forms the discussion provided in this chapter of the thesis.

5.2 Summary of existing PPPs Model and existing gaps

Most studies on PPPs have focused on PPP Models, Challenges affecting PPPs, Critical success factors for PPPs and PPPs in infrastructure. Others have moderately focused on education, health care service delivery, telecommunications, waste management and transport. While attempts have been made to provide guidance on the adoption of PPPs in the hydroelectricity energy subsector, barriers exist on the studies aimed at providing a starting line for most appropriate PPPs in the hydroelectricity energy subsector. By listening to voices, review of literature of PPPs and series of documents, this study has found some light in answering the question 'what is the most appropriate PPPs models for improving competitiveness of the hydroelectricity subsector. In asking study questions, we probe study participants to reveal PPP models currently being implemented in Uganda in the sector. We further probe to identify existing weaknesses within existing PPP models implemented in the sector as we ask questions on what needs to be improved to close the cited gaps. We also share with our participants some models that have been implemented elsewhere in the hydro energy subsector.

5.3 PPPs Models for implemented in Uganda's hydropower subsector

The study reveals popular models that have been implemented in Uganda's hydropower sector based on documents review, scholarly literature, the identified models that have been popular in the sector. To validate conclusions from such reviews, the study sought to validate these findings from interviews and focus group discussion with the stakeholders in the hydropower sub sector. It is asserted that the cited models have been implemented based on varying reasons as summarized in table 5.1:

Table 5.1: PPP Models implemented in Uganda's hydropower sector

Type Of PPP Model	Nature of activity in the hydropower supply chain	Generation capacity (mw)	Name of dams/project	Factors influencing for choice of model type
Build Own Operate Transfer (BOOT)	Generation	250	Bujagali HPP	Financial constrains to finance the development of dam project: Lack of expertise by government to design and operate
Operate and Maintain(O& M)	Generation	200	Nalubaale Hydro Dam	Government constructions dam but lets out the function of operations and maintenance
		183	Kira Hydro Dam	
Design Build Finance and Operate	Generation	Equal or less than 20mw	WENRECO, AEM-Mpanga,Elgon Hydro uganda Limited,Kabalega Hydro,KCCL,Maji Power Buyoge Ltd,Muvumbe	Private operate designs, constructs, finances and operates the dam either on cost plus incentive contract or sales power to contracting authority at an agreed price that includes profit and costs for the power generated

			Hydro Limited,Hydro U Ltd • Rwimi Hydro • Tibet Hima • and other IPPs spread across the country	
Distribution Management Concession	Distribution	Not applicable	UMEME Uganda Limited	Governement leases indtrustcture to a private party to management and distribute electrcity with targets in areas of effeciency, power extension, reduction of power losses(technical and none technical losses) among others.

Source: **Developed by the researcher (2019)**

The above table 5.1 shows a summary of models that have been implemented in the infrastructural and hydropower power sector. The BOOT PPP has been implemented at Hujagali dam with 250mw-installed capacity. On the other hand, Nalubaale dam 200mw and Kiira 183mw capacity dams have been placed under Operate and maintain PPP with Eskom. The management distribution concession has been operational with a firm called UMEME that is in charge of distributing over 90% of Uganda's power needs while IPPs for generation have predominantly been contracted under Design Finance Build and Operate Transfer concessions. While the study sought to identify PPPs types implemented in the hydropower sector, findings from review of literature, documents and interviews indicate that the discussion of

PPPs for hydropower are broadly categorized as PPPs from infrastructural projects. While few scholars have categorized similar PPPs under the hydropower as a specific sector, the study finds it more appropriate to discuss PPP reviewed for infrastructure and hydropower in the same category since hydropower dams are a form of public infrastructure.

Table 5.2: Popular PPP Model types in Hydropower Projects

S/N	TYPES OF PPPS	MAIN FEATURES	CONDITIONS	BENEFITS OF PPP TYPES	DISADVANTAGES OF PPP TYPES
1	Build Operate Transfer	• Contract with a private sector contractor to design, build and operate a public facility for a defined period, after which the facility is handed back to the public Sector. • The facility is financed by the public sector and remains in public ownership	• Suited to projects that involve a significant operating content. • Particularly suited to water and waste projects	• Transfer of design, construction and • operating risk • Potential to accelerate construction • Risk transfer provides incentive for • adoption of whole life costing approach • Promotes private sector innovation and • Improved value for money.	• Possible conflict between planning and environmental considerations. • Contracts are more complex and tendering process can take longer • Contract management and performance monitoring systems required. • Cost of re-entering the business if operator proves unsatisfactory. • Does not attract private finance and commits public sector to providing long term finance.

		throughout the contract. • Key driver is the transfer of operating risk in addition to design and constructio n risk		• Improved quality of operation and maintenance. • Contracts can be holistic • Government able to focus on core • public sector responsibilities	
2	Design Finance Build and Operate (DFBO)	• Contract with a private party to design, build, operate and finance a facility for defined period, after which the facility	• Suited to projects that involve a significant operating content. • Particularly suited to roads, water and	• As for BOT plus: • Attracts private sector finance: • Attracts debt finance discipline: • Delivers more predictable and • consistent cost	• Possible conflict between planning and environmental considerations. • Contracts can be more complex and tendering process can take longer than for BOT. • Contract management and performance monitoring systems required. • Cost of re-entering the business if operator proves unsatisfactory.

		reverts to the public sector. • The facility is owned by the private sector for the contract period and it recovers costs through public subvention. • Key driver is the utilisation of private finance and transfer of design, construction & operating risk. • Variant forms	waste projects.	profile: • Greater potential for accelerated construction programme: and • Increased risk transfer provides greater incentive for private sector contractor to adopt a whole life costing approach to design	• Funding guarantees may be required. • Change management system required

		involve different combinations of the principle responsibilities			
3	Operate and Manage Concession	As for DFBO except private party • recovers costs from user charges. • Key driver is the service user pays • Principle, utilising private finance, transferring design, construction,	Suited to projects that provide an opportunity for the introduction of user charging. Particularly suited to roads, water (non-domestic) and waste projects	As for DFBO plus: • Facilitates implementation of the Polluter Pays Principal • e: and • Increases level of demand risk transfer and encourages generation of third party revenue.	As for DFBO plus: • May not be politically acceptable • Requires effective management of alternatives / substitutes, e.g. alternative transport routes: • alternative waste disposal options)

		and operating risk.			
4	Build Own Operate Transfer	• Private party builds, finances, operates and transfers ownership after a given period of time • Public Party/Contracting authority provides design	• Government is faced with financial constraints • Government has capacity to undertake design	• Source of finance and technical expertise for operate and maintain aspects	• Errors with design can result into additional costs for government and cause delays.
5	Design Finance Build Operate	• Private party designs finances builds, operates and transfers	• Government transfer most risk to the private operator especially the design	• The private party provides finance	• Currency fluctuations • Short debt tenure

		ownership after a given period of time	and financing risks		

Source: Developed by the researcher (2018**)**

Table 5.2 provides a summary of model(s) that are suitable for improving competitiveness of the hydropower sector in Uganda. A discussion of the model(s) is discussed herein below.

5.3.1 Build Own Operate Transfer (BOOT)

Empirical findings from the study reveal that BOOT has been applied for implementation of Bujagali hydropower dam in Uganda. In the table below, the study provides a summary of the empirical findings relating with the Bujagali BOOT PPP model under implementation.

Table 5.3: Key assumptions for choice of BOOT

	Applicable Stage of PPP model in Hydropower supply Chain	**Roles and Responsibilities of Key PPP Stakeholders**			**Risks associated with recommended PPP model(s)**
		Role of Government	**Role of Contracting party**	**Roles Of Private Party**	**Potential Risks And Mitigation Strategy**
BUILD OWN OPERATE TRANSFER (BOOT)	Generation	Demand generation by signing up of PPAs	Deliver design for project	Design of Hydropower Plant	Environmental
		Create a politically stable environment		Construction of Hydropower plant	Delayed financial closure
		Land acquisition	Guarantee demand under Power Purchase agreement(PPAs)	Financing	EPC associated operational risk
		Turn delays payments into subdued equity in case of Equity PPPs	Provide land and other asset leases	Operate and maintenance Dam	Inflation and Currency risks
		Provide tax subsidies	Monitor and Evaluate	Knowledge	Limited demand for

			performance of Private party	transfer	consumption of hydropower power
		Provide contingent liabilities in case of termination of PPP	Make payments under PPPs on time	Ensure EPC contractor performs obligations in time within quality scope	Equity swapping risks
		Adopt a poli-commercial approach rather than skewed political approach towards PPPs	Secure financial closure	Bear risk brought by EPC contractor and subcontractor	
				Provide guarantees /bonds such as environmental, Maintenance	

Source: **Developed by the researcher Primary Data (2018)**

In table 5.3 above, a summary of proposed BOOT model is summarized. Based on a review scholarly literature, documents review and findings from participants of the study, the BOOT model is recommended as one of the model for PPP implementation.

Based on a documents review, the BOOT model has been adopted and delivered benefits for the hydropower sectors globally and regionally.

Under this model, the private operator performs the following roles, which include: builds, owns, operates, and transfers ownership to the contracting authority at the end of the agreed period. While this period was initially 30 (thirty) years, while validating findings, the study notes that the period was extended to 33 (thirty-three) years. The

model has been adopted successfully in the hydropower sector with success in Uganda. Empirical findings acknowledge the benefit of the Bujagali dam under PPP is an asset to Uganda. To emphasize this view a participant notes:

"Bujagali Dam under BOOT is the best thing that Uganda has ever had"

Participant No .5

This view is consistent with Ullah (2015:195) who acknowledges that by arguing that the Bujagali dam under BOOT has helped to reduce pollution provided relatively cheap energy compared to formerly expensive thermal power and contribution to economic growth. Using constant comparison, the study concurs with the view that BOOT is an appropriate PPP model not only because of the advantages of the model but also positive experiences the model has provided in energy sectors in other countries elsewhere.

Existing studies by Ullah (2015:197-198) point to the view that the BOOT model has been adopted with success at Itaipu Hydropower Complex in Brazil producing 14,000mw, several dams on Amazon river, Bumbuma II Hydropower Project in Sierra Leone with installed capacity of upto 372MW. In Lao, the BOOT model has been adopted at Nam Theun 2 Project with installed capacity of 1,070MW and at Kabel HPP producing 37. 5MW.

It is further argued that by transferring risk to the private sector BOOT model has been popular. Similarly in the study, it is confirmed that India has been able to increase energy access by implementing the BOOT PPP at HPP dams such as Teesta Stage-III Hydro Power Project with capacity of the 1,200 MW among other dams.

The model is further recommended because of the benefits it provides and greater extent of risk allocation. More importantly, the model is justified for adoption in electricity generation since it is a form of private finance initiative. Based on this view, the BOOT model is argued to possess capacity in helping government and countries as whole to reduce their indebtedness since the private operator provides the finance (Ullah, 2015:195).

By providing finance, the model helps to reduce countries debt to gross domestic product (GDP) ratios. In essence, governments rely on private sectors pool of capital other than securing debt to finance public infrastructure projects such as HPPs. On the other hand, the model enables countries to access modern equipment, access to new technology and optimal capacity in utilization of natural resources such as flowing water resources.

Participants argue that with the BOOT model, the contracting authority is able to transfer construction risks, financing, operate and maintenance risks to the SPV but not the design risks that were borne by the government. While it is envisaged that such risks will be transferred when BOOT is adopted, it rarely happens.

A policy maker notes

> *'in the case of Bujagali the model was adopted, but due to politics and bad negotiation, tax payers still pay for losses suffered in the electricity chain upstream'.*

Probed on why reference is made to UMEME, distribution contract and not BOOT, *the participant notes that the to a consumer it doesn't matter the middle activities that occur, but true delivered cost and experience of electricity to consumers*

On whether this is the best model, one respondent believes that the model is good for Uganda since it transfers risk to the private operator. However, the participant was quick to add that when government fails to deliver its responsibilities as per PPP agreements for instance investing in evaluation, and distribution infrastructure. In the absence of this, the private operator will always find ways of recouping the cost from losses suffered due to failure by government to commit to investment plans in the PPPs space in the hydropower sector. This view resonates with agency theory and its assumption of existence of opportunism in relationships. In line with this view, any lapse in performance of roles and responsibilities by any PPP player will always create room for any party to underperform their respective obligations.

From a contracting authority's perspective, BOOT is considered as an appropriate model for hydropower sector.

Participants largely confirm that BOOT model has been implemented in Uganda's hydropower sub sector. They note that the model gives opportunity for government (contracting authority) to transfer construction, operation, and maintenance risks to the private operator. This view is consistent with recognition that the model is appropriate for adoption in hydropower sector by Ullah (2015:196-198), World Bank (2016), Akbiyikli & Eaton (2005:13-15), Gurgun and Touran (2013:1-13). Similarly, BOOT is considered an appropriate model for adoption of in the hydropower sector as it is deemed to provide finance and deliver projects and public services much earlier to government and citizens respectively. This view is consistent with the views of participant's voices in this study and in chorus with Acharya et al (2013:2). By providing public services such as electricity using BOOT PPP model, it is further revealed that the model can empower communities. This is considered evident in Nepal where BOOT model has empowered communities engaging in public service delivery (Acharya et al., 2013:2). However, it is noted from interviews that the model rests design risk with government. As part of the findings, participants reveal that while implementing Bujagali Dam, initial design was faced with 'geological shock'. It is argued that a rock that had not been identified at the time of design was identified during the construction phase. This incident is argued to have caused a delay in construction works due to the need to modify design. It is also revealed that such delays may expose governments to additional costs in form of extended time to deliver the project, blackouts and failed political promises on breach of deadlines for commissioning of projects.

5.3.2 Design Finance Build Operate (DFBO)

The study identified Design Finance Build and Operate (DFBO) yet of the PPP model that is implemented in Uganda's hydropower sub sector. While the term has been used interchangeability in some literature, empirical findings suggests differences exist between BOOT and DFBO. Participants of the study reveal that this approach has been adopted in construction of small dams usually below installed capacity of 20mega watts across the country.

It is also revealed that the private party under this model will apply to undertake feasibility studies, submit studies to the Electricity Regulatory Authority (ERA) for

approval then design the project and secure a licence. Under the model, the private will then sign up a power purchase agreement (PPA) based on due diligence report by the regulator's team.Quite key is that the private operator designs, finances, builds and operates the dam. It is revealed that the PPA contains the price at which the private party will sale power to the national grid.

The study found that the electricity regulator ERA has adopted the DFBO model in increasing generation of hydropower across the country. Mini hydropower dams in most places with running waters have been built using this model. According to Van Der Geest and Ferrer (2013:13) operating capital is provided by user fees or revenue generated from PPAs. The model is considered attractive to private parties and is increasingly taking up most of Uganda's mini hydropower dam projects. This view is consistent with studies by Van Ger Geest et al (2011:13) who argues that suggest that the DFBO model has also been popular among European Union (EU) member states. By implementing the DFBO, participants argue that government has been able to relatively achieve its dream of making electricity more accessible to citizens. Uganda is argued that this added an access of 20MW of installed capacity to the national grid using DFBO.The adoption of the DFBO to increase hydropower in the electricity generation supply chain and other sectors has been adopted in other countries as well. In view of its benefits, participants claim that DFBO model helps to provide financial relief, and transfers design and construction risk since such risks are transferred to the private operator (Ridolfi, 2013:2-3). On the other hand, while the DFBO is attributable to benefits, participants note that model limited to low value capacity dams. In similar view, participants note that the feasibility studies and design of projects is expensive for the private party. At times, despite the investment in feasibility studies, the investment may turn out to deliver low or negative returns.

However, participants note that investment in staff and resources to undertake monitoring and evaluation of performance of multiple DFBO private players can be challenging with constrained budgets and to undertake such activity.

In accordance with agency theory, the absence of strong monitoring and evaluation framework can create room for opportunistic behavior that can result into poor quality of electricity service for citizens. While this challenge may affect negatively electricity reliability, availability, tariffs, it is argued that governments can develop frameworks for control, incorporate fines or appoint new partners if the private party continues to default on performance.

On the other hand, while the model may appear attractive, it is associated with demand risk. Existing literature and empirical evidence revelas that the DFBO model is associated with demand risk. Such risk arises when the private party fails to realize forecasted demand figures. It is argued that demand risk asrises when forecasted demand is not achieved. By not releasing expected demand, the private investor is vulnerable to risk of faliling to not only realise investment costs, repay loans to pooled finance creditors but also expose investors to bankruptcy. According to Van Ger Geest et al. (2011:13) agrees that demand riks is likely to occur with DFBOs but notes that if government provides demand guarantees in form of PPAs, governements can continue to attract private markets to engage in DFBOs.

Despite the risks, the study reveals that the DFBO contributes to competitiveness of the hydropower sector by attracting Independent Power Producers (IPPs) that have increased production of hydropower in Uganda. In line with Sections 30 and 33 of the Uganda's Electricity Act, IPPs have been acquired through unsolicted, solicited bidding process, and contracted under DFBO PPP model. By engaging IPPs the country has evidenced increased access and moderately reliable electiricity to Ugandans.
Partcipants argue that IPP players for instance WenRECO have provided power that has enabled business startups such as hair saloons, milling factories and resatruant in parts of West Nile region in Uganda.

Participants argue that since the private party invests finance in a public service, they assist governments to deliver services to citizens today rather than tomorrow or in the future. It is argued that IPPs that have contributed to power availability in areas such as West Nile, and South Western parts of Uganda.

