

**FACTORS INFLUENCING FUNDING OF PUBLIC PRIVATE PARTNERSHIP  
ROAD PROJECTS: THE CASE OF INFRASTRUCTURAL DEVELOPMENT OF  
THIKA ROAD IN KENYA**

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**DECLARATION**

This research project is my original work and has not been presented for any academic award in this university or any other institution of higher learning.

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## **DEDICATION**

I dedicate this research project to my father Engineer Ferdinand Chami and my mother Mary Chami for the continued support and guidance. I would also like to give a special dedication to my husband Architect Mwaniki in recognition of your unwavering support and love.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

**ADB** African Development Bank

**ICRC** Infrastructure Concession Regulatory Commission

**IFPPP** Infrastructure Finance and Public Private Partnerships Project

**IPDF** Infrastructure Project Development Facility

**KeNHA** Kenya National Highway Authority

**MDGs** Millennium Development Goals

**MIGA** Multilateral Investment Guarantee Agency

**NIIP** National Integrated Infrastructure Plan

**NSGRP** National Strategy for Growth and Reduction of Poverty

**PPI** Private Participation in Infrastructure

**PPP** Public Private Partnership

**PPPU** Public Private Partnership Unit

**PSP** Private Sector Participation

**UK** United Kingdom

## ABSTRACT

For the last few decades, maintenance and development of any infrastructure is being recognized as catalyst of sustainable economic growth and investment opportunity. Development of infrastructure projects through Public Private Partnership (PPP) route has become one of the commonly adopted procurement strategies in most countries. The proposed study therefore intends to investigate factors influencing funding of public private partnership road projects in Kenya with special focus to infrastructural development of Thika Road. The study was guided by the following specific objectives how budget deficits, procurement procedure, project financial feasibility and project schedule influence funding of public-private partnership road projects. The study population for the study was the staff working at the Public Private Partnership. The study adopted descriptive research design. This study employed census sampling techniques due to the small number of respondents. The study relied mostly on primary data sources where self-administered questionnaire were adopted as source of data. The quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS Version 21.0). The study also conducted inferential statistics that involved coefficient correlation, coefficient of determination and multiple regression. Pearson Correlation Coefficient showed that there was a positive relationship that there was a positive correlation between funding PPP road projects and budget deficits as shown by a correlation value of 0.521. Findings revealed that it was also clear that there was a positive correlation between funding PPP road projects and procurement procedure with a correlation value of 0.618, there was also a positive correlation between funding PPP road projects and project financial feasibility with a correlation value of 0.587 and a positive correlation between funding PPP road projects and project schedules with a correlation value of 0.553. This shows that there was a positive correlation between funding PPP road projects and budget deficits, procurement procedure, project financial feasibility and project schedules. Findings from this study reveal that the fundamental justification for adopting PPP would significantly reduce the upfront costs for the government in providing and maintaining public facilities and that it allows for improvement in the public facilities and services because PPP encourages innovation by the private sector. The study concludes that the involvement of the private sector in the development and financing of public facilities and services has increased substantially over the past decade and Government borrowing is much less significant than at first thought and that PPP is now seen as essentially a new approach to risk allocation in public infrastructure projects. Based on the finding, the study recommends that for PPP to be successful projects should be attractive to the private sector, that is to have a strong business case or satisfy key commercial terms. Feasibility analysis should be conducted to establish whether the project makes sense at all and if it has the potential to be implemented as a PPP. The PPP policy emphasizes feasibility of a project as a condition precedent in delivering a successful project and states that a good and comprehensive feasibility study has to be undertaken to assess, among other criteria; affordability of project to both Government and the general public.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

Over the last few decades, maintenance and development of any infrastructure is being recognized as catalyst of sustainable economic growth and investment opportunity (Ali & Khamidi, Idrus, 2009). However, both developed and developing countries are facing unprecedented fiscal problems, and are unable to devote the resources necessary to properly expand and maintain it. It is against this backdrop, most governments and local governments are turning to the private sector for assistance with the design, financing, construction, maintenance and operation of critical infrastructure facilities (Engel, Fischer & Galetovic, 2010). Cooperation between the public and private sectors to bolster infrastructure typically occurs through a public-private partnership, or a PPP, which is a contractual agreement between a group of private partners and a public project sponsor.

As such development of infrastructure projects with private capital through Public Private Partnership (PPP) route has become one of the commonly adopted procurement strategies in developed and developing countries (Levin & Tadelis, 2010). Akintoye, Beck and Hardcastle (2003) defined PPPs as a long-term contractual arrangement between a public sector agency and a private sector concern, whereby resources and risk are shared for the purpose of developing a public facility. Public private partnership (PPP) is a globally accepted public sector procurement mechanism whereby the government engages commitment from the private sector and transfers a certain level of responsibilities to the private sector in providing public facilities or services (Bel & Miralles, 2010). The main characteristic of a PPP, compared with conventional provision, is that it bundles investment and service provision in a single long term contract.

The fundamental justification for adopting PPP would significantly reduce the upfront costs for the government in providing and maintaining public facilities and that it allows for improvement in the public facilities and services because PPP encourages innovation by the private sector (Glaister, 2009). Public-Private Partnerships (PPP) has increasingly become a common structure for the delivery of public infrastructure. By expanding the

private sector role, public agencies are able to tap private sectors technical, management and financial resources in new ways to achieve certain public agency objectives such as greater cost and schedule certainty (Osborne, 2002).

In developed countries, the involvement of the private sector in the development and financing of public facilities and services has increased substantially over the past decade (Li et al., 2005). For instance, many PPP projects in the United Kingdom and other developed economies are regarded as successful implemented PPPs (Jefferies, 2002). PPPs have multiple objectives including promoting infrastructure development, developing local economy, reducing costs, increasing construction and operation efficiencies, and improving service quality by incorporating the private sector's knowledge, expertise and capital (Yuan, 2009). When PPP projects were first launched in the UK, the government appeared to view them primarily as a way of getting infrastructure costs off the public balance sheet, keeping investment levels up, cutting public spending and avoiding the constraints of public sector borrowing limits (Li et al., 2005). However, Li et al. (2005) argue that the impact of government borrowing is much less significant than at first thought and that PPP is now seen as essentially a new approach to risk allocation in public infrastructure projects. Li (2003) demonstrates that the most significant factors associated with PPP procurement are: a lot of management time spent in the contract transaction, lengthy delays in negotiation and high participation cost.

PPP projects have grown at an accelerated pace since the 1980s because of a few enforcing factors, including the governments agenda to foster greater private sector involvement in Malaysia's development projects by offering attractive incentives and the rapid growth of construction projects as part of the country's development plan (Endut, Akintoye and Kelly, 2006; Ismail, 2012). The evolution of PPP in Malaysia started with the Malaysia Incorporated programme (Economic Planning Unit, 1981) and was followed by the privatisation programme (Economic Planning Unit, 2006). Under the Economic Planning Unit, the government's goal to encourage greater participation of the private sector in government projects was accomplished when the Private Finance Initiative

programme was officially unveiled (Economic Planning Unit, 2006). More recently, in the Tenth Malaysia Plan, the continuous effort of the Malaysian government in promoting private sector involvement was revealed with the announcement of more development projects to be implemented using the PPP scheme (Economic Planning Unit, 2010).

In Africa, most countries are still struggling to improve on their infrastructure. The World Bank's Africa Infrastructure Diagnostic Study (2011) estimates that inefficiencies in State owned utilities and infrastructure providers in Sub-Saharan Africa cost around US\$6 billion a year. This is because often construction projects managed by government run well over budget and behind schedule and any changes to the project cost are often at the expense of the Government. More so service delivery by Government entities is often poor due to limited capacity and weak management incentives. In Nigeria for example infrastructure deficit has trailed Nigerian's development and economic growth for quite a while now and the country needs more than US\$ 19 trillion to provide the much required infrastructure. Unfortunately, finances of Federal government are still unable to cope with the financing of this infrastructure gap (Oyewobi, Ibrahim and Ibrahim, 2012; Olaniyan, 2013). Concerted efforts taken by Nigerian government presently in addressing this infrastructure gap are implementation of a 30-year National Integrated Infrastructure Plan (NIIP) that would positively triple the current state of the nation's infrastructure (Rainbow, 2013) and also the enactment of the Infrastructure Concession Regulatory Commission Act (ICRC Act) in 2005 to allow private sector participation in infrastructure development through the use of the Public-Private Partnership (PPP) in infrastructure projects (Nigeria PPP Review, 2012).

In Uganda infrastructure development are developed through Private Public Partnerships (PPPs such as promoting infrastructure development, developing local economy, reducing costs, increasing construction and operation efficiencies, and improving service quality by incorporating the private sector's knowledge, expertise and capital have drawn increasing interest from policy makers, researchers and the industry practitioners. In

Uganda for example, the ministry in charge of works and transport has been longing for development of PPP funded infrastructure projects (Ongolo 2012).

In Tanzania, the government and the community can all gain from PPP if there are genuine concerted efforts to work together. According to Mkapa (2000) the demand for PPP calls for innovative approaches and provision of regulatory frameworks that have direct links with the private sector. The Millennium Development Goals (MDGs) and National Strategy for Growth and Reduction of Poverty (NSGRP), (URT, 2005) for example, have placed the community (citizen) at the center of the agenda, with responsibility for improving health services on the government and private sector working as partners.

Kenya, use the services of PPP and acknowledges its contribution particularly on infrastructure development. The reason behind this emphasis is that they yield important benefits for all involved stakeholders such as the public sector, the country's citizens and the private sector, which now gains access to a new expanding market. This is the reason why PPPs are considered an important reform and a fundamental pillar for the development of the country. These reforms are assumed will significantly contribute to the development of the Kenyan economy over the next years. Via the implementation of PPPs, the public sector intends to make use of the most modern means for providing services to the citizens, enhancing the existing framework of public procurement. With the implementation of PPPs, a new boost will be given to the development of the economy, prompt and efficient delivery of necessary infrastructure will be guaranteed, while more public funds will be made available for social purposes and priorities (Nyagwachi, 2008).

There has been one success in the road sector through the use of PPP and the Nairobi-Thika Corridor (Thika Road super highway) is a good example which is in the northeast of the Nairobi Metropolitan Region and extends from Nairobi City Centre to Thika District. The trunk road currently serves as a main cargo route and an important metropolitan, regional and international transit link and is part of the classified international A2 trunk road, which originates in Nairobi City Center and extends to

Moyale, Ethiopia. The road also acts as a main artery for various satellite towns and economic hubs that lie along and near the corridor, including Ruaraka, Kasarani, Kiambu Town, Githurai, Ruiru, Juja and Thika. Thika Road was one of the most travelled corridors in the Nairobi Metropolitan Region. A 2006 traffic count revealed that Nairobi-Thika Road carries around 70,000 vehicles per day, the highest in the East African Region (JICA, 2006). The problems currently plaguing commuters, residents and business owners along Thika Road including heavy congestion, dilapidated infrastructure, poor air quality, and high accident and fatality rates, are illustrative of the broader urban transportation problems that characterize the entire metropolitan area.

Kenya has had some degree of PPP failures in the road sector, according to Treasury, the Nairobi Urban Toll Road Project (2009), which includes 106 km rehabilitation and expansion of trunk road and bypasses through central Nairobi (including a viaduct flyover through downtown), did not materialize, owing to the fact that there was concern that the Kenyan government had cancelled concession talks for the Sh67 billion Nairobi Urban Toll Road Project, following lack of interest from the World Bank to finance it (Hansard, 2009). The lack of resource mobilization dedicated to fostering PPPs has led to Financing Giants like the World Bank Group, which includes its private arm, the International Financing Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA), to provide political risk insurance, having new strategy that aims to use financial innovation and partnerships with the private sector to fund selected sectors, including infrastructure. China has recently pledged \$3 billion for joint investments with the IFC to support private sector development in emerging markets, including in African infrastructure. Leadership in Kenya has showed inconsistent commitment to PPPs in that commitment to PPPs suffers from the fact that policy on PPPs changes with changes in political leadership. Frequent leadership changes within the PPP Unit had to some extent harmed the development of the policy environment for PPPs in Kenya.