5.3.3 Operate and Management Concession

In an attempt to delve deeper, the study discovered that the most popular O & M concession is the UMEME concession. According to Mawejje et al., (2013: 215) UMEME was contracted to distribute electricity a function that Uganda Distribution Company Limited (UEDCL) was formerly undertaking. Under such concession, UMEME is required to perform several functions: distribute electricity, make investment to reduce power losses with a contract for 20 years that will be ending in 2024. This view is validated by ERA, 2018: (Kabanda, 2014: 8). In implementing such a concession, UMEME is required to invest, operate and manage distribution of electricity. UMEME is remunerated on a price capped tariff mechanism and charges users that consume electricity in varying classifications. Participants argue that unlike generation PPP that charge cost reflective tariffs that gurantee profitability, distribution concesssions expose investors to high levels of unpredictability as citizens may not be able to pay for the electricity tariffs set. Despite the fact that government will provide contingent liability for guaranteed demand, there is a likelihood of a risk to forego additional revenues due to perceived unafforbale tariffs unless government provides subsidies.

According to views of policy makers, PPP experts, PPPs management concessions in Uganda has been implemented in electricity distribution with UMEME Limited as key concessionaire. It is argued that despite public critique, the concession has enabled the country to reduce power losses by 36%, connect over 1.2 million customers, and train over 12 electrical engineers per year in a sector that experienced technical drought to to migration of engineers to the vibrant telecommunications sector.While concessions of electricity have been critiqued for failure to deliver, in Uganda the Umeme concession is rated at over 80% in terms of meeting targets by the regulator (ERA, 2019). It is also argued that Umeme limited has also been able to float shares on Uganda's stock exchange allowing Ugandans as individuals and the national mandatory formal saving fund, the National Social Security Fund (NSSF) to buy shares. By having NSSF as a shareholder of the the spv, Umeme concession is able to share value in terms of sharing dividends with its shareholders like NSSF who are at the same time end users of electricity.

This practice of shared value by Umeme is consistent with views Porter and Kramer (2019:323-346; Moon, Parc, Yim, and Park, 2011:49-64; Kramer, and Porter, 2011; 62-77; Driver, 2012:421-431; Bosch-Badia, Montllor-Serrats and Tarrazon, 2013:11) who argue that firms should shift from short term view of value creation through profits but extend their approach to sharing their gains with society. By initiating and implementing shared value concepts, firms and in this case spvs are able to reconnect business with society, a connection that is deemed to have been distorted by the emmergence of capitalism while guaranteeing themselves long term survival in the their industry.

Findings from study also reveals that PPPs have been marred with allegations of lack of transparency and corruption,leaving citizens with questions such as ‘’who owns the spv”. This study reveals by floating shares on the stock exchange by Umeme Limited as a spv, the public able to buy shares and know who owns the firm.This view is consistent with World Bank Transparency Initiative and is worth promoting by governements worldwide.

While this was a voluntary initiativve, governments should require in legal and regulatory frameworks for PPP and their negotiations that a certain percentage of shares over a prescribed time of PPP implementation be floated for local investors.

Consistent in satisfactory performance, participants of the study note that the Umeme concession has overtime improved reliability of electricity but tariffs are still deemed expensive.Probed to find out why the tariffs appear to remain a burden, feedback reveals that out of a oulation estimated at 40million citizens, about only 1.5 million customers are connected to the national grid with bulk consumption that is necessary for reducing power tariffs not achieved. It is further argued that the high tarrrfiffs are due to the high cost of borrowing, financing operations with a strong maerican USD dollar and retreieving collections from end suers in Uganda shilling, a weak currency.

Table 5.4: Classification of Electricity users according to tariff rates(January to March 2019)

S/N	Customer Tariff Category	Code	Description Of Customer Tariff Category	Time Of Use	Pricing Comparison Tariff RATE(UGX/KWH	
					UMEME	**UEDCL**
1	Domestic Consumers	10.1	Low voltage single phase supplied at 240volts	First 15kWh in a month	250.0	**769.0**
				After first 15kWh in a month	**769.0**	
				Average	**509.5**	
2	Commercial Consumers	10.2	Low Voltage Three Phase not exceeding 100maprees supplied at 415 kva	Peak	884.8	**684.8**
				Shoulder	581.1	
				Off-Peak	433.9	
				Average	**684.8**	
3	Medium Industrial Consumers	20	Low Voltage 415volts,with maximum demand up to 500kva	Peak	790.8	**613.2**
				Shoulder	608.8	
				Off-Peak	388.6	
				Average	**613.2**	
4	Large Industrial Consumers	30	High Voltage 33,000 Volts, with maximum 500kva upto 1,500Kva	Peak	490.9	**377.7**
				Shoulder	377.9	
				Off-Peak	259.1	
				Average	**377.7**	
5	Extra-large Industrial Consumers	40	High Voltage 33,000 Volts, with maximum 1,500kva in manufacturing	Peak	415.2	**311.9**
				Shoulder	319.6	
				Off-Peak	225.0	
				Average	**311.9**	
5	Street Lighting	50		**Average**	**751.1**	**751.1**

Source: **Developed by the researcher (2019)**

Table 5.4, is derived from a documents review process that involved comparison of electricity tariffs of UMEME (distribution concessionaire) and Uganda Electricity Distribution Company (UEDCL). From analysis of findings, it is revealed that consumers of electricity are charged according to various classifications ranging from domestic to medium and large scale.

A review of reports and tariffs by the distribution concessionaire and the regulator indicate that there has been improved performance in electricity distribution by UMEME. In terms of end user tariffs, the study finds that while tariffs charged by the state utility firm UEDCL averaged those charged by the electricity distribution concessionaire (table 5.2) it is revealeded that the concessionaire provides lower tariffs to off peak hours than the state owned enterprise UEDCL that charges a standard tariff.

From the political perspective, a review of documents as contained in Annex 9 reveals that stakeholders especially members of Ugandan Parliament have always wanted the UMEME contract to be terminated. This position is shared by consumers of electricity and broadly by the public view. The grounds for termination have always included: legitimacy of concession as it is alleged that the Attorney General (AG) entered the concession without signature, which is contrary to the Ugandans Constitution that requires that the AG sanction such contracts. On the other hand, some players in the energy sector feel that Uganda's utility firms have capacity to distribute electricity.While the study could not not independently verify these assertions some contrasts are made drawn from the water sector.

In contrast with this view participants point to National Water and Sewerage Corporation (NWSC), a state water and sewerage corporation that have over the year distributed water to Ugandans and provided quality sewerage services.

On the other hand and in relation to yet another PPP type in the hydropower sector (a management concession for operate and maintain signed with Eskom), participants feel that the generation concessionaire, Eskom has not done enough either to improve generation of electricity by maintaining two dams Nalubaale and Kiira dams with installed capacity of 200mw and 180mw. It is revealed from discussions with participants that Eskom was granted a 20-year concession to manage already existing Nalubaale and Kiira dams that is due to expire in 2023.

Based on document reviews and interviews, the study notes that under its concession, Eskom was required to invest USD100 million but have invested only USD25 million over the last 15 years and ensure that the dams are well maintained according to international hydropower maintenance standards. However, it is revealed that out of the USD100 million, only USD25million has been invested, cracks on the dams are evident signaling negligence and out of the 10-generation units handed over, one of the units is now faulty! Further reviews point to weak design of clauses in concession agreements. This view resonates well with views advanced by Hart (2003:2-4) and United Nations (2008:1-3) Kenny and Søreide, 2008:1-3) that asserts that PPPs can improve efficiency only if key performance indicators such as rewards and penalties are spelt out in concession agreements alongside standards of pre investments required. Hart (2003) notes that there has been to attempt to include these standards in traditional procurement contracts, limits appear to exist when designing concessions agreements for PPPs. While concessions in generation and distribution appear not to have delivered as required by the publics in the electricity sector in Uganda, they have delivered elsewhere. Accordingly, Kenny et al (2008:1-3) asserts that initial performance of private participation in PPPs in developing countries in the early 1990s was good. PPP are said to have been associated with efficiency benefits but in the later years, performance has been characterised by delayed roll out of new services and high fiscal costs. Ujur (2015:120-121) argues concessions and PPPs in Turkish electricity have delivered productivity and quality services. Accordingly, this has been attributed to robust governance structures that have been built in concession agreements. This backdrop has now increasingly started to make PPPs unpopular as an alternative to public service provision. While opportunism and weak contracts have been associated

with causes of bad performance of PPPs, limits have existed in tracing causes attributable to underperformance of utilities. According to Kenny (2007) and Black (2003) corruption among utilities is one of the factors that compromise performance of utilities and private sector participation. Studies reveal that corrupt officials in the sector usually represent individual and political interests aligned to objectives of making money for themselves and their political parties.

From conversations with study participants, majority of voices point to the view that this concession was bad and did not reflect value for money.In line with this view participants argue that Eskom has not invested financial resources as agreed under concession resulting into cracks on the dams. As the study delves deep into a question on the Eskom concession that it has not performed and is not rated well like the Umeme concession, participants point to weak monitoring and evaluation of concession frameworks without clear lines of accountability.

5.3.4 Build Operate Transfer

The Build Operate and Transfer (BOT) arrangement is one of the PPP models that has been traditionally implemented in public infrastructural works. According to Shrestha (2011:138-142) this model possess all features of the BOOT model in addition to design of the facility. In essence the private party has responsibility for design build, financing and operating the facility under operation for a period of 25 to 30 years. Like eslwhere the model has been implemented in the hydropower sector in India. In Uganda the Build, Operate and Transfer has popular at implementation but not pula with responses from study participants. Findings from the study suggest that most of the participants were unfamiliar with this PPP model type. To the contrary, existing literature reveals the BOT model has extentsively been implemented with projects cited in the figure below:

Financial closure year	Project name	Project status	Technology/ fuel	Total Investment (US$ million)	Capacity (MW)	Award method[a]	Number of bids	COD	Contract period	Contract type	Sponsors/developer
1999	Kasese cobalt, (Mubuku III)	Operational	Hydro, Small (<20 MW)	22.50	9.9	DN			20		Blue Earth Refineries (100% Uganda)
2003	Kakira cogeneration plant	Operational	Waste/bagasse	56.00	32	DN	NA	2013	20	BOO	Madhvani Group (100% Uganda)
2015	Kakira cogeneration plant expansion	Operational	Waste/bagasse	57.00	20	REFIT	NA	2015	20	BOT	Madhvani Group (100% Uganda)
2007	Bujagali hydro project	Operational	Hydro, large	860.00	250	ICB	3	2012	30	BOT	BEL Ltd. (Sithe Global Power (58% United States), Aga Khan Fund (31% Switzerland))
2008	Tronder/Bugoye hydroelectric power project (Mubuku II)	Operational	Hydro, Small (<20 MW)	65.70	13	DN	NA	2009	20	BOT	Tronder Power Limited (100% Norway)
2008	Mpanga hydropower project	Operational	Hydro, Small (<20 MW)	27.00	18	DN	NA	2011	20	BOT	South Asia Energy Management Systems (SAEMS) (100% United States)
2008	ECO Ishasha mini hydropower plant	Operational	Hydro, small (<20 MW)	14.00	6.5	DN	NA	2011	30	BOT	Eco power (100% Sri Lanka)
2008	Namanve power plant	Operational	MSD/HFO	74.00	50	ICB	3		6	BOT	Jacobsen Elektro (100% Norway)
2009	Tororo power station	Operational	MSD/HFO	41.50	16	DN	NA	2010	9	BOO	Electro-maxx (100% Uganda)
2012	Tororo power station expansion	Operational	MSD/HFO	41.50	34	DN	NA			BOO	Electro-maxx (100% Uganda)
2009	Buseruka/hydromax hydropower plant	Operational	Hydro, small (<20 MW)	27.00	9	DN	NA	2012	30	BOT	Hydromax limited (100% Uganda)
2009	Kinyara cogeneration plant	Operational	Waste/bagasse	29.00	7.5	DN	NA	2011	20	BOO	Kinyara sugar group (100% Uganda)
2013	Kilembe mines (Mubuku I)	Operational	Hydro, small (<20 MW)	16.20	5.4	DN			25		Tibet-Hima consortium (100% China)
2015	Siti I hydropower project	Operational	Hydro, small (<20 MW)	14.80	6.1	REFiT	NA	2017	20	BOT	Frontier energy (Danish Private Equity Fund)
2015	Rwimi hydropwoer project	Construction	Hydro, small (<20 MW)	20.80	5.4	REFiT	NA	Exp 2017	20	BOT	Eco power (100% Sri Lanka)
2015	Muvumbe hydropower project	Operational	Hydro, small (<20 MW)	14.10	6.5	REFiT	NA	2017	20	BOT	Vidullanka (100% Sri Lanka)
2016	SAEMS Nyamwamba SHPP	Construction	Hydro, small (<20 MW)	26.80	9.2	REFiT	NA	Exp. Q1 2018	20	BOT	South Asia Energy Management Systems (SAEMS) (100% United States)
2016	Siti II hydropower project	Construction	Hydro, small (<20 MW)	33.00	16	REFiT	NA	Exp. Q3 2018	20	BOT	Frontier energy (Danish Private Equity Fund)
2016	Lubilia hydropower project	Construction	Hydro, small (<20 MW)	18.70	5.4	REFiT	NA	Exp. Q4 2017	20	BOT	Frontier energy (Danish Private Equity Fund)
2016	Waki	Construction	Hydro, small (<20 MW)	18.10	4.8	REFiT	NA	Exp. Q2 2018	20	BOT	Hydromax limited (100% Uganda)
2016	Soroti Solar	Operational	Solar, PV	19.00	10	REFiT	NA	2016	20	BOT	Access (UAE)/TSK (Spain)
2016	Tororo Solar	Operational	Solar, PV	20.00	10	REFiT	NA	2017	20	BOT	Access (UAE)/TSK (Spain)
2017	Sindila	Construction	Hydro, small (<20 MW)	17.00	5	REFiT	NA	Q3 2018	20	BOT	Lereko Metier sustainable capital (87%) and KMRI LLC USA; WK power and fieldstone Africa.
2017	Kyambura	Construction	Hydro, Small (<20 MW)	24.00	7.6	REFiT	NA	Q4 2018	20	BOT	
2017	Nkusi	Construction	Hydro, small (<20 MW)	23.00	9.6	REFiT	NA	Q1 2018	20	BOT	PA Technical Services

Source: **Meyer (2017:87-88)**

From the figure above, it is revealed that BOT model has been popular in generating electrcity from a mix of sources. The study synthesis reveals that in Uganda,BOT contracts have been awarded over years and implemented across small hydropower,thermal and more recently across solar power plants in Uganda. According to Meyer(2016:87-89) over sixteen plants have been contracted by ERA for hydropower generation and supply by ERA. These theoretical and empirical findings are consistent with other countries where the BOT model has been implemented and is popular in electricity generation countries such as China, Australia, Hong Kong (Sachs et al, .2007:128). It is further argued that countries which have specifically adopted BOT projects in hydropower generation and other sectors include India, Brazil, China, Hong Kong, France and Columbia (Yescombe 2017:4-45: Irwin et al,.2009:16).

The BOT model has been associated with several benefits. Various authors have advanced the benefits attributable to this model invariably according to Sambrani (2014:285-295), Farlam (2005:1-68), Jooste, Levitt and Scott (2011: 195-205), Manchidi and Merrifield (2011:409-421).

The BOT provide financing benefit and transfers risks such as design, operation and maintenance risk to the private party. This view is consistent with findings of the study that suggest that BOT enables government to reduce risks associated with design citing Bujagali Dam. In the initial stages, government hired a firm to design the dam.

5.3.5 Chapter summary

In this chapter, the study has discussed various PPP models adopted in the hydropower sector across various stages of the electricity supply chain. In the discussion, conditions for adoption of models are highlighted. By knowing which models have been adopted as associated benefits and challenges adoption, this study is able to arrive at conclusion and recommendations. In the next chapter, the study provides conclusion based on study objectives, questions and aggregated findings of this study. This is followed by recommendations that provide direction on the most appropriate PPP model for the hydropower subsector.

CHAPTER6: SUITABLE PUBLIC PRIVATE PARTNERSHIP (PPPS) MODEL FOR IMPROVING COMPETITIVENESS OF HYDROPOWER ELECTRICITY SUBSECTOR

6.1 Introduction

This chapter provides a summary of theoretical and empirical discussion of existing gaps in implementation of PPPs in the hydropower power sector. Based on key gaps identified, the chapter provides a discussion of the proposed PPP model that is envisaged to improve competitiveness of the hydropower sector. To arrive at this model, the chapter provides a discussion of theory that guided the choice of the model and provides the rationale for the PPP model proposition, assumptions and key success factors if the model is to be adopted.

6.2 Gaps in the practice and theoretical adoption of PPPs in hydropower subsector

PPPs have been adopted to improve public service provision and more specifically to improve competitiveness of the hydropower sector. While Uganda has adopted PPPs, like elsewhere Uganda has been a victim subjected to a test without prior learning. While Uganda has made some successes, there exist some gaps in implementing PPPs in the hydropower. By knowing, the gaps from the practice of PPPs adoption Uganda can be able to develop strategies aimed at retrieving the inventory of value existent in PPPs.