In December 2009, the much-anticipated Nairobi-Thika Highway Improvement Project broke ground. The upgrading project intended to transform the old dual carriage 45 km (28 mile) Thika roadway into Kenya's first super highway. Nairobi-Thika Highway



aimed to address the problems of congestion, traffic accidents and air pollution and improve economic development. Improving this vital transport corridor was an important infrastructure project for the Government of Kenya (GoK) and was partially funded by the African Development Bank Group (ADB) as well as the Government of China through loans. The rationale and articulated vision behind the Nairobi-Thika Highway projects was to improve the economic productivity and mobility of those living along the road while transforming Thika Road into part of a Great North Trans-African Highway from Cape Town to Cairo, facilitating regional trade and economic development. According to the GoK and reports by the ADF, the rehabilitation and redevelopment of the road is expected to accelerate economic opportunities throughout Kenya and will reach multiple groups and stakeholders.

## **1.2 Statement of the Problem**

The use of Public-Private Partnerships (PPPs) to replace the public provision of infrastructure services has become increasingly common. Projects that require large up-front investments, such as highways, water and sewage, bridges, seaports and airports, hospitals, jails and schools are being provided via PPPs. Many practitioners and governments claim that PPPs relieve strained budgets and release public funds, while others suggest that PPPs are appealing because finance, investment and management is delegated to private firms, which are more efficient (Guasch, 2007). As the 2030 Vision aspires for Kenya to be firmly interconnected through a network of roads, it is therefore important to demonstrate to potential investors that Kenya is indeed ready and capable of successfully implementing PPPs. The Public Private Partnership Unit (PPPU) was therefore established, as a specialized unit within the National Treasury, to promote and oversee the implementation of the GOK- PPP Program. One of the most crucial elements contributing to successful PPPs is the early identification of a strong pipeline of PPP projects.

The Government of Kenya (GoK) has received financing from the World Bank towards the cost of the Infrastructure Finance and Public Private Partnerships Project (IFPPP) whose overall development objective is to increase private investment in the Kenyan

infrastructure market by improving the enabling environment to generate a pipeline of bankable PPP projects. It is intended that part of the proceeds of this credit be applied to eligible payments under the contracts for provision of Transaction Advisory Services for the Operation and Maintenance (O&M) of the Nairobi–Thika Road. According to Ruhashyankiko (2006) for a PPP to be effect there are some factor that influence it is financing process. The nature of contracts and the governing laws are the same for PPPs across states (Allen, 2006). Banerjee and Oetzel (2006) found that countries with budget deficits tend to seek PPP projects and such countries tend to have a high amount of aid and external debt (Sharma 2012). Hassan and Soumare (2007) found that good friendly government policies can enhance the PPP financing of large scale capital-intensive projects such as power plants, roads, ports and tunnels. Political processes and ideological attitudes influence the decision to privatize public services (Bel & Fageda, 2007).

Literature suggests that there are many factors that potentially influence and explain the various outcomes of private financing arrangement in public infrastructure provision. The determinants factors include, among others, procurement procedures, project financial feasibility, budget deficits and institutional factors such as political factors (Sharma 2012). Powerful local political constituencies also harbour strong suspicions of PPPs. Locally; Muhu (2013) did a study on factors affecting the success of Public-Private Partnerships (PPP) in Kenya. He found that Legal framework and government procurement procedures affected the construction more with a rating of 34% each, while the PPPs policies by the government affected least with a rating of 32%. Political goodwill had the greatest effect on the construction with a rating of 43%. Despite these seemingly reasonable arguments, the experience with PPPs has been mixed. In some cases expectations have been met, but in many more cases contracts have been renegotiated in favor of the concessionaire, and sometimes firms have been affected by regulatory takings (Guasch, 2004). The reason seems to be that the profitability of PPP projects is subject to large exogenous demand uncertainty, which is often not considered properly when designing the contracts. This explains why renegotiations take place when demand is lower than expected, as well as the array of risk sharing agreements that are observed.

It is against this realization that the current study aims to bridge this knowledge gap by investigating factors influencing funding of public-private partnership road projects with focus to Thika road.

### **1.3 Purpose of the Study**

The purpose of this study was to investigate factors influencing funding of public private partnership road projects in Kenya with special focus to infrastructural development of Thika Road.

### **1.4 Objectives of the Study**

The study was guided by the following objectives:

- i. To establish the extent to which budget deficits influence funding of public-private partnership road projects.
- ii. To assess the extent to which procurement procedure influence funding of public-private partnership road projects.
- iii. To examine the extent to which project financial feasibility influence funding of public-private partnership road projects.
- iv. To examine the extent to which project schedules influence funding of public-private partnership road projects.

### **1.5 Research Questions**

The study sought to respond to the following research questions. The research questions of the study are:-

- i. To what extent do budget deficits influence funding of public-private partnership road projects?
- ii. How does procurement procedure influence funding of public-private partnership road projects?
- iii. To what extent does project financial feasibility influence funding of public-private partnership road projects?

- iv. How do project schedules influence funding of public-private partnership road projects?

### **1.6 Significance of the Study**

The empirical data that was obtained by the study was useful to various stakeholders in the road construction sector. It was inform policy makers on the best strategies for successful public private partnerships project implementation. The research also highlight potential challenges to public private partnerships initiative allowing them early opportunities to overcome these obstacles in order to succeed in partnering with government in projects.

The outcome of this research highlighted key areas where public private partnerships require reform, change or incentives in order to successfully complete initiated projects. With this knowledge, developers' associations can lobby for change and policy reforms as well as harness the collective strength of their developers to tap into government projects.

### **1.7 Delimitations of the Study**

The survey covered factors influencing funding of public private partnership road projects in Kenya with special focus to infrastructural development of Thika Road. The study interviewed staff from PPP Unit within the National Treasury of the Government of Kenya (GOK) and KeNHA under the Ministry of transport and infrastructure. Questionnaires will be used as the main data instrument source where it will be distributed to the targeted respondents. The data for analysis was collected to a population of 62 respondents within head offices in Nairobi.

### **1.8 Limitation of the Study**

The researcher is likely to encounter various limitations that tend to hinder access to information that the study seek. The main limitation of study is only limited to road projects without focusing on PPP projects in other ministries. The study could have covered more PPP projects across all government ministries so as to provide a more broad based analysis. The research instrument might give varying data depending on the

individuals' knowledge and experience and this may give confusing results that may affect the reliability of the result. The respondents targeted may be reluctant in giving information fearing that the information seeks would be used to intimidate them or print a negative image about them, the ministry or the process used in PPP. The researcher will handle the problem by carrying an introduction letter from the University and assure them that the information that they may be treated confidentially and it was used purely for academic purposes.

### **1.9 Assumptions of the Study**

This study assumes that selected representatives of the target population have adequate understanding of factors that influence funding of PPP road construction projects and that these respondents will be available to provide relevant information.

### **1.10 Definition of Terms**

**Budget deficits:** A status of financial health in which expenditures exceed revenue

**Competitive procurement Process:** Aims to get the best value for a client while enhancing access, competition and fairness.

**Inflation:** The rate at which the general level of prices for goods and services is rising and, consequently, the purchasing power of currency is falling.

**Government policies:** The set of government rules and regulations to control or stimulate the aggregate indicators of an economy frames the macroeconomic policy.

**Procurement:** The act of obtaining or buying goods and services.

**Project Financial feasibility:** The study on whether a project is viable after taking into consideration its total costs and

probable revenues. If the revenues cover the costs of the project, then the project is viable.

**Project Schedule**

A tool that communicates what work needs to be performed, which resources of the organization will perform the work and the timeframes in which that work needs to be performed.

**Resource**

The financial, raw materials, plants, equipment's and human resource.

**Political will**

Is the exercise of an abstract feature of political authority to enforce certain act for the benefit of its intention, usually for public welfare.

**1.11 Organization of the Study**

This research is organized in five chapters. Chapter one is focused on the research and presents the statement of problem, objectives, and research questions. The chapter also shows the significance, limitations and delimitations of the study. Chapter two encompasses the literature review on the various aspects concerning PPPs implementation. Chapter three discusses the methodology that will be used to collect and analyse data while showing the target population, the sample population and the data collection instrument. Chapter four presents the results of the survey it and also contain the analysis of data and presentation of the information collected via mean, standard deviation .Chapter five contains the summary findings, discussion, conclusion and recommendations of the results that will be obtained from the data analysed and the information gathered in chapter four.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter covers contributions from other scholars on factors influencing funding of public private partnership road projects. The chapter is structured into concept of funding of public-private partnership road projects, budget deficits, procurement procedures, project financial feasibility and project schedule. The chapter also presents; theoretical review and empirical review, conceptual framework, critique of literature and finally summary and research gaps that the study was aiming to bridge.

#### **2.2 Funding of Public-Private Partnership Road Projects**

The role of public infrastructure in reducing poverty, distributing wealth and improving economic growth is central in an economy. In recent years, infrastructure financing has been linked with non-economic and institutional factors which directly influence the country risk (Bohme 2010). More recently, private financing has been regarded as a potential alternative for developing public infrastructure. Besides providing additional sources of funding, private financing is also seen as having more advantages than public financing, particularly in terms of improving projects value-for-money, shortening the delivery time and reducing the project costs. This sort of arrangement has been applied in many parts of the world in different types and variants. The most common type is usually called as Public-Private Partnership (PPP), while in some Commonwealth countries such as UK and Malaysia it is more popularly known as Private Finance Initiative (PFI). In other countries, the arrangement is also often called as Private Participation in Infrastructure (PPI), Private Sector Participation (PSP), Privately-Financed Projects (PFP), P3 or P-P Partnership (Yescombe 2007).

Leveraging private sector financing through PPPs is one option that is increasingly being pursued to help address the infrastructure gap. Arguably private sector participation in infrastructure can bring experience, efficiency and finance in providing quality infrastructure services at better value for money than traditional government procurement

(Hassan and Soumar, 2007). Numerous instances where the public and private sectors have joined to address a key infrastructure constraint have proved successful for all parties involved the public sector is able to transfer risks to the private sector and reduce the overall amount of public funds necessary to complete the project, while the private sector accesses a commercial market with the potential for attractive financial returns (Grimsey & Lewis 2007).

In developed countries there is ample evidence on the efficiency role of the private sector. Arthur Andersen & LSE (2000) evaluated 29 projects in the UK already in operation, a third of all PPPs in the UK at that time, and showed that the average percentage of estimated saving (against a public sector comparator) was 17% . Risk transfer accounted for 60% of forecast cost savings. Additionally, the National Audit Office in the UK in 2003 examined construction performance in 37 UK projects compared to projects built by the public sector. The results show 80% of PPP/PFI deals delivered price certainty; small price increases were evident in 20 percent of deals; 73 percent of publicly built projects experienced significant cost overruns; and 66 percent of PPP deals delivered on time compared to 30% for those publicly built. Furthermore, the motorway in Finland between Helsinki and Lahti was built five years earlier than expected and at lower cost. Finally, figures published by the European Construction Industry Federation (FIEC) in December 2010 state that the global savings of PPPs is estimated around 25% compared to classical procurement (Sein, 2006). This evidence on sound performances of private participation should not be regarded without recognizing the critical role of a strong enabling environment.