6.3 Investigations and findings from theory of PPPs

A review of literature confirms that PPPs have been adopted to improve efficiency, access to finance and improve effectiveness in public service provision across the world and across sectors. While the notion that PPPs have been adopted globally stands, studies by Leigland (2018:105-108) reveal that PPPs adoption in public service provision have been adopted variably across the world. In Latin American Countries (LACs), PPPs have contributed 20% of share of public infrastructural investment projects. In

developed countries, PPPs have taken share of 15 to 25% share of total public infrastructure investment projects. In sub Saharan Africa, the share of PPPs as a fraction of total public infrastructural investments is estimated at 25%. Based on analysis of sectors, there is a feeling that the energy sector has received minimal investment in terms of PPPs adoption.

Based on review of literature,the study reveals that while most studies have adopted the Agency theory in guiding the study of PPPs,other important theories such as stakeholder theory have either been anemically used or not been adopted at all in studies relating to PPPs since PPPs affect a wide spectrum of stakeholders beyond the principal, and agent.

While previously PPPs success was determined by how well the principal and agent engage, increased number of stakeholders and awareness on matters that affect them requires that studies on PPPs adopt hybrid theory. This is important because the success of PPP projects is deemed to be influenced stakeholder commitment and ownership. (Ng, Wong and Wong, 2013:370-381)

6.4 Investigations and findings from practice of PPPs

The study also reveals that PPPs can in some instances deliver better outcomes that traditional procurement mechanism in public service provision. However, in some instances this has not been the case. PPPs have in some instances failed to achieve the objectives that justified their adoption. For instance, it is revealed that PPPs firms have in some instances underinvested than promised, delivered poor services and at times delivered services late. It is also found that models adopted such as BOOT have been faced with delays at execution due to geological surprises, which tend to transfer back risks associated with delays to the contracting party.

6.5 Discussion of appropriate PPP

While various PPPs have been adopted in Uganda's hydropower sector,findings on key challenges faced in this study provides recommendations of suitable PPPs model that would be added onto existing models to improve competitiveness of the hydropower

subsector. The findings that inform the choice of an additional model into the sector are informed by analysis of best practices from traditional procurement and the view that PPPs should be able to transfer optimal risk while providing incentives for the private party to take on the allocated risks in the partnership. The proceeding discussion provides a discussion of the proposed model, its rationale and justification.

6.6 Proposed PPP model for improving hydropower sector competitiveness

This study proposes the Design Build, Own, Operate and Transfer (DBOOT) an extension to BOOT model for improving competitiveness of the hydropower sector. Under DBOOT model, the private sector is tasked to design the facility, finance build, Own, Operate and Transfer. By structuring a PPP as a DBOOT, the private party can own the design risk as well. According to views of participants on geological surprises, they note that a rock was discovered underneath water that negatively affected time and construction cost of the dam and influencing tariffs. This view is consistent with studies by Ullah (2015:9) that asserts that hydropower dams are characterized by "geological surprises ". Based on this background, the DBOOT model is recommended as one of the most appropriate PPP models desirable for improving competitiveness of hydropower subsector. The model is considered the best optimal fit for the public and private parties in a PPP. The model is recommended as it borrows from traditional procurement and adds to the private party the combination of Design + Build Own Operate and Transfers (BOOT) to equal DBOOT. The model is recommended as it provides access to finance, transfer of design, construction and operational risks to the private party at an incentive provided by the contracting authority in form of extended tenure of concession or absorption of risk in setting of user fee._While the contracting party extended to the private party, design risks the model recommends an extra incentive for the private party.

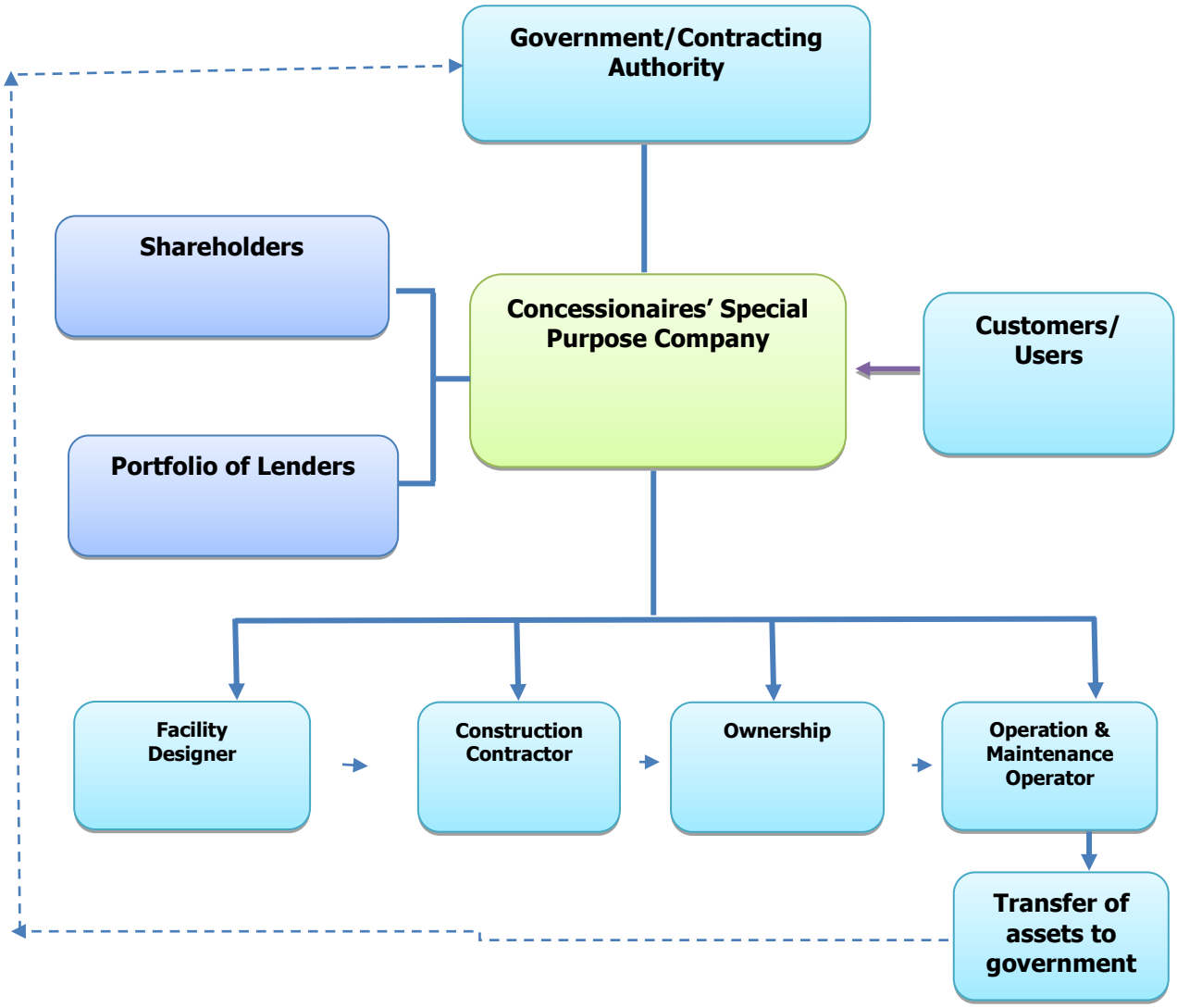

Table 6.1: Structure of DBOOT

Source**: Developed by researcher (2019)**

Figure 6.1 above, provides a diagram that defines the structuring of the proposed DBOOT model. In this model, government or contracting authority signs up a concession with a special purpose company to design, finance, build, own, operate and transfer a dam. The utility agency should develop feasibility study, and invites potential investors to provide a proposal to design, finance, build, operate and transfer a facility back to the contracting after a given period of time ranging from 10 to 35 years. The concessionaire responsibility areas under the proposed DBOOT model are: design facility, construct,

own, operates. At the end of the concession, the private party (spv) is required to transfer the dam and its assets to the contracting authority (government).

While PPP models similar to DBOOT model usually have a concession tenure of up to 30 years, the tenure of up to 35 years it is recommended. The extended tenure of ownership is a recommended as a tradeoff for investment in design and associated risk.

While Bujagali dam has experienced challenges from design through to implementation, it is argued that there could be greater risk exposed to at the time of transfer. In this study, transfer is a term used to refer to the handling over the dam by the concessionaire (BEL) to contracting authority in this case Uganda Electricity Generation Company Limited (UEGCL) after elapse of period of 33 years' concession.

6.6.1 Rationale for DBOOT model

By bundling responsibility for design and construction together (Design and Build), the contracting authority reduces exposure to design risk that has always been associated with not only incremental project costs but delays when implementing BOOT projects like Bujagali. There is evidence that design and build contracts can help to reduce delays. This is evident from reviews of literature as cited in Table 6.2 below

Table 6.2: Justification for Design as a component of Build Own Operate Transfer

Researchers	Methods	Sample size	Project types	Project size	Major findings
Roth (1995)	DB	6	Navy child care facilities	Not applicable	Cost growth for DB was less than that for DBB
	DBB	6			
Songer et al.(1996)	DB	108			
	DBB	Not Applicable	Industrial, building and highways	Not applicable	Reduced costs and shortened duration were the top ranked factors for selecting DB method
Konchar & Sanvido(1998)	DB	155	Industrial & Buildings	Not applicable	Unit cost was 6% and cost growth was 5.2% less in DB: schedule growth was 2.4% less than that of DBB
	DBB	116			
CII and NIST(2002)	DB	210	Industrial buildings	Not applicable	DB projects have significant less schedule
	DBB	406			
Ibbs et al.(2004)	DB	407	Buildings	USD5million to USD 50 million	Cost growth for DB was 7.8% more than that of DBB: schedule growth for DB was 2.4% less than that of DBB
	DBB	24			

Shrestha et al.(2007)	DB	4	Highway Projects	USD50 to USD1.3billion	Cost growth for DB was 9.6% less than for DBB: schedule growth for DB was more than that of DBB
	DBB	7			
Warne (2005)	DB	39	Highway Projects	USD83million to USD1.3billion	76% of DB projects were finished ahead of schedule: DB offered greater price certainty
	DBB	21			
Hale et al.(2009)	DB	14	Navy Bachelors quarters	Not applicable	Cost growth and all schedule-related metrics for DB method than in DBB method
	DBB	38			
	DB	11	Highway Projects	Not applicable	
	DBB	11			

Source: **Extract from Shrestha et al.2018 (1-13)**

Table 6.1 above, provides a comparative analysis of performance of design-build (DB) and design-bid-build (DBB) delivery systems. In comparative studies on cost, scope and time performance of design-build (DB) and design-bid-build (DBB) delivery systems by Shrestha et al.2018 (1-13), it is revealed when the contractor is given hybrid responsibility to design and build.

In this case, the contracting authority as applied to PPPs will enjoy better lead times, reduced exposure to design risk and reduced cost escalation that may arise when adopting the design-bid-build (DBB) model. This view is consistent with studies undertaken by Minchin and Issa Li2,F.ASCE3 and Vargas (2013: 04013007-2). In these studies, it was discovered that time to deliver a project can be significantly reduced when design and build project delivery systems are adopted. More so, this claim is maintained by Hale, Shrestha, Gibson and Migliaccio (2009:579-587) whose comparative study on a portfolio of projects concludes that projects delivered by design and build delivery framework deliver ‘’superior” performance not only in time but in terms of cost and quality. By bundling design onto existing BOOT, the contracting party is saved of not only costs but risks in addition to avoidance of project scope creep.

6.6.2 Approach adopted in design of the proposed PPP model

To develop this model, the study adopted design thinking theory. According to Pluchinotta, Kazakci, Gordano and Tsoukis (2019:1-35) design thinking is viewed as [a way to inform a collective problem identification leading to innovation, highlighting the value of stakeholder engagement]. In essence about innovation that is based on practical experiences of those affected by a given phenomenon. In such contexts innovative ideas arise based on trials. Through search for opportunity and solutions to constraints impeding practice, ideas illuminate from illustration. This view is consistent with earlier theoretical mentions by Gray (1990:2-5), Gray and Malins (2004), Gray and Malins (2014:22), Ansari, Ansari and Jaffri (2014:141-148) Haseman (2006, 98–106) and Bolt (2006:470-473) whose scholarly voices point to the need to derive policy directions from a hermeneutical practice based audience. In line with this school of thought, silent but powerful revelations that point to the need for practice and lived experiences be given chance to champion the design of change necessary to create a sustainable world through

contribution of knowledge. In adoption of this approach, the study undertook the steps shown in Figure 6.3 below.

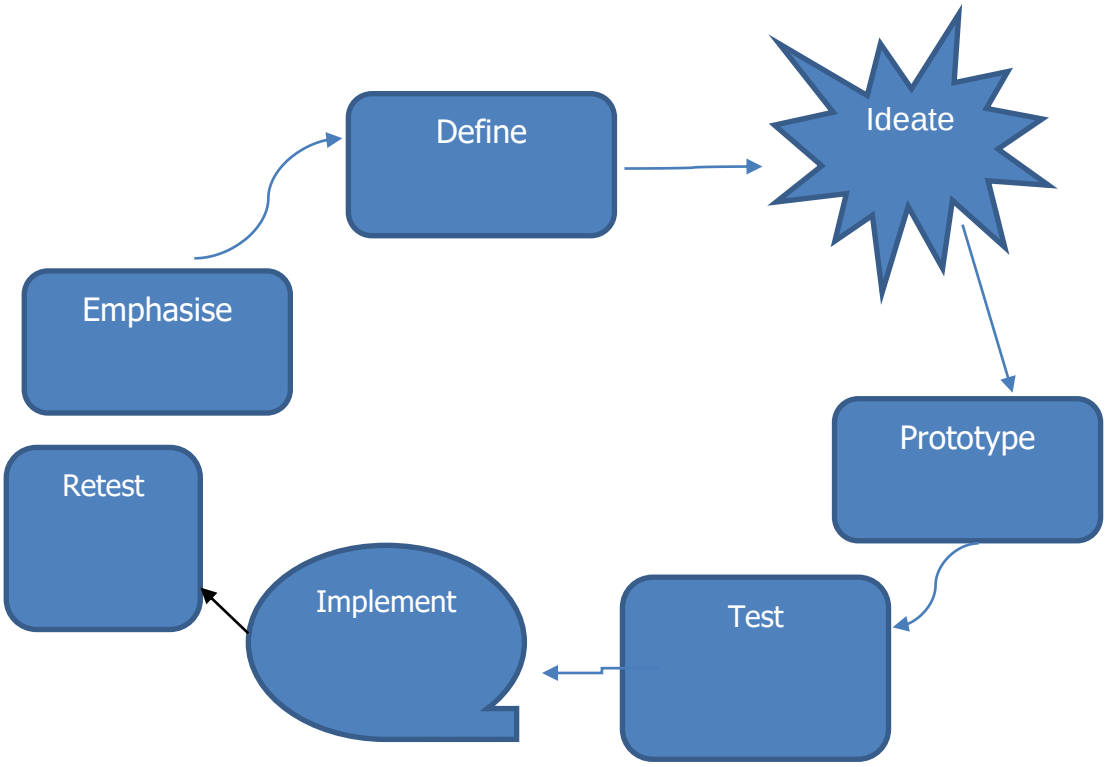

Table 6.3: Designing PPP model using design thinking approach

Source: **Pluchinotta, Kazakci, Gordano and Tsoukis (2019:1-35) with modifications by study(2019)**

Figure 6.3 above, provides a snapshot of the process that was adopted in recommending the DBOOT model specifically for the hydro power subsector. While the approach borrows from the works of Yu Siang, the approach proposes additional two steps, implement and retest. Using the this approach, the study interviews policy makers and practiceoners in the context of PPPs and Traditional Procurement in the hydro power sector to find out the real problem affecting the hydropower subsector. The study was able to identify problems associated with the PPPs and the electricity subsector. Based on challenges faced with the sector, the study asked participants to identify specific challenges with existing PPP models and extracted views revealed that key challenges affecting performance of models were associated with procurement and contract design, geological surprises and monitoring and evaluation of private party performance. Based on these findings, DBOOT model was arrived at through not only analysis process but was directly pointed to as a

model of best fit given the context of PPPs especially in acquiring and managing high capacity hydropower dams.

The design of the model was then designed through reflection of views from experience of participants. While the model has not been tested in Uganda as a prototype, the study sought to test the validity of model by validating recommended findings with key participants. Findings reveal that the model is good but may require empirical tests in upcoming future PPP prospective projects and similar studies need to be undertaken to revalidate in future how this proposed model enables improvement of competitiveness of the hydropower sector.

6.7 Assumptions and critical success factors (CSF) of the Dboot model

Based on review of literature and empirical findings, the study provides assumptions and critical success factors underlying DBOOT PPP model choice. While the DBOOT model holds prospects for improving competitiveness of hydropower subsector, there are assumptions and critical success factors(CSFs) that implementers of the model should consider in at design implementation and exit of the DBOOT PPP Model once it is adopted.

6.7.1 Compensation for bidding and project design costs

Design is considered a key element of project performance .The DBOOT PPP model requires that bidders undertake design as part of project and bid preparation costs. This view is consistent with Leigland (2018:112) and OECD (2008) that argue that PPPs are associated with high costs due to high project preparation costs. By transferring the role of project design to bidders, the contracting authority increases PPP preparation costs on bidders without guarantee that they will win the contract. Bid preparation costs are usually high. Accordingly, studies by Leigland (1018:106-112) reveal that project preparation costs at 3.5%, winning bidders cost at 3.8% and losing bidders at 5% of total capital costs.