PPP projects in the UK under the Private Finance Initiative (PFI) make up 10–15% of public's sector investment, and account for 20% and 15% of Spain's and South Korea's infrastructure investment respectively. Notably, while PPPs can in fact be instrumental in accelerating development, they also present a new set of challenges for the public sector. For example, bringing the private sector in as investors and operators requires governments to adjust and implement policies that enable a systematic, consistent, coherent and effective framework for private sector entry, operation and exit from the



PPP market (Takim, Abdul-Rahman et al. 2009). Pakistan has developed PPP program under the framework of Infrastructure Project Development Facility (IPDF) (ADB 2008). A framework on infrastructure PPP has been issued by the Government of Indonesia in 2005 and some projects have been offered to the private sector (Wibowo 2006). All of these developments raise some expectations for positive progress towards infrastructure improvements in those countries, although some issues in government's credibility and transparency (Beh 2010), and government's capacity (ADB 2008) are still potentially decelerate the process, and most of those can be referred to the issue of accountability.

The infrastructure deficit estimated for sub-Saharan Africa (SSA) is substantially higher than what domestic resources can meet (Foster, Vivien & Cecilia, 2012). The finance required to raise infrastructure in SSA to a reasonable level within the next decade is estimated at US\$93 billion per year, about 15 percent of regional GDP. This estimate covers the Information and Communications Technology (ICT), irrigation, power, transport, and water supply and sanitation sectors. Two thirds of this amount is needed for capital expenditures and one-third to operate and maintain the infrastructure assets. Of the total required amount, the existing spending on infrastructure is estimated at US\$45 billion per annum, of which around US\$30 billion is financed by the African taxpayers and infrastructure users and US\$15 billion is from external sources. Successful PPPs, such as telecom investments in SSA or toll roads in South Africa, hold the promise that PPPs can assume a significant role in solving Africa's infrastructure deficit. However, it should be noted that providing the bulk infrastructure within a country will remain a government responsibility (Yescombe, 2007).

After accounting for potential efficiency gains that could amount to US\$17 billion, Africa's infrastructure funding gap still remains around US\$31 billion a year. While the infrastructure needs for each of the SSA countries varies greatly, there is little doubt that the general shortfall in infrastructure services hampers economic growth by hindering productivity, increasing the costs of doing business, and isolating markets (Briceño, Cecilia, Karlis & Foster, 2008). Public sources continue to finance the majority of these investments, but governments across the continent are increasingly realizing that these

resources are insufficient to finance the level of investment required to close the infrastructure deficit.

According to the Africa Infrastructure Country Diagnostic Country Report (Zambia 2010) produced by the World Bank, Zambia needed to spend US\$1.6 billion a year over the decade 2006-2015 to develop its infrastructure to the level found in the rest of the developing world. This would be equivalent to 20% of Zambia's GDP and it is about double the country's rate of investment in recent years. The report thus estimated Zambia's infrastructure funding gap at US\$500 million per year (6.5% of GDP) for the ten years from 2006 to 2015. Closing the gap required raising more funds and looking for more effective ways to meet infrastructure targets, stated the report. PPPs could play a role in mitigating the funding requirements. By allowing the private sector to invest their own resources in the development of public infrastructure facilities through PPPs, Government can have access to private capital and speed up the delivery of public infrastructure. Mobilizing private sector resources in infrastructure development will help Government free up public funds for other socio-economic activities.

Most governments in SSA spend about 6 to 12% of their GDP each year on infrastructure. Approximately half of the countries spend more than 8 percent of GDP while a quarter of countries spend less than 5% most countries in the region spend less than US\$600 million a year on infrastructure services or equivalently less than US\$50 per person. While these fiscal commitments seem large when expressed as a share of GDP compared to the actual nominal investment values, they are small when placed in the context of the amounts needed. Infrastructure data from the AICD reports for the 5 countries, that is, Côte d'Ivoire, Ghana, Kenya, Nigeria, and Senegal highlight existing inefficiencies and infrastructure funding gaps. From the report Kenya exhibits the lowest levels of infrastructure inefficiency waste, totaling US\$230 million per annum (0.8% of GDP), the country's funding gap is the highest among all five countries marking US\$2,094 million (7.0% of GDP).

Government of Kenya (GOK) has made infrastructure development through PPPs a priority as a mechanism that can help it address the major infrastructure gaps in the country (Hassanali, 2009). According to the Ministry of Roads Service Charter (2008) there is a need for improvement of roads to a better condition because the road transport (mode of transport) carries about 80% of all cargoes and passengers in the country. Due to the importance of roads in socio-economic development of the country, the government has in the recent past steadily increased budget allocation to the road sub-sector. Undoubtedly, reliable, efficient infrastructure is crucial to economic and social development and the promotion of pro-poor growth. Poor infrastructure impedes a nation's economic growth and international competitiveness. The Kenya Vision 2030 recognizes the fact that, the adequate supply of infrastructure services is an essential ingredient for productivity and growth (Wasike, 2001). To date, only Kenya pension funds have been indirectly involved in infrastructure financing through investments in the bond issuance of Kenya Electricity Generating Company (Kengen) and in the telecom company Safaricom.

### **2.3 Budget Deficits and Funding of Public Private Partnership Road Projects**

Generally, PPP type arrangement is commonly adopted by the governments which have infrastructure gap yet constrained by limited internal and external resources (Reside and Mendoza 2010). Sharma (2012) when government has budget constraints reflected in large deficits and heavy debt burden, they are more likely to adopt PPP type arrangement to accelerate public infrastructure financing in their countries. Bank debt financing remains below pre-crisis levels as the banking sector redefines its risk appetite and makes structural adjustments in anticipation of statutory requirements such as Basel III and national-level regulations. Involving private funding basically helps countries to avoid debts in financing the development of public facilities (Iqbal & Khan 2004). Similarly, Kahf (2002) suggests that governments do not have to expense their money to invest in infrastructure because such task can be left to the private sector (Bhattacharya, Romani & Stern 2012).

Amount of funds allocated to a project from the governments have been the major source of financing for infrastructure such as road projects. The decline in the allocation of funds over various plan periods in terms of percentage of the total plan outlay has been identified as one of the factors partly responsible for the inadequacies in the road network (UNECE, 2008). Hammami and Ruhashyankiko (2006) found that countries with large amount of natural resources allocated to finance infrastructures have less PPP projects and investments. These allocations are transferred to individual concession trusts and funds payable to the concessionaires upon completion of contractually defined construction milestones. Deductions could be applied to the payments if the concessionaire does not meet minimum road condition and operational performance parameters. This plan creates an incentive for compliance with construction and operation and maintenance goals. The bidding criteria for all three sectors consisted of a combination of technical and economic variables with the greatest value assigned to the economic proposal.

Flyvbjerg, Holm and Buhl (2003) established that cost escalation was strongly dependent on the funding formula employed. Bertisen and Davis (2008) identified other variables which impact construction time and cost overrun. Their study identified predominant causes of delay as design changes, poor labour productivity and inadequate planning. Other main causes of cost overrun identified and ranked according their perceived importance were inflationary increase in material cost, inaccurate material estimating and project complexity. Furthermore, feasibility studies tend to underestimate the as built capital costs of the project. They further opined that as built capital costs are on average, 14% higher than estimates in the bankable feasibility study. They reasoned that this bias in capital cost estimation is intentional and driven by scarcity of project financing and the need by the project sponsors to inflate the project economics in a bid to secure financing.

In many parts of the developing world, amount of fund allocated to finance infrastructure contributes largest in exacerbating the gap in the market for infrastructure finance (Reside and Mendoza 2010). Reinvigorating the supply of infrastructure within the developing world requires supplementing finance with new sources of equity and debt finance. It

means pairing existing instruments with innovative tools, such as MDB guarantees, to reduce risks, lower the cost of sovereign borrowing, extend tenors, and strengthen market and project environments. On this menu, public-private partnerships (PPPs) represent one of the many promising instruments to meet the challenge of crowding finance of infrastructure.

Most Public Private Partners are concerned with the infrastructure financing situation due to the financial crisis that some countries experienced during 2007-2008. Before the Asian economic crisis there was a significant flow of foreign currency infrastructure financing, which was arranged by international banks. International bank participation was high in a lot of countries as banks followed international developers who participated significantly in developing infrastructure in these countries. The long term relationship between international banks and developers helped to give an additional sense of comfort in financing projects. Comfort was also got from various guarantees given by Governments to reduce the risk of the lenders. However, the experience of this first round of infrastructure development was bitter after the East Asian economic crisis hit.

Some countries like Indonesia defaulted on the guarantees offered to project sponsors as they were hit by devaluation of the local currency. It was also realized during the crisis that many projects had been financed on the basis of questionable viability and under pressure from the economic downturn a lot of the projects suffered. As infrastructure projects floundered in the wake of the crisis the increased risk perception led to a significant reduction in the flow of capital for infrastructure projects in these countries. With international capital flows drying up there has been an increased reliance on domestic markets and commercial banks in many countries to provide the financing needed for infrastructure projects. Infrastructure sector in countries with high liquidity in the banking system have been able to tide the crisis as local commercial banks in these countries have started to take a lead in infrastructure financing. The major reason for reliance on the banking system has been that other avenues for financing are not significantly developed in these markets.

## **2.4 Procurement Procedures and Funding of Public Private Partnership Road Projects**

Nowadays, most governments have recognized that for PPP project funding they have to ensure competitive procurement process is employed this ensures transparent and procurement function. In view of this, the government ensures there is a public good argument in financing a significant portion of the infrastructure from the public purse. This can be done using traditional public or PPP procurement approaches. There are three key reasons for this: the first derives from the competitive impact that it will have on sponsors, the second derives from the nature of risk mitigation that it provides and the third relates to the incentives that it can create for line ministries to pursue competitive PPP procurement process.

Effective procurement consists of four Critical Success Factors (CSF) including: competitive procurement process; transparency procurement process; well-organized and committed public agency and sustainable procurement and operation. The first factor in this group is competitive and transparent procurement process which is important in lowering the transaction costs and shortening the time in negotiation and implementing the deal. Clear project ideas and client requirements should aid to attain these in the bidding process. In most cases, competitive bidding exclusively on price may not support to secure a strong private consortium and attain value for money for the public. The government should take a long-term view in seeking the right partner (Corbett & Smith 2006).

Governments are motivated to procure infrastructure projects through PPP route in view of their desire to reduce sovereign borrowings, leverage the scarce budgetary resources, bring in efficiency in the erstwhile inefficient public procurement system and the consideration of benefits due to sharing of the financial risks and rewards between public and private sectors (Grimsey and Lewis 2002). These have inspired the public entities to shift their role from being creator of the infrastructure with regard to the traditional public procurement system to facilitator in PPP mode of procurement.

Where infrastructure funding is provided in a competitive process it introduces a cost discipline to the overall project that is absent from the public procurement route that would be uniquely focused only on the capital works to be financed. In most developed countries, PPP is done by awarding the infrastructure funding to the bidder who submits the proposal for the best financial allocation consistent with the technical, operational, market and other specifications laid out in the bid documents. This serves to ensure that the funds available go to the best and most cost-effective proposal that is identified through transparent competitive procurement process. This encourages financiers to fund PPP project.

World Bank (2009) pointed that construction and operating companies are some of the leading investors and sponsors of PPPs in core infrastructure. One of the competitive advantages in entering these markets comes from the ability of these types of companies to derive construction and project management payments from upfront capital investments. This offsets their investment costs. Not only is this a market advantage over other financing sources where returns are dependent solely on revenue flows from the infrastructure service itself, but it adds to the appeal of funding of PPP projects.