With the current BOOT model, project preparation costs to a large extended have been borne by the contracting party. With adoption of DBOOT model, the costs of bid preparation that include design and financial closure costs increase and also revert to the private party. The high costs without guarantee of wining the concession may appear a

deterrent for the PPP bidding process, rendering the bidding process unresponsive or with few bidders participating in the PPP acquisition process. To improve responsiveness of the bidding process with DBOOT, the ultimate winning bidder needs to be compensated by the contracting authority. While limits exist on the criteria for measurement of the true delivered costs of PPP bid preparation, studies by Leigland (2018:113), ADB (2013: np), Farajian (2010: np) and Romani and Stern (2012: np) may provide an anchor to jolt the calculation. In line with this, these authors argue that in practice a 10 to 15% of total PPP project investment costs has been accommodated as a charge for development of design and broadly bid preparation in the concession agreements.

6.7.2 Willingness by contracting party to increase incentives to the private operator.

It is argued that payoffs are a key motivator in PPP arrangements. To make the model attractive to PPP market, it is important that payoffs are made attractive. This study proposes increase in tenure period and or allowance to factor design risk and costs into user fees or tariffs should be considered.

6.7.3 Managing information asymmetry

The agency theory presupposes that failure of PPPs is attributable to information asymmetry. The contracting authority should position technical staff as part of teams to manage the relationship with the PPP private party. By engaging such technical expertise, the contracting party can be able to match the level of information and expertise possessed by the private party. By having adequate information, the private party is likely to achieve better negotiation and contracting outcomes retrieve leading to extended value for money benefits from PPPs.

6.7.4 Managing Opportunism Challenge.

Studies by Moszoro (2011:1-3), Spiller and Moszoro (2014) and current PPP Concession developments at Nalubaale and Kira hydropower dams (the East African Newspaper 9th - 15th March, 2019:36) PPPs possess opportunism behaviour that should be managed if governments are to reap from PPPs. Opportunism tends to manifest in form of lapses in contract implementation that usually results in defects, delays, missed stages in contract execution, claims for unnecessary and unjustified inflated expenditure and unfulfilled

contractual commitments. While monitoring, and evaluation of PPPs are prerequisites for managing a potential for opportunism in PPPs is deemed key managing opportunist behaviour. However, this study recommends that a robust design monitoring and evaluation concession contracts is key. Such design would include: a requirement for an M&E plan, that should include: key performance indicators, deliverables, investment requirements appended to periods and spread throughout the concession tenure. Penalties and rewards in form of bonus payments or reduction in concession rent and reduction in fees payable for service should be included in concession.

6.7.5 Managing PPP Transfer

The study notes that Uganda has not experienced any PPP handover but is expected to witness PPP handover starting with concessions at Nalubaale and Kira dams in 2025, UMEME concession in 2023 and later Bujagali dam.This does not underscore the fact that PPP transfer can only happen to the expiry of concession period. It is argued that PPP transfer is intended to occur at the end of the concession tenure, exit that may require transfer is deemed to have a potential to occur at any time.In this context, early preparation is key in reducing state and citizen's exposure to uncertainities that may arise if PPP exit is not well planned.This recommendation is consistent with Cruz and Marques (2013:473-483) who argue that PPPs are exposed to uncertainties that may result into a potential for PP exit and transfer.

6.7.6 Quality assurance

By assigning the responsibility of design, build, own, operate and transfer to the private party, the contracting party may become vulnerable to quality issues. To manage this challenge, there is need that the contracting authority developed output based specifications that will inform the design process for bidders. By undertaking such initiative, the interests of the contracting authority can be incorporated in the designs developed by the bidders from the onset.

There is also need to put in a place a multiskilled and multi representative project steering committee. The committee members should possess skills in areas such as engineering, procurement, environment, hydrology and land matters. It is also important that the committee includes a members drawn form citizens that that proeject will dierctly affact civil society and local politicians. By representing interests of users, PPPs spvs and their

activities are likely to attract ownership and commitment of communities in areas where PPPs are implemented.This view is consient with works of Ng et al.,(2013:370-381) that argues for PPPs that are people centric.

6.8 Chapter summary

This chapter identifies Design Build Own Operate Transfer (DBOOT) as yet another missing but important PPP model that may be adopted to improve competitiveness of the hydropower subsector in Uganda. While other models have been adopted successfully within the context of hydropower generation and electricity in general, revelations of geological shocks require yet another hydrid model that cushions the contracting authority against design risks. To reduce exposure to geological shocks that come along with the BOOT model, this study recommends the adoption of the Design, Build Own, Operate and Transfer (DBOOT). The model is recommended as it ensures optimal risk transfer including design risk that the former champion BOOT for complex projects has not handled well. In this chapter, the study notes that while DBOOT may assist governments that wish to increase hydro electricity generation capacity other models may such management distribution concessions may be adopted in the electricity chain. This chapter also identifies assumptions for adoption of such model. In the next chapter, the study provides critical success factors that need to be taken into consideration when adopting PPPs in the hydropower subsector alongside, conclusion and recommendations for the study.

CHAPTER7: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The study adopted the agency theory. The theory was adopted to understand the working of partnerships in the hydropower subsector and more especially, public private partnerships. Based on adoption of agency theory, the study identifies some gaps in PPP adoption that may impede competitiveness of the hydropower sector. The study resonates that view that PPPs can deliver a competitive hydropower sector in developing countries that are faced with both financial and technical constraints. Like elsewhere, this study reveals that PPPs can deliver value and extend greater participation in countries like Uganda that seek to develop with private sector as a leader in national eceonimc transformation. This chapter provides a discussion of conclusions of the study on PPPs and its role in improving competitiveness of the hydropower sector.The study draws conclusions from empirical and secondary data review findings during the period under which the study commenced in 2016 to 2018. While the study was undertaken during this period, literature reviewed spans from the 1970s to 2019. It is from these conclusions that recommendations for adoption of PPPs aimed at improving competitiveness of hydropower are derived.

7.2 Conclusion

Overall, the study concludes that PPPs improve competitiveness of the hydropower sector with good governance well conceptualized and governed with citizens at the frontier. PPPs increase state of competitiveness of the hydropower sub sector by increasing quantity, and providing available, good quality, dependable and reliable electricity. However, it is noted that PPPs may not reduce end user tariffs in the short and medium term but may enable the sector to realize cost reflective tarrrifs that relieves governments the burden of offering subsidizing electricity.By doing so, governments can rechannel subsidy budgets to other critical sectors of the economy such as health and education.By increasing electricity production, PPPs can help governments and its people to increase complexity of exports and economy by powering industralisation that enables extended export product value that is deemed critical for balancing countrys balance of payments and trade necessary for national prosperity (Mealy, Farmer, Teytelboym, 2019:1705).

The study further concludes that PPPs can enable Uganda transform its economic structures to support sophisticated commodities which can in turn enable the country develop much faster than countries producing simple commodities (Felipe et al.(2012; Adam, Garas, and Lapatinas, 2019:1-27; Mealy,et al.,2019; Hausmann,2015:np).By enabling value addition, electricity produced by PPPs can enable Uganda to grow her industries resulting into high complexity of exports that can attract higher premium on sale in foreign ,regional and local markets.

While PPPs were adopted with a slow pace in the last 3-4 decades, their adoption will continue with faster rates due to the benefit that they provide.

In the energy sector and more specifically the hydropower sector, adoption rates are likely to double as governments continue to promote industrialization agendas. In Uganda, like in other developing countries industrialization remains key on national agenda. The hope to industrialize is hinged on electricity that is viewed as a backbone for driving and sustaining a vibrant industrial sector. Due to constraints in efficiency, finance and technology, PPPs have been adopted to support competitiveness of not only sectors such as the hydropower sector but national competitiveness. Previous experiences indicate that despite PPPs may have failed to deliver the promise and rhetoric of competiveness in some instance. However, it is evident that once PPPs are well-defined, structured and governed, they can provide opportunity for cost savings, efficiency delivering public infrastructure much earlier, financial investment relief, technology transfer and value for money benefits. Studies reveal that where some PPPs have failed others have succeeded: United Kingdom, Italy, France, Kenya, Uganda, South Africa, Botswana, USA, and Australia. These findings are critical in informing the design, analysis, implementation, monitoring and evaluation of PPPs.

To understand the value of PPPs in improving competitiveness of the hydropower sector requires analysis of what traditional procurement can deliver and not, what has failed PPP adoption, what models have worked and in which sector have respective PPP(s) models succeeded or failed. Unbiased evaluation is required in order to arrive not only at conclusion of PPPs and at their role in improving competitiveness of the hydropower sector but rather extend to arrive at the most appropriate PPP(s) for improving competitiveness

of the hydropower sector. Shifting away from the past and loud noise of failure is required to derive the sustainable value that PPPs provide.

To understand the journey of this study and respective conclusions drawn, research questions that guided this study are reviewed.

7.2.1 Research Questions that guided the study

The study was guided by questions. The questions formed a basis in retrieving both empirical and secondary data findings. The study questions were

R1: What PPPs models are implemented in in Uganda's Hydroelectricity sub sector?

R2: What is the legal and regulatory framework for PPPs in Uganda?

R3: What lessons can government learn to improve PPP performance and competitiveness of the hydroelectricity sub sector?

R4: What are the challenges faced in implementing Karuma and Bujagali Dam projects?

R5: What is the most suitable PPPs for improving Uganda's competitiveness of hydroelectricity sub sector in Uganda?

The primary objectives were later broken down in smaller unit questions. This was aimed at retrieving deeper insights form human subjects.

7.2.2 Reinstating the Core Objective and Conclusion

The study aimed at identifying the most suitable PPPs model (s) for improving competitiveness of the hydroelectricity energy subsector in Uganda. The motivation for choice of this objective was driven by controversial talk and stories rotating around two issues: critique of public procurements and its association with delays and high expenditures and that PPPs that were sought as alternative to traditional procurement were not delivering as required with pointers to Bujagali dam.

To understand the PPP models, the study sought to examine the traditional procurement process as part of a foundation for adoption of PPPs.Since PPP are high value and complex projects and given that, the study was focused on hydropower dams, the study chose Karuma Dam as a case study to be studied alongside Bujagali PPP Hydropower Dam.

7.2.3 Reinforcements of study

The underpinnings of the study are derived from a context of Uganda, a country that is seeking to realign its actions in becoming a middle class country by 2040. In such context, the country's vision is based on the assumption that to achieve the middle-income class status, industrialization powered by a competitive hydropower sector is vital.

With PPPs as part of the journey, this study concludes that recognizing PPPs models in the hydropower sector that will drive competitiveness need to be identified. From a survey of global, regional and local experience of PPPs implementation in the hydropower sector, the study concludes by identifying PPPs models that should be adopted in the hydropower sector. However, the type of models should be varied across generation, transmission and distribution of the electricity supply chain.

RO1.1: To identify public private partnerships models implemented in Uganda hydroelectricity sub sector.

Regarding the PPP types that are implemented in Uganda's hydropower sector, BOOT, BOT, management concessions and Design, Finance, Build and Operate (DFBO) were popular. This view is not different from the ongoing discussion in literature reviewed on the PPP types implemented in the hydropower power sector. The models shared in the conversations in the study however were discussed alongside with some conditions for use. This finding is unique, as it has not been emphasized in the historical and ongoing discussions in literature. This view validates the management slogan 'there is no one size fits it all'. Implying that no one single PPP type should be applied just for the sake of application.

RO 1.2: To examine the legal and regulatory environment of PPPs in Uganda.

The study concludes that a legal and regulatory framework is vital for the success of PPPs in any country. From a conversation held and review of publications by the GoU, the study concludes that the legal and regulatory framework in Uganda for PPPs includes: PPP Policy 2010, PPP Act 2015, Public Finance Management Act 2015 Companies 1998 and Companies (Amendment) Act 1998, Anti-Corruption Act, Whistleblowing Act, Land Act, National Environment Management Act and Investment Act. The study notes that other

relevant components of the legal and regulatory framework include, administrative circulars issues by Permanent Secretaries, Ministries and agencies.

Table 7.1:Context of legal and regulatory framework for PPP in Uganda

S/N	Type of Act/Policy in PPPs Context	Frequency of mention of any Policy /Act governing PPPs in the Hydropower Sector	Percentage of mention of either Act or Policy
1	PPP Policy 2010	4	21%
2	PPP Act 2015	10	53%
3	Public Finance Management Act 2015	0	0%
4	Whistle blowing Act	0	0%
5	Companies Act 1998	1	5.2%
6	Companies Amendment Act 2014	2	10%
7	The Constitution of Uganda	0	0%
8	Electricity Act 1990	0	0%
9	Public Procurement Act 2003,2006,2014	2	11%
10	Anti-Corruption Act	0	0%
11	Arbitration & Conciliation Act	0	0%
Total Mentions of Policy /Act		19	100

Source: **Principal Investigator (2018)**

While conversation in literature has remained on the rhetoric of conclusion that a legal and regulatory framework is important for success of PPPs, this study reveals that limits have existed.

The study found that the participants moderately understand the process for acquiring PPPs but limits exist on the understanding of an extended legal and regulatory framework for PPPs and more alignment with adoption of PPPs in hydropower sub sector. Based on review of various documents, the study identifies Acts that are important in the successful execution of PPPs but appear to be unknown to key stakeholders in PPPs adoption in the hydropower subsector. Acts such as the Land Act attracted no mention in participant responses yet PPP assets such as dams are fixed on land. On the other hand, PPPs are associated with land compensations and resettlements rendering the land Act key in the legal and regulatory framework for PPPs.

From the findings, the study finds that PPPs context will be characterized by: procurement, public finance, and disputes, serving the interest of citizens, vulnerability to fraud and corruption, opportunity to whistle blow, electricity, registration and management of company.

There is need to stretch the discussion of what constitutes a sound legal and regulatory framework for PPP and the processes necessary for designing and implementing a framework that delivers competitiveness for the sector.

RO 1.3: To identify lessons learnt to improve PPPs performance and competitiveness of Uganda's hydroelectricity sub sector.

Based on a review of international country experiences, the study concludes that every PPP provides a unique experience, from which PPP implementers and policy makers can learn. The study concludes that experience is a key asset in implementing PPPs. Empirical findings suggest that Uganda as a country may have limited local experience to learn from, as key PPPs have not reached exit. On the contrary, a review of literature provides PPP projects in hydropower sector within the region and international contexts that Uganda can learn.This view is consistent with studies undertaken by Yescombe (2018: 1-48) who argues that compilations of case study experience is vital for nations to build their PPP knowledge base.

The study concludes that PPP investors will usually support countries to increase quantity and quality of electricity but price reduction usually remains a challenge due to high return

on Equity (ROE), and high cost of capital in Uganda like it is with other developing countries. This is due to low savings culture.

On competitiveness, the study concludes that when assessing competitiveness of the hydropower sector there is need to reflect on reliability, access, availability and quality of power.

RO 1.4: To assess challenges faced in implementing Karuma and Bujagali Power Dams

Based on data from interviews, and focus group discussion, participants agree that implementing Karuma and Bujagali hydropower sector dams has come along with challenges. Land compensation, destruction of livelihoods, local content and high tariffs came out as popular challenges. From the contractor's perspectives land acquisition and failure by government agencies to honor investment obligations was popular. Government policy makers on the other hand point to low demand for power as a major challenge that may not only affect return on investment but also deter good proposals from both local and foreign investors. Scholars and practice view land acquisition as the one of the most difficult challenges affecting HPPs projects.

RO 1.5: To establish the most suitable PPPs for improving competitiveness of Uganda's hydro electricity sector

From an exploration of literature, the study finds PPP models that are popular in the hydropower sub sector. However, there is no conclusion on what is the suitable PPP model necessary for improving competitiveness of the hydropower sub sector. While a suitable PPP was intended to be identified by this study, in an attempt to get there, empirical findings point to the contrary. While the study was intended at arriving at most suitable PPP models, the study further identifies factors that are likely to influence choice of the most appropriate PPP models necessary for improving competitiveness of the hydropower energy subsector. The factors include: financial constraints and technical expertise. Findings reveal that when faced by financial constraints and expertise to design, build, and operate hydropower dams, government should consider adoption of Design Build Own Operate and Transfer (DBOOT) PPP model. As expertise grows government should explore

shifting of PPPs from upstream end of power generation and adopt operate and maintain contracts in the downstream end of the electricity supply chain.

7.3 Practical recommendations

Various models have been adopted in the electricity sector in Uganda. Elsewhere, PPP models that have been implemented and are more extensive. Based on review of literature and empirical findings, this study recommends the adoption of Design Build, Own, Operate and Transfer Model for improving competitiveness of the hydropower sector in Uganda.

7.3.1 Capacity Building

While a legal and regulatory framework is important, there is need to develop capacity among key PPP stakeholders on the relevant policies, laws and regulations that govern PPP adoption in the hydropower subsector. By knowing the extended legal and regulatory framework, contracting parties are able to gauge risk involved and contribute to developing strategy to manage risks such as PPP disputes, procurement flaws and curtailing risks usually prone to PPPs environment. On the other hand, by knowing the aspects of the Conciliation and Arbitration Acts, Whistleblowing Act, Anti-Corruption Act, investor confidence may be increase.

Compendium as a capacity-building tool

On lessons learnt, it is important that GoU through the PPP unit develop a compendium of PPP case studies. The compendium should include fact sheets for all hydropower projects.