Access to these funds for construction services rendered effectively reduces their investment costs as the downstream PPP operator. This would not be available with a public procurement contract. This can serve to reinforce funding for those line ministries willing to pursue PPP approaches in line with the competitive criteria and procedures laid out. This provides an incentive to line ministries. Moreover, this would also increase leverage over the government agencies to follow transparent and well-defined PPP procurement guidelines. This in turn is a strong positive signal to send to the private sector, together with the additional assurance provided on the predictability and certainty of the funding insofar as it is provided clearly expectation to the financiers based on the laid down procurement policies.

## **2.5 Project financial Feasibility and Funding of Public Private Partnership Road Projects**

Public private partnership is a newfound method in the procurement of public goods and services on a sustainable basis (Alitheia, 2010). PPP procurement arrangements have been used to deliver several infrastructure projects. According to Cheung (2009) PPP is a procurement approach where the public and private sector join forces to deliver a public service or facility. According to Yuan et al. (2008) process indicators enable clients and other agencies adopting PPP procurement, to track the capabilities of processes in PPP projects whereby the strength and weakness of these processes can be identified.

To safeguard project economic feasibility, the government ponder some forms of government guarantees, joint investment funding, or supplemental periodic service payments to permit the private sector cover the project costs and earn judicious profits and investment returns. At the same time, the government should take due consideration of private sector's profitability requirements in order to have stable arrangements in PPP projects (Zhang 2009). According to Abdul-Rashid et al. (2006) supporting the government, competent authorities and ministries in the procurement process, such as assessment of feasibility and value for money for potential PPP and in formulating the basic plan for PPP, formulation of the request for proposal enhances financing of infrastructure projects. Implication for policy is government forming formidable legal and regulatory framework for PPP and for practice concessionaire with good consortium and adequate financial capability should be engaged for future PPP projects.

The financing package should be carefully tailored to the characteristics of the project. Under the BOT model, commercial and financial considerations, rather than the technical elements, are likely to be the final determinants in funding PPP projects. An attractive financial package must be based on the principles of low capital cost, low operation and maintenance cost, credibility, minimal financial risk to the government, and minimal reliance on debt-servicing capability of project cash flows. The accessibility of a well-organized and established financial market with the benefits of low financing costs and



an expanded range of financial products would be an encouragement for private sector taking up PPP projects.

Hodge (2004) cited UK studies that show that government departments that implemented PPPs registered cost savings of between 10% and 20%, the reason being that the private sector brought improved efficiency. HM Treasury (2006) reported that 50% of authorities that procured through PPPs claim to have received good value for money while 28% claim to have received satisfactory value for money. KPMG (2007) also reports that 83% of UK PPPs made a profit with 70% having made a profit in each year of their operation and only 38% made less profit than expected.

## **2.6 Project Schedules and Funding of Public Private Partnership Road Projects**

Infrastructure financing hinges on the techniques of project finance (Brealey *et al*, 1996). These techniques entail two sets of contractual arrangements: the creation of a legally and economically self-contained entity (SPV) against which all legal contracts are written and a set of contracts dictating the distribution of risks and returns. Ogunsemi and Jagboro (2006) opined that the concept of project duration is important factor that influence funding of a project. Estimation of time has continued to be a problem of great concern and interest to both financiers and contractors. Toor and Ogunlana (2008) in their study of major construction projects in Thailand identified the most significant problems causing minimal financing of a project are factors related to designers, contractors and consultants. Issues such as lack of resources, poor contractor management, shortage of labour, design delays, planning and scheduling deficiencies, changed orders and contractors' financial difficulties were also highlighted in the study.

Construction delays do not only result in cost overruns and poor quality but also greater disputes which may even cause financier to counter losses (Williams, 2003). Companies have been finding it difficult to deliver on time not because of lack of financial resources but mainly due to the fact that they are facing enormous pressure of multiple jobs and parallel deadlines with less than adequate human resources (Bertisen & Davis 2008). Focus on reducing the delays can also help to reduce resources spent on heavy litigation

processes. According to Gartner Institute study (2011) 50% of all projects were delivered above schedule and budget.

UNECE (2008) pointed that most countries are applying the “no service, no pay” principle that ensures the private partner is incentivized for timely delivery and operation of project assets. Better overall governance by private sector entities enables the private partner to have better control of cost overruns contrary to traditional public procurements which are often characterized by significant construction delays and cost overruns. On account of assigning life cycle maintenance obligations to the private sector, private partners are incentivized to optimize capital and maintenance expenses over the project duration. Murphy (2008) argues that PPPs are viable as long as the government understands the risks upfront and during the duration of the project. Murphy (2008) emphasizes that risk transfer to the private sector is likely to be the most significant success factor for a PPP funding.

Cost and schedule overruns can occur due to a wide range of causes on various types of projects. If project costs or schedules exceed their planned targets, client satisfaction would be compromised. The funding profile would no longer match the budget requirement and further slippage in schedule could result. The resulting effects would be detrimental especially in the case of developing countries whose wealth measure is greatly dependant on their performance in infrastructure provision through the construction industry, especially on road construction projects which constitute a major component of the industry

According to study conducted in Uganda, found that the government would consider primarily companies of repute that are financially stable and capable of investing for long term projects in PPP. The selection of the largest contractors was based on the assumption that large and well-established firms are more capable of getting involved in PPP projects and may be able to sustain the project development without government financial support. Contractors in categories A and A\* were identified as the potential participants.

## **2.7 Theoretical Framework**

This study is grounded on two theories, that is, the public-choice theory and theory of x-efficiency. Public-choice theory holds a motivational assumption that each party will act to prevail over the other to stay in power (Udehn, 1996). The political context appeared to be a determining factor in the success and failure. This application is discarded, because public choice theory suggests bureaucrats aim to enlarge budgets, however, in a PPP context, it requires them to control less money and fewer staff. On the contrary, it could be said that taking on more debt is another way of expanding budgets and therefore still sits within the realm of self-interest. So basically whatever a politician decides is explained as being in self-interest. Again, this does not fit, because practically speaking there are too many external influences at play, namely donor influence to enable the politician to gain preferences.