The compendium should include: contracting authority, procurement of PPP, hiring of transaction advisor, PPP type, reasons for PPP, feasibility study summary, PPP structure, financing structure, key success factors, challenges and lessons learnt coupled with performance. Monitoring and evaluation aspects too should be incorporated into each case study. By developing a compendium of procurement and PPP acquisition of projects such as high value complex hydropower dams, contribution to knowledge management of PPPs practice in Uganda can be enhanced.

7.3.2 Choice of PPP (s) model for improving competitiveness for hydro power sector

The choice of PPP (s) model should be approached with caution. The study provides factors that should be considered when choosing to adopt any PPP model in the electricity

sector. The factors should include: financial capacity by government, technical expertise held, and costs of finance. The study recommends the adoption of the Design Build Own Operate Transfer (DBOOT) and additional preferred model for adoption in generation of hydropower for high end complex HPPs. This model is recommended as it transfers design, finance, engineering and operational risks to the private party at a return in form of guarantees to procure power by the state under power purchase agreement. The study also acknowledges that there is no such a thing ‘’ One size, fits it all”. Based on this assertion, the study also confirms that models such as BOT, BOOT, DFBO, O and M, and Management Concessions that have been used have to some extent served the sector well but more value can be achieved if more models like Design Build Own Operate Transfer (DBOOT) alongside recommendations of this study are adopted in the electricity sector.

7.3.3 Procurement of Hydro Power Dam Projects under PPPs or Traditional Procurement Methods

Procurement of dams can be complex and expose PPP projects to delays. Like traditional procurement processes, evaluation committees should coopt experts with legal, environmental, financial and representatives from various Ministries such as Lands, Local Government, Finance, and Investment.By having such expertise and stakeholders, missed issues at evaluation are likely to reduce, increasing chances for completion of hydropower dams.

This enables government and private operators to make loan repayments from revenues generated from the dams, reducing the risk of subordinated/mezzanine loans and their associated costs that come along with high tariffs. This will help to reduce the problem of delayed financial closure. The study recommends the need to follow procurement guidelines as set out in the country’s legal and regulatory framework for acquiring public services, supplies and works. Shielding off the procurement process from political influence peddling can enable the procurement for PPP and broadly HPPs to select the right bidders, avoid administrative reviews and attract more investors to participate in Uganda’s PPP process and projects. It is also important that government considers a shift from design-bid-build to design and build approaches for procurement of construction works including HPPs. By adopting the DB approach, government can reduce costs: achieve delivery of projects much faster and completion within project scope.

7.3.4 Maintaining Social Capital in Design of Resettlement Plans

Acquiring of power dam projects through either procurement and or PPP should consider maintaining social capital of the affected persons. Failure to maintain social fabric and solidarity of affected communities can result into delays and additional costs. This can be reduced by identifying potential location sites that are mutually acceptable for relocation of the entire affected communities. This is motivated by the need to sustain social networks developed over time by those to be resettled. The proposed CPA model can be adopted to support this recommendation.

7.3.5 Establish PPP investment fund

While the PPP Act and Policy recognize the establishment of a PPP Fund, it has not been set. A PPP investment fund is critical for the success of PPPs. Such a fund can contribute to pooled blended finance by providing loans. By providing load to spvs, the fund reduces the time for financial closure, provides lower interest rates, contingent liability guarantees funds and reduces currency losses that are attributable to the high tariff costs. The fund is justified, as it is able to offer loans in local currency, hoard forex, hence reducing the exchange risk losses that have been occurring due to acquiring of debt finance in USD and making sales in UGX, local currency. This may lead to reduction of tariffs for end consumers of electricity. It is further argued that by doing so, the fund can contribute to desirable blended finance options that enable ease of access and short lead times for financial closure. The fund should be catered for in the annual budgeting process and allocated a vote. By having such a fund in place, governments can attract greater confidnece in the PPP market as such funds may provide some guarantee to service service contingent liabilities to investors as demands occur.

7.3.6 Undertake Public Sector Comparator Analysis

A detailed public sector comparator (PSC) should be developed and due diligence undertaken for all hydropower projects. A detailed PSC should involve calculation of nte present values (NPVs), robust cost estimations and revenue forecasts. Cost estimation should incorporate advance payments made at preliminary design stages: include design compromises such as costs of resettlements and alternative livelihoods for the affected, inflation and introduction of new and perhaps advanced standards of delivery of projects. By knowing the PSC outcome, arriving at strategic decision of whether to engage the

private party under PPP or adopt traditional procurement arrangement to acquire hydropower dams.

While the outcome of PSC helps to determine which way to take, this study recommends that government should provide leadership in orientating stakeholders into the appreciation of PPPs and the value that they can deliver. There is need to have PSC reports availed to a greater public for extended due diligence and scrutiny by stakeholders before it is approved. This will help to check hidden and at times unnecessary costs, reduce misconceptions about PPPs. By reducing misconceptions about PPPs, government can help to stimulate necessary cohesion of stakeholders not only in the hydropower and energy sector.

7.3.7 Land Issue

On land issue, the study recommends that the land law be repealed to grant the state compulsory land acquisition rights: government rather the private party should be acquiring land and handle all land related compensations. To make this move, government must be cautious of the 1900 agreement that defined majorly the current land ownership status. Government must identify key landowners and engage in deeper dialogue. Government should design strategic concessions to support the negotiation with key landowners like Buganda and Bunyoro kingdoms that own vast land acreage in key strategic areas for public investments. On the other hand it is important that government secures political will from Local council grass root leaders. Securing goodwill is vital in securing commitment and ownership to the proposed land reforms. Ethiopia, Tanzania and Rwanda can act as benchmarks in making the necessary land reforms.

7.3.8 Resettlement of Project Affected Persons (PAPs)

The issue of resettlement of communities affected by hydropower dams acquired by either traditional procurement or PPPs remains key concern for the not only the affected, but hydropower dam developers, civil society and government. At the heart of resettlement lies issues such as provisioning the affected with destruction of livelihoods, compensation and restoration of livelihoods. While effort has been made to provide compensation as cited in annex 1 and 2 of this study, more is desired. Restoration of livelihoods through buying land for the affected and construction of houses in some instances has been done.

This is good. To manage resettlements sustainability, the study recommends several other initiatives:

a) Ensure that social capital is not destroyed by resettlements. This can be achieved by relocating affected communities as a group in another geography and not in scattered geography.
b) Communications and consultation plan. An office should be dedicated to handle stakeholder issues at site.
c) Open house event faltering issues that affect all stakeholders. In such an event, all affected stakeholders should be requested to attend to a workshop where common issues are discussed.
d) If community infrastructure such as schools, churches, mosques is destroyed, they should be reconstructed in the new areas where countries are to be resettled.
e) A mapping of animal sanctuaries that are likely to be destroyed should be considered. Reconstruction of such sanctuaries elsewhere other than the project implementation site should be considered.
f) Entrepreneurship grant competitions should also be provided to resettled communities with key preference to supporting women and youth business startups. This initiative has been promoted by projects such as Romanche-Gavet Project in France where results are positive (IHA:2015)
g) At times the new geography may not have means of transport. To connect the affected to markets, schools and health facilities, it is important that the project considers construction of roads, donation of transport vehicles like buses to transport people in the short term

By incorporating such aspects in the resettlement strategy, traditional rocurement and PPPs led projects in the hydropower sector are likely to be widely accepted by PAPs if such initiatives (a-g) are incorporated in project designs. For instance in Turkey, it is argued that by imeplementing resettlement programmes such as "Resettlement, Employment and Economic Investments of People Affected by the Birecik Dam," in Turkey, can yield ownership and coomitement to hydropower dams implemented by procurement or PPP route can be widely accepted by PAPs(Gurgun and Touran,2013:04014029). While such programmes can comprise substantial investments, partnership with external partners such as United Development Programme (UNDP) and private firms can turn impossibilities into possibilities.

7.3.9 Robust evaluation process to select the right bidder

The study recommends that while traditional measures such as price, financial capacity, previous experience and staffing capacity was popular in evaluating PPP bids. While these were popular back in the days, risk profiles for bidders have increased. Reducing the risk of selecting the right bidder, it is important that such criteria be extended to capture aspects of competitiveness of the hydropower sector. For instance, aspects such as efficient technology with innovative practice, modularized construction should be considered.

7.3.10 Mindset Change on perceptions about public administration

Internally and among electricity supply chain players, there should be a change in mindset of policy makers that public servants are inefficient. While in some instances public servants have delivered below expectations of politicians, in some and growing spaces public servants have delivered at par with efficiencies.

7.3.11 Improve governance through negotiations and renegotiations

Negotiations and renegotiations are cousins of PPPs. Negotiations constitute a major critical activity of PPPs. While they occur from the onset, renegotiations are bound to occur and re occur in PPPs concessions. The study agrees with other studies that justify renegotiations on the premise that contracts signed today assume that the environment will remain as it is today or can be easily forecasted. While this is ideal, it is never the case! Today's business environment changes incredibly quickly, creating sound ambience for renegotiations. This makes the coexistence of PPPs and renegotiations inseparable. Therefore, by putting in place governance safeguards becomes a must do rather than a choice for PPPs policy makers, implementers and managers. To improve governance, this study recommends the need to design a negotiation framework to be adopted by a selected team of negotiators. Borrowing from experiences in countries such as Columbia and Brazil and from Uganda's traditional procurement practice and law the study recommends that all PPP negotiations and renegotiations should comprise of both internal and external experts form fields such as PPPs, finance, procurement, law, engineering, environment, economist, land usage, anthropology. The skills are recommended based on lessons from hiccups that affect PPPs worldwide. In line with this, the study recommends that such a team will then need to ensure that elements of framework proposed are

incorporated in the concession before it is signed and are operated within during the lifecycle of the concession. These elements of the renegotiated framework are highlighted in the figure below:

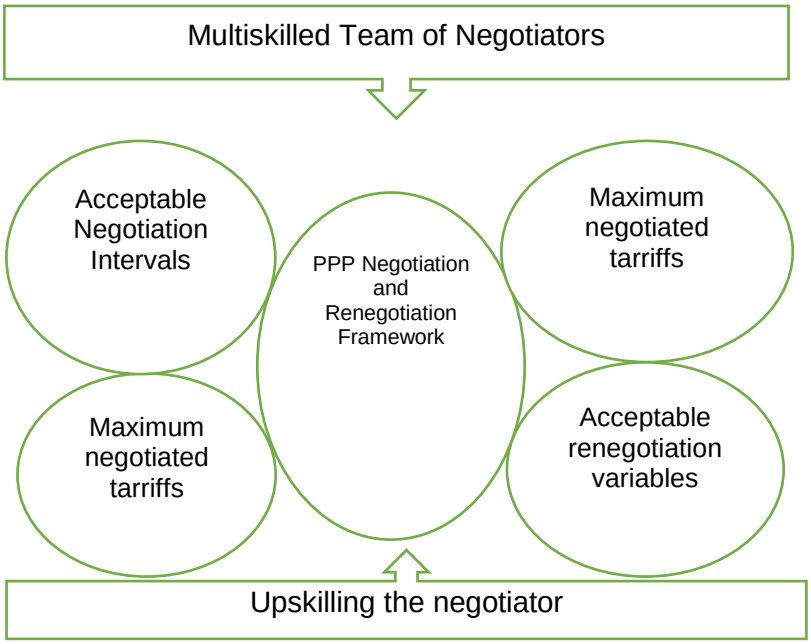

Figure 7.1: Framework for negotiation and renegotiation for PPPs

From the figure 7.1 above, the study recommends that from the onset, the elements such as thresholds on period for which a PPP contract may not be renegotiated, a user price/tariff ceiling beyond which price cannot be increased over the lifetime of the concession, maximum number of times during the concession lifetime and renegotiation variables be inserted into the concession by means of a clause. To reduce potential incidents of delayed financial closure and pulling out from the race by the best evaluated bidder(BEB), it is important that clause be pre-communicated to bidders by insertion into basic clauses section of the bidding documents that such as clause will form a basis for signing up a concession with the BEB. By adoption of such framework contracting authorities can improve governance as the framework provides greater predictability and to some extent stability of tariffs, a key measure of competitiveness of the hydropower power sector from the users and manufacturers perspective. While the structured elements of negotiations are important, it's important to understand that the elements do not drive themselves but require people. Successful negotiations and renegotiations require skills enhancement of negotiations to carry on the task with ease and confidence. To make this happen, the study recommends capacity building enhancement options such

training and mentorship through shadowing. By shadowing, the study implies that prospective negotiators should be given an opportunity to participate in negotiations. By up skilling negotiators PPPs implementers can be bale to neutralize the information asymmetry challenge as castigated by the Principal Agent Theory that guided this study.

7.3.12 Remove political interference in PPPs

PPPs that deliver must be devoid of influence peddling to losers or bidders. Political leaders must desist from interfering with PPP procurement process. As discussed when politicians interfere with the process, the losing bidders become the winners which makes the process of monitoring performance of the PPP Concessions difficult. By eliminating political interference, processes to acquire PPPs increase chances of selecting competent private party. This in turn provides ease in monitoring the performance of the private party (spv) by the contracting authority.

7.3.13 Diversification of PPPs adoption across other electricity sources

While PPPs have increased availability and quality of power in Uganda, tariffs remain high and largely appear unaffordable. The next question should be to answer the affordability challenge.

In answering this challenge, this study recommends that PPPs adoption be spread across other electricity sources such as wind, solar, biomass and other energy sources. By spreading PPPs adoption, we may achieve the result effect in form of reduced cost of tariffs. By diversifying investments across electricity sources, countries like Australia, Ethiopia, South Africa, and Netherlands have been able to reduce the cost of tariffs and improve supply security. This view is in tandem with Dunya, Chen, and Appiah, 2019(72-86) that advocate for ways of improving electricity supply security of supply as a major key aspect in the electricity sector.

Diversification can help to reduce monopolies in generation, giving the state increased bargaining power in negotiating tariffs for loading electricity to the national grid. Reduced tariffs can later result into reduced immunity by citizens to connect to the national grid, increasing the role of citizens as spectators but users of electricity in the energy sector. This can help to reduce electricity tariffs that have stayed access lingering within 20-23, thereby creating demand for alleged access electricity in Uganda.

7.3.14 Managing the Limited Demand Challenge

The study also recommends that government should proactively plan on how to create and sustain demand for the power that hydropower dams create. By having effective demand for power, economies can be enjoyed which can result into reduction of power tariffs, making electricity an available and affordable commodity. Creating effective demand requires strategic effort and integrating all sectors of the economy and a political climate that attract both local and foreign investors. A shift of focus from viewing hydropower as a household commodity to an industrial commodity, for powering production should be promoted. This calls for promotion of the country's industrialization agenda.

Clustered industrialisation strategy can reduce electricity tariffs and generate required demand.

Countries that have improved power access and utilisation have put more focus on industry than domestic use (IHA, 2018:1-15). Manufacturing and processing usually contribute over 70% of electricity consumption. This implies that to increase electricity demand, greater effort should be directed at increasing industrialisation potential and exploitation in the country. By fast-tracking industrialisation, mass consumption of electricity can be guaranteed. While various studies and policies have pointed to tax holidays and land in Uganda this study offers a new direction on how industrialisation can be promoted. The study proposes that to achieve high levels of industrialisation there is need create of free trade zones across the country, providing support not only support not only to foreign investors but support for local industrialists.

This support can take the form of tax rebates, utility serviced land with water and electricity connections. While rebates on refunds policy exists in Uganda to refund industrialists that have spent money on connecting to the grid, the initiative ends up reducing the capital available to invest. Preferably, there is need to provide industrialists already serviced land with all utilities including water, drainage, roads and electricity.

The study instead promotes the theory of clusters to inform industrialisation initiatives aimed at bossing demand for electricity. In this direction,this study posits that sustainable

industrialisation and manufacturing needs to be informed by identification of clusters and grouping firms together when allocating land in trade and manufacturing zones.Porter (1998:77), Delgado, Porter and Stern (2000:15-34): Koliousis, Papadimitriou, Riza, Stavroulakis, and Tsakoumis (2019:43-57), Porter, Delgado & Stern (2010: 495-518) argue that clusters are "geographic concentrations of interconnected companies and institutions in a particular field.

Clusters encompass an array of linked industries and other entities important to competition". By providing location advantage in form of granting land leases to manufacturing or processing firms based on the linkages that the firms offer each other in any cluster and in a given geography such as trade zones, manufacturing units will not only start but sustain their stay in today's 4th industrial revolution. In studies undertaken by Fang (2019:6-18) in Maryland, USA it is also revealed that clusters in manufacturing create innovation which results into increased production. Increased production may result into increased demand for electricity. As firms grow they can generate provide business for start-ups in the same geography or elsewhere that may utilise electricity thus creating more demand, necessary for bringing tariffs down. This situation will create demand of electricity industrial use and consequentially domestic use, as workers will also demand electricity at home for their domestic use.

7.3.15 State owned Enterprises (SOEs) and Municipalities into Distribution

Reverting distribution to municipalities can make power more affordable. This is possible as the private party can be avoided and transactional costs associated with the agency relationship terminated.While the SOEs and municipalities will come along with transactional costs, such costs will usually be built in the consumer end tariff to break even and not to make a profit.

This approach will help in reducing electricity tariffs and create demand necessary for electricity produced by IPPs while reducing exposure to contingent liability risks of unfulfilled electricity demand by the market. There is evidence that SOEs and municipalities can deliver when but only when they are run by competent people, without subsidies and have limited political influence. The National Water and Sewerage Corporation in Uganda, a national water and sewerage utility SOEs has provided this evidence. In annex 10 of NWSC Annual Report (2018:17), the study reveal that NWSC has

increased water coverage, production, connections, extensions and doubled collected from UGX184 billion (20112) to UGX 346.8 billion achieved.

While concessions in electricity distribution have been used, a shift in policy may be considered. In South Africa and Netherlands, municipalities have retained the role of distribution of electricity in some extent. This benchmark can be studied further and a decision made on whether to adopt the policy direction to revert electricity distribution to municipalities, UEDCL or not or hybrid options.

7.4 Theoretical recommendations

Based on review of literature, the study offers theoretical recommendations.

7.4.1 Improve rates of return and establish robust monitoring of ppp firms

Existing studies reveal that PPPs usually turn to profits after 10 years with renegotiations starting from 2.2 years. In the developed world where PPPs are argued to have secured successes, returns on investments are as high as 40% to 60%. While in Uganda and developing countries, return on investment has averaged 10% to 30%. By increasing, PPPs may perform better in Uganda and developing countries. However, this should be accompanied with strict monitoring and performance of the PPP firm.

7.4.2 PPPs are not the only suitable means for public services provision

While PPPs can deliver efficient and effective public services, PPPs must be based on need not as practice of disowning the role of public administration, PPPs should only be brought in to enhance service delivery but not as a prime master of delivering public services.

7.4.3 Managing debt to gross domestic product (GDP) ratio

It is argued that worsening Debt to GDP ratio of a country is likely to influence delay of reaching financial closure. In essence, investors attribute a heavily indebted economy to reduced inability for PPP to recoup its investment. To attract PPP investors, governments must take cautious steps in managing their debt to GDP ratios in order to improve investor confidence.

7.4.4 Political stability and consistency of policy

Political stability has been argued to be one of the critical success factors for attracting PPP investors. Since PPPs are long term (10-33 years), high value investments and with payback period averaging at 10 years, investors' confidence is likely to be influenced by processes necessary for change of political leaders at all levels of leadership. Therefore, putting in place frameworks to guarantee non-turbulent political transitions and consistency of national policies that affect PPPs is paramount.

7.4.5 Extension of Agency Theory to Citizen- Principal-Agency (CPA) Theory

Findings from the study reveal that while hydropower dams are developed to serve interests of citizens, in most cases their interests in the design, implementation and expost management of PPPs are ignored or not well understood.

Based on these findings, the study recommends that some modifications to the Agency Theory. The remodification of such theory Agency Theory is justified to include citizens as at the forefront as citizens define the existence of PPP business relationships. This view is based on the reason that PPPs are about the organization that comes into being to serve interests of the customer. This analogy is consistent with existing management propositions by scholars such as Drucker (1962). The study recommends that the agency model consideres citizens as key stakeholder in the agency theory. In line with such view, the study recomends extending and renaming Agency Theory to Citizen- Principal-Agency (CPA) Theory to recognize citizens as the most vital customer in both procurement and PPPs practice. The figure below provides a diagramatic representation of the working of trhe proposed extended model.

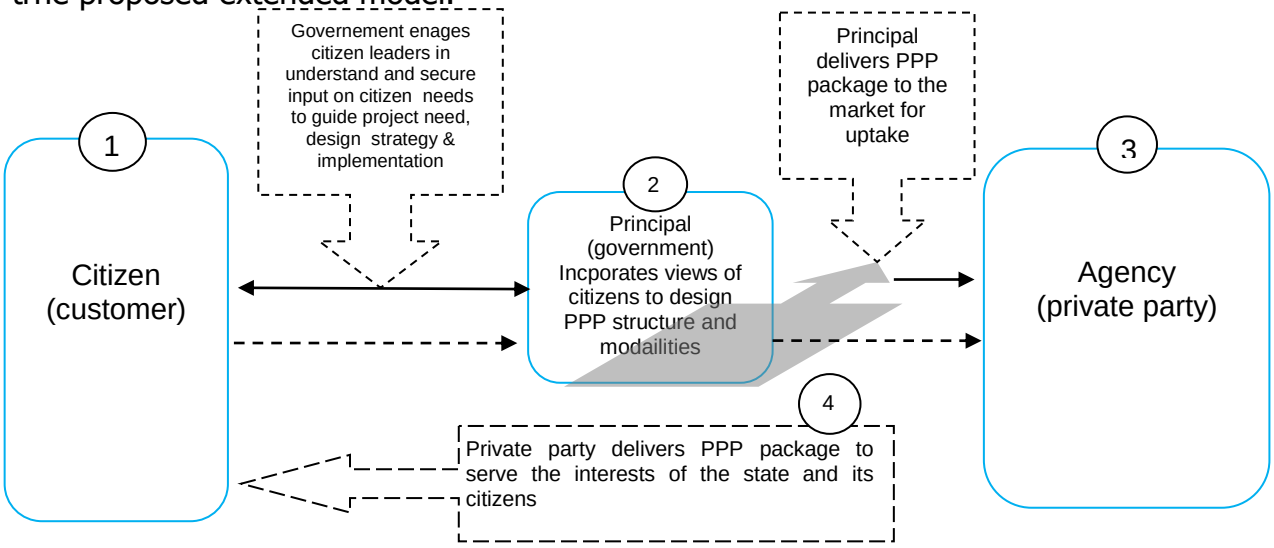

Figure 7.1: Citizen –Principal –Agency (CPA) Model

In the CPA model, this study recommends theory and practice of PPPs should put citizens (1) at the frontier of decisions.The model proposes that government acts on behalf of ctizens as a delegated surbordinate principal (2). By implication, government should

therefore consult citizens in the PPP preparation phase, implementation and on matters associated with PPP exit. Based on views of citizens government should then design a PPP structure that accommodates the interests of citizens. Once this is done, then government as a delegated principal extends this offer market (3). Any modifications of PPP package generated with views of citizens should modified through consultations of the citizens as core principals (4).

Consistent in this view, Bovaird (2007: 846-860) asserts that when citizens are engaged in coproduction of public services, they are likely to commit to the production and delivery process of the service. By definition, coproduction is defined as "the process through which inputs used to provide a good or service are contributed by individuals who are not in the same organization" (Ostrom, 1996:1073). Consistent in this veiw,Ramirez (1999:49) reosnates simailar meaning of coproduction by noting that coproduction is a situation where "value coproduced by two or more actors, with and for each other, with and for yet other actors" ,while Joshi & Moore (2003:1) asserts that coprodution relates to "institutionalized coproduction," as the "provision of public services (broadly defined, to include regulation) through regular, long-term relationships between state agencies and organized groups of citizens, where both make substantial resource contributions"

This upholds the view of Norman (1984:1-18) that argues that in delivery of public services, the citizens act as customer and as part of the delivery value stream. This reechoes that recognizes the importance and criticality of engaging customers first in coproduction and delivery arrangements in service systems.

It is further argued that by involving citizens from the start, government and agents can secure commitment to and ownership to public investments implemented under PPP route. This view is line with the thought that citizens should be involved in production and delivery of services (Streeck, 2012:27-47; Lapsley and Segato, 2019:1-7; Ng, Wong and Wong, 2013:370-381). Consistent in this view, it is asserted that citizens should be treated as customers (Nanos, Papaionnou, Androoustou and Manthou, 2019:120-136). By engaging citizens as customers and putting them at the frontier of decision making, governments are likely to attract more trust from citizens when implementing public projects (Beeri, Uster, and Vigoda-Gadot, 2019:241-279). Adopting a best practice of enecourgaing spvs to list on the stock exchange and allow locals to buy stock like it is for

teh Umeme concession, would promote shared value concept and attarct commitment for PPPs from the local people as users of PPP service.

While it make appears stretching task to consult citizens at all times , Lapsley at al.(2019:1-7) asserts that citizens have an entitlement to be consulted on matters that affect them.This implies that by not consulting citizens,governments risk abusing entitlelments of citizens,a situation that can deliver disastrous outcomes interms of proejct delays, and early exposure to servcing avoidable contingent liabilities in not only traditional procurement but PPP context.

7.4.5.1 Critique of Agency Theory and justification for extension of theory in studying PPPs

While the Agency theory has served its time in theory and practice of procurement and PPPs, this study concludes that the theory may have succeeded post communism era. While Communism collapsed, its effects appeared to have remained for some time providing opportunity for neglect of citizen consultation as consumers of public services.

The growth of capitalism and increased citizen awareness of the nature of quality and quantity of service they should expect from government and its agents in service provision has made the citizen become a key trigger for success of procurement and PPPs.

Similarly in this study, we find that Project Affected Persons (PAPs) of the two projects contributed to project delays and time escalations. By putting citizens at the core of procurement and PPP relationships at birth, implementation stage, termination and aftermath, procurement and PPP projects can secure strides in time and cost management. This study co-joins existing studies that champion the need to include citizens as a key stakeholder of PPPs (Rwelamila, Fewings, and Henjewele, 2014: 4014085: Sharma, 2007:203-210: Hueskes, Verhoest and Block, 2017:1184-1195: Belachew and Shyamasundar, 2013:42-45: Sabri, Jaber and Hanyia, 2010: 4-19: Boyer, Van Slyke, and Rogers, 2015:41-61). The view of putting citizens at the forfraont of PPP engaments and other projects is further supported by Teicher,Alam and Gramberg (2006:85-10) & Halachmi, 2010:np:Wojewnik-Filipkowska and Węgrzyn, 2019:1194-1198:Chen and Man, 2019:142-145: Wang, Liu, Xiong, and Song,2019: 117-130:Friedman,1970:np).

While existing studies have made mention of the importance of stakeholders in projects of such nature,there exists shyness in proposing a revalidation and perhaps a reconfiguration of the choice of stakeholders that render validity of Principal Agent theory advanced by promoters such as Solheim-Kile, Lædre and Lohne, 2019:8756972818824908: Solheim-Kile, and Wald, 2019: 04019030: Derakhshan, Turner and Mancini, 2019:98-116: Shankar Nayak,2019:63-70).

7.4.5.2 Proposed assumptions of Citizen-Principal-Agency Model/Theory

Based on the proposition in extending PAT theory to Citizen-Principal-Agency (CPA) Theory, the study provides assumptions for adoption. The assumption proposed do not exit assumptions of the agency theory but offer an extension to include the influence on citizens

a) Citizens like the principal and agent possess diverse needs that need to be understood and accommodated in traditional procurement of and PPP hydropower projects.
b) Citizens are customers that will consume services delivered by PPP projects. They must be given a chance to contribute to design and implementation of PPPs.
c) Information asymmetry will always exist between the principal and agent but can also occur when dealing with citizens.
d) Opportunism may occur not only between the principal and agent but will also occur in between the former principals and citizens.
e) Citizen engagement in matters of PPPs that affect them enables the derivation of trust, transparency ownership and commitment to PPP projects.
f) By engaging citizens using the CPA model/theory, public administrators deliver on their role of providing accountability to citizens.

7.5 Limitations of the study

A conflict environment confronted the study. The study was around an environment of hydropower tariffs that have been condemned by the President of Uganda as being too high.

Tariffs affect everyone and are therefore not only an economic but also social and political issues. In this environment, the head of state has on several occasions blamed the Bujagali Hydropower PPP as a swindle and that government should consider buying back the dam before the 30 years elapse. While the concession has been renegotiated to 33 years, allegations of corruption and poor performance of electricity sector exists from the user perspective.This notion does not only point to this as a Ugandan issue but an issue that cuts across utility sectors among countries in the developing world. Kenny et al. (2009:1-9) confirms this view that the electricity sector in developing countries contains elements of a conflict environment by coining a term 'grand corruption' that exists among utility agencies in the developing world. Recently government has also been tabled with a proposal to rebundle electricity agencies. This rendered the data that was required for the study to appear a bit sensitive. To manage this challenge, we encouraged participants that the study was purely academic and promised reporting of findings using anonymity.

7.6 Future areas of study

The study provides future study areas:

Based on gender descriptions of participants of the study, there is need to undertake a study on how to secure interest of women in PPPs or glass ceiling and PPPs.

Given the need for effective public-private partnerships, future research should address the issue of incentive bonus and penalty mechanisms for partnerships and unsolicited PPP bids, designing public sector comparators.

Focusing on these variables may spur development of a more sophisticated framework of regulating PPPs. One such avenue includes further study of whether there are differences in criteria weighting and/or the methods used for examining innovation that comes along with unsolicited bids.

Other areas of the study should focus attention on designing and building robust Monitoring and Evaluation frameworks within PPP agreements and marketing of PPPs.

Lastly there is need to undertake a study on Public Sector Comparator Analysis and its influence on selection of PPPs in improving public service provision.

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Exhibit 1: Resettlement Compensation, Karuma HPP Project.

Exhibit 2: Resettlement Compensation, Karuma HPP Project

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Annex 1: Sample Compensation Computation Sheet

0212

THE REPUBLIC OF UGANDA

Ministry of Energy and Mineral Development
Implementation of Resettlement action plan (RAP) and related services
for the Karuma Hydro Power Project

Form (8): Valuation Disclosure Notice

Ref No: .... Date: 23/7/2012

To: Okidi Santo Ali
0777590989

As you must be aware, the Ministry of Energy and Mineral Development (MEMD) together with the Uganda Electricity Generation Company Limited (UEGCL) jointly propose a new Karuma Hydro Power Project.

A Land survey and Property Valuation exercise were conducted as part of the Resettlement Action Plan (RAP) to value all property within the proposed project area. Arising from this exercise, it is visibly clearly that your property Reference Number 126 (Surveyors Rd), as indicated in the Valuation Report approved by the Chief Government Valuer of September 2011, falls within the proposed site.

I hereby disclose to you that your property was lawfully listed and assessed as below:

Property	Description/Number/ Unit	Value (Ug.Shs)
1. Land	0.2034 Acres	—
2. House/Dwelling	1 Earth Graves	300,000 =
3. Compensateable Crops	[illegible] 13, Coffee 21, Banana 32, [illegible]	134,559 499,733

If you do consent to being compensated, please ensure that you meet the compensation team appointed for this purpose to make claim of the total value of Ug. Shs. 499,733/= (in words) Four Hundred Ninety Nine Thousand Seven Hundred Thirty Three Shillings being total value of compensation rightfully due to you and your household.

After receipt of your compensation package, kindly arrange to ensure that you vacate the proposed project site within 3 months from receipt of payment.

23/7/12

For Permanent Secretary

Copies: White to Payee   Pink for File

Annex 2: Sample Compensation Computation Sheet

0492

THE REPUBLIC OF UGANDA

Ministry of Energy and Mineral Development
Implementation of Resettlement action plan (RAP) and related services for the Karuma Hydro Power Project

Form (6): Valuation Disclosure Notice

Ref No: .... Date: 21/7/2012

To: Ofiko Michael
0789543701

As you must be aware, the Ministry of Energy and Mineral Development (MEMD) together wi the Uganda Electricity Generation Company Limited (UEGCL) [illegible] propose a new Karuma Hyd Power Project.

A Land survey and Property Valuation exercise were conducted [illegible] of the Resettlement Actic Plan (RAP) to value all property within the proposed project area. Arising from this exercise, it visibly clearly that your property Reference Number [illegible], as indicate in the Valuation Report approved by the Chief Government Valuer of September 2011, falls with the proposed site.

I hereby disclose to you that your property was lawfully listed and assessed as below:

Property	Description/Number/Unit	Value (Ug. shs)
1. Land	—	—
2. House/Dwelling	—	—
3. Compensatable Crops	Mango 2	280,000

If you do consent to being compensated, please ensure that you meet the compensation team appoint for this purpose to make claim of the total value of Ug. Shs .... (in words) Two Hundred [illegible] Shillings .... being total value of compensation rightful due to you and your household.

After receipt of your Compensation package, kindly arrange to ensure that you vacate the propose project site within 3 months from receipt of payment.

2.12/12

For Permanent Secretary

Annex 3: CAD Clearance Letter

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
VAAL TRIANGLE CAMPUS

PO Box 1174, Vanderbijlpark
South Africa 1900

Tel: 016 910-3111
Fax: 016 910-3116
Web: http://www.nwu.ac.za

Basic Sciences
Central Committee for Advance Degrees (C-CAD)
Tel: 0169103483
Email: charmaine.lekonyane@nwu.ac.za

15 December 2016

Mr A Nduhura (Review 29)

Student no: 28396715

Research title as approved by the CAD committee:

Public Private Partnerships and the competitiveness of hydroelectricity sub sector in Uganda: Case of Karuma Dam Project

Dear Mr Nduhura

This letter serves to confirm that your PhD-research proposal has been approved by the Central Committee of Advanced Degrees in the School of Basic Sciences.

Committee members involved:

Present (Internal C-CAD reviewer of a combined report submitted by the Subject Group Public Management)	**External reviewers** (non-CAD reviewers)
Prof JWN (Johann) Tempelhoff	Reviewers recruited by the Subject-CAD were: Dr. Thekiso Molokwane Prof Costa Hofisi (Internal and a CAD-Mamber)

The ethics application is referred to the:

* Research Ethics Committee- BaSSREC:_X___.

* Research Ethics Committee-HHREC:_____.

You have received the details on the procedure that you will have to follow to submit to the Ethics Committee as indicated. For the CAD-records, please inform Ms B (Charmaine) Lekonyane (CAD-secretariat) when the ethical submission has been successfully completed and approved.

Yours sincerely

Prof Elize van Eeden
Chairperson: Committee of Advanced Degrees Basic Sciences

Annex 4: Focus Group Guide

FOCUS GROUP DISCUSSION GUIDE FOR PPPs SCHOLARS AND PROCUREMENT PROFESSIONALS AND PRACTIONERS

1. Welcome

My name is Alex Nduhura pursuing a PhD in Public Management and Governance at North West University, Vaal Triangle Campus, and South Africa.

2.0 Our topic is **"Public Private Partnership and Competitiveness of the Hydro Electricity Subsector in Uganda: Case of Karuma Dam Project"**.

- This study aims identifying the most appropriate PPPs Model for improving competitiveness of the hydroelectricity subsector in Uganda. The participants of this study include members of Private Sector Foundation (PSFU), Uganda Manufacturers Association (UMA), Ministry of Finance, Planning and Economic Development (MFPED) ,National Planning Authority(NPA),PPP contracttors,Domestic hydroelectricity users, UMEME (hydro power distributor), Electricity Regulatory Authority(ERA),Public Procurement & Disposal Authority(PPDA),Uganda Investment Authority(UIA),Strategy and PPPs scholars, and Procurement Professionals In Uganda.
- You have been selected as one of the respondents and kindly requesting for your time and cooperation to respond to the questions in this discussion. Please note that this discussion is voluntary and you may withdraw at any time especially if you feel the study is causing any mental, emotional or physical harm. The researcher will uphold and guarantee confidentiality and anonymity (use of pseudo names on subjects).
- The information gathered from this discussion will be used for academic purposes only and the responses will be kept for the duration stipulated by the University.
- Our discussion will 1hour to complete. We will strictly operate within this time. Once again allow me to re-enforce the request for you to participate in this study.

3.0 Guidelines

- There are no right and wrong answers, but differing viewpoints. Please note that we are interested in both the positive and negative comments.
- You don't need to agree with others, but we must listen respectfully as other share their views
- We ask that each one of us turns their phone in silence mode so that we can have a fruitful and incepted session
- My role as a moderator will be to guide the discussion
- Let's now talk to each other
- We have placed name cards where you're seated to help us remember each other's first name. To know more about you, kindly share with us your name and where you work
- At the end of the session we shall summarise and circulate opinions shared to confirm with members that the summary contains all views we will have discussed

4.0 Let's Begin The Discussion

4.1 PPPs in Uganda are implemented within a legal and regulatory framework in Uganda

- Do your know this?
- In your view is the current law and regulatory framework adequate in delivering PPPs capable of improving competitiveness of the hydroelectricity subsector?

4.2 What's your perception about the competitiveness of Uganda hydroelectricity subsector?

4.3 In your opinion, what are the common PPPs implemented in improving competitiveness of Uganda's hydroelectricity subsector?

4.4 From your experience, and knowledge what are the lessons that GoU can learn in order to improve PPP implementation aimed at improving competitiveness of the hydroelectricity subsector?

4.5 Tell us about the disappointments that you have observed during implementing of PPPs in Uganda hydroelectricity subsector?

4.6 Tell us about the positive experiences in PPP implementation that you believe are likely to contribute to improving competitiveness of the hydroelectricity subsector?

4.7 In your opinion what would be the most appropriate PPPs model(s) that you believe would help Uganda to improve competitiveness of her hydroelectricity subsector

4.8 Why do you think that the PPP model suggested would be the best model to adopt? Or what do you think great with your suggested model compared to the exiting PPP models being implemented?

4.9 From your experience and knowledge, what are some possible recommendations that you believe should be considered as GoU continues to use PPPs to improve competitiveness of the hydroelectricity subsector

Annex 5: Interview Guides

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VAAL TRIANGLE CAMPUS

INTERVIEW GUIDE

1. **MINISTRY OF ENERGY AND NATURAL RESOURCES DEVELOPMENT**
2. **ELECTRICITY REGULATORY AUTHORITY**
3. **UGANDA INVESTMENT AUTHORITY(UIA)**
4. **UGANDA ELECTRCITY GENERATION COMPANY LIMITED**
5. **UMEME COMPANY LIMITED**

My name is Alex Nduhura pursuing a PhD in Public Management and Governance at North West University, Vaal Triangle Campus, and South Africa. My thesis is entitled **"Public Private Partnership and Competitiveness of the Hydro Electricity Subsector in Uganda: Case of Karuma Dam Project"**. This study aims identifying the most appropriate PPPs Model for improving competitiveness of the hydroelectricity subsector in Uganda. The participants of this study include members of Private Sector Foundation (PSFU), Uganda Manufacturers Association (UMA), Ministry of Finance, Planning and Economic Development (MFPED) ,Uganda Electricity Generation Company Limited, National Planning Authority (NPA),PPP contractors, Domestic hydroelectricity users, UMEME(hydro power distributor), Electricity Regulatory Authority(ERA),Public Procurement & Disposal Authority(PPDA),Uganda Investment Authority(UIA),Strategy and PPPs scholars, and Procurement Professionals In Uganda.

You have been identified as one of the respondents and kindly requesting for your time and cooperation to respond to the questions in this interview. Please note that this interview is voluntary and you may withdraw at any time especially if you feel the study is causing any mental, emotional or physical harm. The researcher will uphold and guarantee confidentiality and anonymity (use of pseudo names on subjects). The information gathered from the participants will be used for academic purposes only and the responses will be kept for the duration stipulated by the University.

Date _____
Time _____
Location _____
Name of Interviewer:
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Interviewee
_____
Gender_____
_

Age_____
_
Highest Education
qualification_____
Number of years worked in the
organisation_____

Notes to interviewee:

- Thank you for your participation. I believe your input will be valuable to this research
- and in helping Uganda achieve more from adoption of PPPs in the hydroelectricity sub sector
- Confidentiality of responses is guaranteed
- Approximate length of interview: 40 minutes

Your participation will be greatly appreciated.

1. What is the current PPPs legal and regulatory framework in Uganda? Probe to establish the key players?
2. What role does your organisation play in the current PPP framework at Karuma Dam?
3. What defines competitiveness of the hydroelectricity subsector in Uganda?
4. Can PPPs improve competitiveness of the hydroelectricity subsector in Uganda?
5. What are the challenges impeding performance of PPPs in the hydroelectricity subsector and Karuma Dam?
6. What do you think are some of the areas that need to be improved in order to improve PPPs performance in Uganda hydroelectricity subsector?
7. What needs to be done to improve PPPs performance in the hydroelectricity subsector?
8. What lessons can we learnt from use of PPPs in improving competitiveness of the hydroelectricity subsector in Uganda?
9. In your view, what would be an ideal PPP for improving competitiveness of hydroelectricity subsector in Uganda?

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
VAAL TRIANGLE CAMPUS

INTERVIEW GUIDE TO MINISTRY OF FINANCE, PLANNING AND ECONOMIC DEVELOPMENT & NATIONAL PLANNING AUTHORITY

My name is Alex Nduhura pursuing a PhD in Public Management and Governance at North West University, Vaal Triangle Campus, and South Africa. My thesis is entitled **"Public Private Partnership and Competitiveness of the Hydro Electricity Subsector in Uganda: Case of Karuma Dam Project"**. This study aims identifying the most appropriate PPPs Model for improving competitiveness of the hydroelectricity subsector in Uganda. The participants of this study include members of Private Sector Foundation (PSFU), Uganda Manufacturers Association (UMA), Ministry of Finance, Planning and Economic Development (MFPED) ,Synodyhro Corporation Limited, Uganda Electricity Generation Company Limited, National Planning Authority(NPA),PPP contracttors,Domestic hydroelectricity users, UMEME(hydro power distributor), Electricity Regulatory Authority(ERA),Public Procurement & Disposal Authority(PPDA),Uganda Investment Authority (UIA),Strategy and PPPs scholars, and Procurement Professionals In Uganda.

You have been identified as one of the respondents and kindly requesting for your time and cooperation to respond to the questions in this interview. Please note that this interview is voluntary and you may withdraw at any time especially if you feel the study is causing any mental, emotional or physical harm. The researcher will uphold and guarantee confidentiality and anonymity (use of pseudo names on subjects). The information gathered from the participants will be used for academic purposes only and the responses will be kept for the duration stipulated by the University.

Date _____
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Location _____
Name of Interviewer:
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Interviewee
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Gender_____
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Age_____
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Highest Education qualification_____
Number of years worked in the organisation_____

Notes to interviewee:

- Thank you for your participation. I believe your input will be valuable to this research

- and in helping Uganda achieve more from adoption of PPPs in the hydroelectricity sub sector
- Confidentiality of responses is guaranteed
- Approximate length of interview: 40 minutes

Your participation will be greatly appreciated.

1. What is the current PPPs legal and regulatory framework in Uganda? Probe to establish the key players?
2. What role does your PPP Unit play in the current PPP framework at Karuma Dam?
3. The 4th Economic Update on state of Public Investments in Uganda by World Bank (2016) reveals that Uganda returns on public investments over the last decade in Uganda are not feasible. For every $1 investment returns are 70 cents. Among such investments have include Bujagali Dam, Karuma Dam etc.! What your take on this? Probe and connect competitiveness with returns with particular emphasis on competitiveness of the hydroelectricity subsector
4. What defines competitiveness of the hydroelectricity subsector in Uganda?
5. Can the current PPPs improve competitiveness of the hydroelectricity subsector in Uganda?
6. What are the challenges impeding performance of PPPs in the hydroelectricity subsector and Karuma Dam?
7. What do you think are some of the areas that need to be improved in order to improve PPPs performance in Uganda hydroelectricity subsector?
8. What needs to be done to improve PPPs performance in the hydroelectricity subsector?
9. What lessons can we learnt from use of PPPs in improving competitiveness of the hydroelectricity subsector in Uganda?
10. In your view, what would be an ideal PPP for improving competitiveness of hydroelectricity subsector in Uganda?

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NOORDWES-UNIVERSITEIT
VAAL TRIANGLE CAMPUS

INTERVIEW GUIDE TO HYDRO ELECTRICITY USERS, PRIVATE SECTOR FOUNDATION UGANDA (PSFU) & UGANDA MANUFACTURES ASSOCIATION (UMA)

My name is Alex Nduhura pursuing a PhD in Public Management and Governance at North West University, Vaal Triangle Campus, South Africa. My thesis is entitled **"Public Private Partnership and Competitiveness of the Hydro Electricity Subsector in Uganda: Case of Karuma Dam Project"**. This study aims identifying the most appropriate PPPs Model for improving competitiveness of the hydroelectricity subsector in Uganda. The participants of this study include members of Private Sector Foundation (PSFU), Uganda Manufacturers Association (UMA), Ministry of Finance, Planning and Economic Development (MFPED) , Uganda Electricity Generation Company Limited, National Planning Authority(NPA),PPP contracttors,Domestic hydroelectricity users, UMEME(hydro power distributor), Electricity Regulatory Authority(ERA),Public Procurement & Disposal Authority(PPDA),Uganda Investment Authority(UIA),Strategy and PPPs scholars, and Procurement Professionals In Uganda.

You have been identified as one of the respondents and kindly requesting for your time and cooperation to respond to the questions in this interview. Please note that this interview is voluntary and you may withdraw at any time especially if you feel the study is causing any mental, emotional or physical harm. The researcher will uphold and guarantee confidentiality and anonymity (use of pseudo names on subjects). The information gathered from the participants will be used for academic purposes only and the responses will be kept for the duration stipulated by the University.

Date _____
Time _____
Location _____
Name of Interviewer:
_____
Interviewee
_____
Gender_____
_
Age_____
_
Highest Education qualification_____
Number of years worked in the organisation_____

Notes to interviewee:

- Thank you for your participation. I believe your input will be valuable to this research
- and in helping Uganda achieve more from adoption of PPPs in the hydroelectricity sub sector
- Confidentiality of responses is guaranteed

- Approximate length of interview: 40 minutes

Your participation will be greatly appreciated.

1. In your business operations, hydroelectricity constitutes some percentage of cost of production. Could you know how much (in terms of percentage) hydroelectricity power constitutes in your costing model.
2. What does competitiveness of the hydroelectricity subsector mean to you?
3. Do you support the view that PPPs can help to deliver competitiveness of the hydroelectricity subsector in Uganda?
4. Are you familiar with the PPP project at Karuma Dam? Probing to check if there is un understanding of PPP while providing insight on what a PPP is.
5. What do you think would be the advantage that Karuma Dam would provide in improving competitiveness of the hydroelectricity subsector?
6. What are the challenges that the hydroelectricity subsector faces in implementing PPPs in Uganda?
7. What do you think needs to be done to improve PPPs in the hydroelectricity sub sector?

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NOORDWES-UNIVERSITEIT
VAAL TRIANGLE CAMPUS

INTERVIEW GUIDE: PUBLIC PROCUREMENT AND DISPOSAL OF ASSETS AUTHORITY (PPDA)

My name is Alex Nduhura pursuing a PhD in Public Management and Governance at North West University, Vaal Triangle Campus, and South Africa. My thesis is entitled **"Public Private Partnership and Competitiveness of the Hydro Electricity Subsector in Uganda: Case of Karuma Dam Project"**. This study aims identifying the most appropriate PPPs Model for improving competitiveness of the hydroelectricity subsector in Uganda. The participants of this study include members of Private Sector Foundation (PSFU), Uganda Manufacturers Association (UMA), Ministry of Finance, Planning and Economic Development (MFPED) , Uganda Electricity Generation Company Limited ,National Planning Authority(NPA),PPP contracttors,Domestic hydroelectricity users, UMEME(hydro power distributor), Electricity Regulatory Authority(ERA),Public Procurement & Disposal Authority(PPDA),Uganda Investment Authority(UIA),Strategy and PPPs scholars, and Procurement Professionals In Uganda.

You have been identified as one of the respondents and kindly requesting for your time and cooperation to respond to the questions in this interview. Please note that this interview is voluntary and you may withdraw at any time especially if you feel the study is causing any mental, emotional or physical harm. The researcher will uphold and guarantee confidentiality and anonymity (use of pseudo names on subjects). The information gathered from the participants will be used for academic purposes only and the responses will be kept for the duration stipulated by the University.

Date _____
Time _____
Location _____
Name of Interviewer:
_____
Interviewee
_____
Gender_____
_
Age_____
_
Highest Education qualification_____
Number of years worked in the organisation_____

Notes to interviewee:

- Thank you for your participation. I believe your input will be valuable to this research
- and in helping Uganda achieve more from adoption of PPPs in the hydroelectricity sub sector
- Confidentiality of responses is guaranteed
- Approximate length of interview: 40 minutes

Your participation will be greatly appreciated.

1. As a regulator of public procurement and disposals of public assets authority, can you share with me the current legal and regulatory framework and process for acquiring PPPs?
2. Karuma Dam is one of the biggest PPP project that the country has been involved in! Can you share with me, the strengths and weakness associated with the project?
3. Competitiveness of the hydroelectricity sub sector is important in any country! How would you define competitiveness of the hydroelectricity sub sector?
4. Karuma dam is currently being implemented under a private finance initiative (PFI) PPP arrangement. In your view, is this the best PPP model that Uganda should adopt to improve competitiveness of the hydro electricity sector competitiveness?
5. If no or yes, what is your justification?
6. In your view, what do you recommend as the most appropriate PPP model for improving competitiveness of the hydroelectricity subsector?
7. Why would you, justify your choice of PPP model mentioned?
8. If the existing PFI PPP arrangement is maintained at Karuma Dam and the entire hydroelectricity subsector, what needs to be improved for the government of Uganda (GoU)

INTERVIEW GUIDE: SINOHYDRO COPORATION LIMITED

My name is Alex Nduhura pursuing a PhD in Public Management and Governance at North West University, Vaal Triangle Campus, and South Africa. My thesis is entitled **"Public Private Partnership and Competitiveness of the Hydro Electricity Subsector in Uganda: Case of Karuma Dam Project"**. This study aims identifying the most appropriate PPPs Model for improving competitiveness of the hydroelectricity subsector in Uganda. The participants of this study include members of Private Sector Foundation (PSFU), Uganda Manufacturers Association (UMA), Ministry of Finance, Planning and Economic Development (MFPED) , Uganda Electricity Generation Company Limited ,National Planning Authority(NPA),PPP contractors,Domestic hydroelectricity users, UMEME(hydro power distributor), Electricity Regulatory Authority(ERA),Public Procurement & Disposal Authority(PPDA),Uganda Investment Authority(UIA),Strategy and PPPs scholars, and Procurement Professionals In Uganda.

You have been identified as one of the respondents and kindly requesting for your time and cooperation to respond to the questions in this interview. Please note that this interview is voluntary and you may withdraw at any time especially if you feel the study is causing any mental, emotional or physical harm. The researcher will uphold and guarantee

confidentiality and anonymity (use of pseudo names on subjects). The information gathered from the participants will be used for academic purposes only and the responses will be kept for the duration stipulated by the University.

Date _____
Time _____
Location _____
Name of Interviewer:
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Interviewee
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Gender_____
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Age_____
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Highest Education
qualification_____
Number of years worked in the
organisation_____

Notes to interviewee:

- Thank you for your participation. I believe your input will be valuable to this research
- and in helping Uganda achieve more from adoption of PPPs in the hydroelectricity sub sector
- Confidentiality of responses is guaranteed
- Approximate length of interview: 40 minutes

Your participation will be greatly appreciated.

1. As an Engineering Procurement and Contracting (EPC) contractor, can you share with me your experience in the construction of Karuma Dam under a Private Finance Initiative (PFI) PPP arrangement?
2. Karuma Dam is one of the biggest PPP project that the country has been involved in! Can you share with me, the strengths and weakness associated with the project?
3. Competitiveness of the hydroelectricity sub sector is important in any country! How would you define competitiveness of the hydroelectricity sub sector?
4. Karuma dam is currently being implemented under a private finance initiative (PFI) PPP arrangement. In your view, is this the best PPP model that Uganda should adopt to improve competitiveness of the hydro electricity sector competitiveness?
5. If no or yes, what is your justification?
6. In your view, what do you recommend as the most appropriate PPP model for improving competitiveness of the hydroelectricity subsector?
7. Why would you, justify your choice of PPP model mentioned?

8. If the existing PFI PPP arrangement is maintained at Karuma Dam and the entire hydroelectricity subsector, what needs to be improved for the government of Uganda (GoU)

Annex 6: Informed Consent Form

Informed consent document

Title of the study**: Public Private Partnerships and their role in Improving Competitiveness of Hydro Electricity Subsector in Uganda: Case of Karuma Dam Project**

Investigator(s) : **Alex Nduhura**

Institution(s) : **North West University, Vaal University South Africa**

Introduction

Briefly introduce the investigator and the study. This informed consent explains the study to you. After the study has been explained, any questions you may have are answered, and you have decided to participate in the study, you will be asked to sign a consent, which you will be given a copy to keep.

Purpose

The study seeks to inquiry into how Government of Uganda (GoU) can use PPPs to improve competitiveness of its hydroelectricity energy sector.

The findings of this study will help to GoU Public private partnerships are considered as a means through which government can adopt to deliver public services efficiently and effectively to its citizens and a broad spectrum of stakeholders (World Bank, 2015:1). The complexity of adoption PPPs in Uganda's hydroelectricity subsector sector will be highlighted. The study is quite unique as none of this kind of study has ever been carried out in Uganda. It is envisaged that the end of this study, best practices will be identified and new knowledge added to theory and practice of PPPs in Uganda's energy sector.
Furthermore the study will provide information that is necessary for selection of the most appropriate PPPs for adoption in the hydroelectricity sub sector in Uganda. The study will also avail a definition of competitiveness of hydroelectricity sub sector in Uganda to guide

strategic decisions necessary to improve overall competitiveness of Uganda. It will provide a contribution to existing scientific knowledge in understanding PPPs and their role in contributing to competitiveness of the hydroelectricity sub sector in Uganda. Lessons from the study will help in policy makers in designing and implementing PPP agreements that will helps in improving competitiveness of the hydroelectricity subsector in Uganda.

Procedures:
Your participation in this study will through an in-depth interview and others in a focus group discussions. The researcher will contact you and schedule a meeting at a convenient time and place for the interview.

Who will participate in the study?

You have been chosen to participate in this study because you have insights, opinions, ideas and experiences on the concepts covered by this study.

The interview will last for approximately 1 hour at most.

Risks/discomforts:

There is no foreseeable risk of harm or discomfort that will arise from your participation in this study. The only risk or discomfort will be the inconvenience in terms of time spent during the interview.

Benefits:

Explain all the potential benefits.

Confidentiality:
Your identity will not be revealed to any one as we shall only use codes to identify participants. Information obtained will only be accessible by the research team. Soft copies of the data will be protected by password and hard copy files will be kept under lock and key. Confidential information will only be accessed by the principal investigator.

Alternatives:
You do not have to participate in this study if you are not interested. You will not lose any benefit in case of no participation.
Cost:
There will not be any additional cost incurred as a result of participating in this study.

Questions:

If you have any questions related to the study, or your rights as a research participant, you can contact the principal investigator, Alex Nduhura on telephone number **+256702666602/+256772666602** or via email on **nduhuraa@gmail.com**

Statement of voluntariness:

Participation in the research study is voluntary and you may join on your own free will. You have a right to withdraw from the study at any time without penalty.

If you have any issues pertaining to your rights and participation in the study, please contact the Chairperson, Gulu University Research Ethics Committee, Dr. Gerald Obai Tel: No., 0772305621: email: lekobai@yahoo.com/lekobai@gmail.com: or the Uganda National Council for Science and Technology, on plot 6 Kimera road, Ntinda, Kampala on Tel 0414705500.

Annex 7: Statement of consent

NORTH-WEST UNIVERSITY ®
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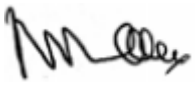
VAAL TRIANGLE CAMPUS

..... has described to me what is going to be done, the risks, the benefits involved and my rights as a participant in this study. I understand that my decision to participate in this study will not affect me in any way. In the use of this information, my identity will be concealed. I am aware that I may withdraw at anytime. I understand that by signing this form, I do not waive any of my legal rights but merely indicate that I have been informed about the research study in which I am voluntarily agreeing to participate. A copy of this form will be provided to me.

Name: Signature of participant: Date:

Name : **Alex Nduhura** Signature of Interviewer:  Date: **11/07/2017**

Annex 8: UNCST Study Approval

Study Approval - (SS193ES) Inbox ×

Research Management - UNCST <research@uncst.go.ug> Tue, Oct 16, 2018, 11:58 AM

to me

Uganda National Council for Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

Dear Alex Nduhura,

I am pleased to inform you that on **16/10/2018**, the Uganda National Council for Science and Technology (UNCST) approved your study titled, **PUBLIC PRIVATE PARTNERSHIPS AND THE COMPETITIVENESS OF HYDRO ELECTRICITY ENERGY SUB SECTOR IN UGANDA; CASE OF KARUMA AND BUJAGALI POWER DAM PROJECTS**. The Approval is valid for the period of **16/10/2018** to **16/10/2021**.

Your study reference number is **SS193ES**. Please, cite this number in all your future correspondences with UNCST in respect of the above study.

Please, note that as Principal Investigator, you are responsible for:

1. Keeping all co-investigators informed about the status of the study.
2. Submitting any changes, amendments, and addenda to the study protocol or the consent form, where applicable, to the designated local Research Ethics
3. Notifying UNCST about the REC or lead agency approved changes, where applicable, within five working days.
4. For clinical trials, reporting all serious adverse events promptly to the designated local REC for review with copies to the National Drug Authority.
5. Promptly reporting any unanticipated problems involving risks to study subjects/participants to the UNCST.
6. Providing any new information which could change the risk/benefit ratio of the study to the UNCST for review.
7. Submitting annual progress reports electronically to UNCST. Failure to do so may result in termination of the research project.

Please, note that this approval includes all study related tools submitted as part of the application.

Yours sincerely,

Hellen Opolot
For: Executive Secretary
UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Uganda National Council for Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

Annex 9: Eskom Concession in jeopardy

BUSINESS

NEW VISION, Wednesday, March 6, 2019 43

Legislators want Eskom concession terminated

By Benon Ojiambo

The parliamentary committee on natural resources has recommended the immediate termination of Eskom's concession over the mismanagement of Nalubaale and Kiira hydropower plants.

Eskom is currently operating a 20-year concession through which it operates and maintains both Nalubaale and Kiira dams of 180MW and 200MW capacity respectively.

Nalubaale dam, formerly known as the Owen Falls Dam, was commissioned in 1954 and was then the symbol of national pride for Uganda.

The recommendations were made after the committee visited the plants in Jinja over the weekend.

The visit followed concerns raised by the Uganda Electricity Generation Company Limited (UEGCL) and later captured by the Auditor General's report.

"We should have terminated Eskom's concession long ago," Simon Oyet, the Nwoya County MP and shadow minister for energy, said.

Cracks

During a visit to the plants in Jinja, the parliamentarians were shocked to learn of the deep cracks that had developed at Uganda's oldest power station.

"There are fears that if we suffered any natural catastrophe such as an earth quake, it may bring the plant down," Dr Keefa Kiwanuka, the committee chairperson and Kibuga East MP, said.

According to Eskom, the

Eskom's Stephen Byaruhanga (left) interacts with Rubanda West MP Denis Sabiiti at one of the cracks at the Nalubaale hydropower plant

MPs asked UEGCL with explaining what they had been doing as Eskom failed to execute its contractual obligations of maintaining the plant.

Mutkunga said they could not enforce compliance on Eskom due to a 'weak' Concession and Assignment Agreements (CAA) that his organisation signed.

"The CAA is very weak and favoured Eskom against UEGCL. This explains why we have not terminated their concession," he said.

He added that they were in the process of amending the agreement

non compliance.

He also revealed that the company plans to take over operation and maintenance of Kiira and Nalubaale plants in 2023 after the expiry of Eskom's 20-year concession.

This was alluded to by Kiwanuka, who said there was need to go into transitional arrangement of handing over the two plants to UEGCL in 2023.

Kiwanuka said the Government needs to think about the termination costs owed to Eskom as per the concession agreement, something that he described as

the dam safety," Mutkunga said.

"When Eskom started executing the concession, all Nalubaale's 10 units were functional but currently, there is a unit that has not been working for about three years. Because of inadequate maintenance, there are so many unplanned outages that affect the plant's performance," he added.

Mutkunga further explained that the company was supposed to refurbish the plant based on prudent utility practices.

This, according to him, involves refurbishing the plant after every 10 years, something Eskom have not done in their time since the plant was last refurbished over 20 years ago.

Gangi, however, said her company had invested about $29m over the last 15 years and hope to invest about $55m by the end of their investment in 2023.

"It might not be as quickly as it was anticipated but we have invested in the asset," Gangi said, explaining that they invested $7.63m last year.

This was disputed by Kiwanuka, who said Eskom claiming to have invested $7m in the last one year alone was a little puzzling when over the

FOREX Rates

CURRENCY	BUY	SELL
US Dollar	3685	3705
Euro	4150	4250
Pound	4840	4950
Kenya sh	36.5	37
1Z sh	1.5	1.61
Dhiram	980	1020
S.A. Rand	262	272
Japanese yen	33	35
Rwandese francs	3.7	4.7
Dollar millionail	3600	3705

Compiled by Harriet Birungi

RATES ARE SUBJECT TO CHANGE

UGANDA'S BUSINESS CONDITION IMPROVES

By Samuel Sanya

The Stanbic Bank Purchase Managers' Index (PMI) for February has recorded further improvement in the business conditions in the Ugandan private sector. Although the PMI headline posted a slight adjustment of 54.4 in February, down from 57.5 in January, the score is still above the 50.0 no-change mark for the 25th consecutive month.

Jibran Qureishi, the East African regional economist at Stanbic Bank, said the latest PMI reading continues to point to a recovery in the economy.

"Despite the PMI declining, overall activity in the private sector remains robust," he said.

"Improving domestic demand has not been a coincidence, considering that the banking sector non-performing loans have eased. This has in turn boosted private sector credit growth. Oil-related investments later on in the year will only add to this stronger growth," Qureishi added.

According to Bank of Uganda, private sector credit was steadily recovering from shocks due to improved economic activity, improvement in asset quality and associated easing of credit conditions.

The February PMI report shows a stronger client demand and the

BusinessNEWS

FTSE Up at 7179.02

CAC

Annex 10: UMEME Concession in turbulence

Daily Monitor NEWS BUSINESS OPED SPECIAL REPORTS MAGAZINES SPORTS LIF

Home / News / National

MPs terminate Umeme concession

THURSDAY MARCH 27 2014

In Summary

In its place, the House recommended that the government should open up the power distribution sector to competition. Under present rules, House resolutions are, however, not binding on the government but generally

By NELSON WESONGA & YASIIN MUGERWA

PARLIAMENT.

MPs yesterday resolved that concessions to power distribution and generation firms Umeme and Eskom, respectively, be terminated immediately.

MPs yesterday resolved that concessions to power distribution and generation firms UMEME and Eskom, respectively, be terminated immediately.

In its place, the House recommended that the government should open up the power distribution sector to competition. Under present rules, House resolutions are, however, not binding on the government but generally considered as advice, which can be taken or ignored, albeit with certain political ramifications.

Under the agreement, UMEME's concession runs out in 2025. Senior officials at the company never returned repeated calls by press time yesterday. The Eskom 20-year generation concession was to end in 2022.

Parliament also said the option of a Public-Private Partnership in the distribution sector, with the government having a 51 per cent stake, be adopted.

Parliament sanctioned the termination on the basis of a statement by an official from the Attorney General's Chambers in 2011 that the AG did not draft the concession agreements between UMEME and the government as is required by the Constitution.

Should the government implement the resolution which follows a recommendation of the Ad Hoc Committee on Energy, Uganda would have to pay UMEME Shs526.3b in compensation.

The Shs526.3b is 120 per cent of the ($172m) Shs438.6b, which, according to UMEME's 2013 audited accounts, is its unrecovered investment base.
It remains to be seen how potential foreign investors will respond to the news. But it sure will concern UMEME's estimated 6,500 shareholders.

Parliament heard that even if government does not initiate the termination, at the end of the agreement, taxpayers would still pay UMEME a buy-out amount of $129.15m under the Natural Termination of the Concession Agreements provision which was pencilled into the contract MPs observed was bad because it was allegedly skewed in favour of the company.

The decision comes just five days after UMEME announced improved revenue collections driven by an increase in energy sales.
It also comes against the backdrop of a public show of confidence by Energy minister Irene Muloni that the UMEME concession would not be terminated.

Many MPs yesterday shouted down Prime Minister Amama Mbabazi when he proposed that the agreements should be reviewed.

"If termination is to be considered, it must be considered carefully so that it does not result in greater damage. Therefore, I would advise that Parliament does not take this decision now about the termination," said Mr Mbabazi.

The Leader of the Opposition in Parliament, Mr Wafula Oguttu, said the government does not want to terminate the UMEME concession.
"The reasons the minister has given are not good. We are in a catch-22 situation. Either way we have to pay UMEME. So we are saying let us pay now. This contract must be terminated today," said Mr Oguttu.

Mr Mbabazi said the government would consider the House recommendation.
Ms Kabakumba Masiko, Bujenje MP, said though many Ugandans hold shares in the UMEME, the company could engage in other business.

"It is true people have shares in UMEME. But when we terminate the contract, we would not be liquidating UMEME Ltd. It could continue with other businesses and it could get more contracts," she said.

Mr Geoffrey Ekanya, Fox Odoi and John Kamara supported the termination whereas Mr David Bahati and Anette Nyakecho Okwenye (Woman MP of Otuke) said Parliament should not terminate but rather renegotiate.

Ms Muloni, has in the past argued that terminating the UMEME concession is not tenable and that it would lead to the collapse of the energy sector.
Parliament also resolved that the government terminates the Eskom Uganda Ltd power generation concession.

The House said power distribution the world over is in the hands of the government and that Eskom had not done much to improve power generation.

Response from firms

UMEME's media manager, Mr Stephne Ilungole said: "We do not normally comment on discussions arising out of the floor of Parliament because of their legal implications. We will respond at an appropriate time."
Eskom's Corporate Affairs Manager Simon Kasyate, however, said the company is banking on the government.

"We are aware that the resolutions are only advisory and are not binding on the government. To that extent, we are banking on the government with their technical nuance, to evaluate and give to Ugandans the best decision," said Mr Kasyate. He said the

grounds upon which the ad hoc committee recommended the termination is erroneous and ill-informed

Annex 10: NWSC PERFORMANCE MATRIX 2012 TO 2017

NWSC PERFORMANCE AT A GLANCE

Key Performance Indicator (FY)	2012/13	2013/14	2014/15	2015/16	2016/17
Number of Towns (Nos.)	28	66	110	170	218
Water Service Coverage (%)	78%	77%	76%	78%	78%
Sewerage Services Coverage (%)	6.4%	6.4%	6.4%	6.4%	6.4%
Water Production (Million m^3)	87.3	93.8	99.6	106	120.7
Water Supply (Million m^3)	85.3	92.5	96.4	102.7	116.2
Water Sales (Million m^3)	56.7	61.1	66.4	73.9	80.2
Non-Revenue Water(%)	33.6%	33.7%	31.2%	28.0%	30.9%
New Water Connections (Nos.)	21,637	28,068	33,982	38,836	40,712
Connections Taken over with New Towns	-	20,970	17,626	15,419	11,752
Total Water Connections (Nos.)	317,292	366,330	417,938	472,193	524,657
New Sewer Connections (Nos.)	235	360	235	388	316
Total Sewer Connections (Nos.)	17,888	18,810	19,045	20,355	21,072
New Public Stand Pipes (Nos.)	95	921	924	1,129	1,164
Total Public Stand Pipes (Nos.)	8,717	9,638	10,562	10,841	10,424
New Water Mains Extensions (Km)	85.8	470.3	1,340.9	887.6	914.3
Extensions Taken over with New Towns	-	853.7	190.0	547.4	1,220.6
Total Water Pipe Network (Km)	5,670.0	6,994.0	8,524.9	9,959.9	12,093.9
New Sewer Mains Extensions (Km)	1.7	16.8	38.2	18.5	22.3
No. of Staff (Nos.)	1,858	2.263	2,752	2,860	3,131
Staff Productivity (Nos.)	6	6	6	6	6
Turnover(Billion)-(Ushs.)(Net VAT)	170.4	184.5	211.8	276.1	321.0
Billing (Billions) -Ushs.-VAT Inc	184.0	196.4	225.9	292.3	346.8
Collections(Billion)-(Ushs.)-VAT Inc	138.8	154.4	198.5	284.1	322.7
Collection Efficiency(%)	96%	96%	105%	97%	93%
Debt Age(Months)	3.8	4.0	2.8	2.6	3.0
EBIT(Billion)-(Ushs.)	20.2	10.1	8.2	25.0	38.1