Theory of x-efficiency suggests that countries lacking external sources of revenue experience severe fiscal crises followed by the emergence of parliamentary majorities that tend to be more open to foreign private investment. By contrast, countries with greater exogenous or external resources have had milder economic crises and have been less inclined to adopt market-oriented policies (Glasser, 2001). This argument leads one to think that rentier countries that are receiving a large amount of exogenous rent can cushion fiscal shocks and thus be less likely to reform, liberalize, and engage in PPP arrangements.

According to Leibenstein (1966) public institutions or enterprises cannot fail as long as official financial and monetary policies are expansionary enough to bail them out or to limit their probability of failure. Inefficiencies in public institutions or enterprises result from both distortionary government interventions as well as states' organizational structures, which are typically highly bureaucratic. Hence, according to this theory, public-private partnerships are necessary to reduce the sources of x-efficiency in public organizations and to allow them to respond to market forces and become more competitive.

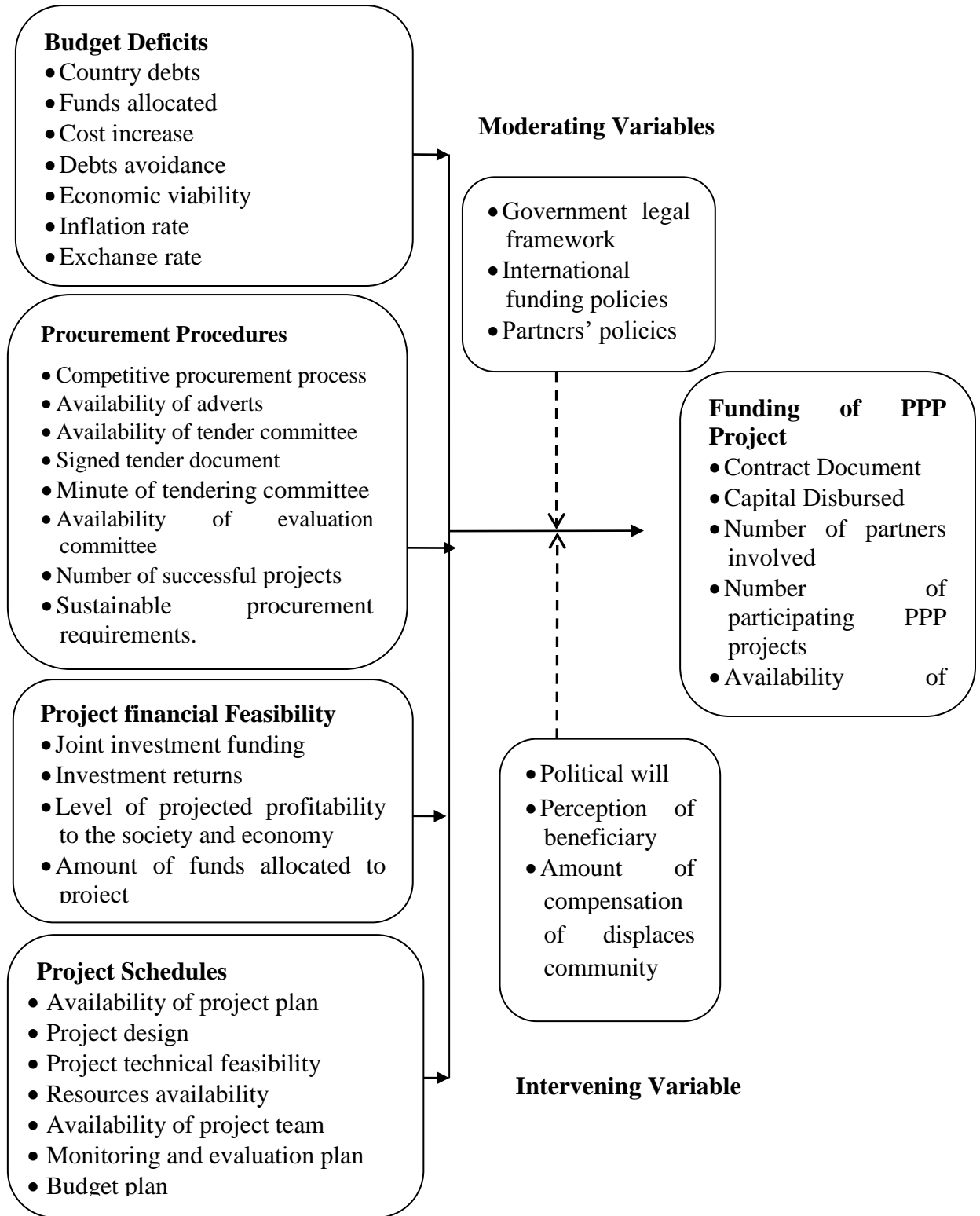
There is strong evidence that governments with large resources from fuel exports have less PPPs in energy infrastructure. Presumably, this is because fuel producers and exporters may have already built their energy infrastructure prior to the beginning of our sample period of 1990. Conversely, governments without such exogenous resources tend to resort to PPPs in order to build their infrastructure in the energy sector. Hence, the government constraints channel appears to be relevant and consistent with the theory suggested by Glasser (2001).

## **2.8 Conceptual Framework**

In this study, the conceptual framework looked at the relationship between factors influencing funding of public-private partnership on road projects.

**Figure 1. Conceptual Framework**  
**Independent Variable**

**Dependent Variable**



## **2.9 Research Gap**

The concept of public private partnerships (PPPs) has attracted worldwide attention and acquired a new resonance in the context of developing countries. The promise of efficiency savings and a reduced burden on strained public resources has certainly struck a positive chord in countries operating under tight budgets (Spackman, 2008). According to Nell and Associates (2007) there are several factor that makes some countries to be more successful in attracting private finance for the development of public infrastructure than the others. The factors includes, among others, stable macroeconomic conditions, favorable market conditions and large market size as well as high quality regulation and stable political institutions. Banerjee et al (2006) also make an empirical study of developing countries to investigate institutional structures and their effects to the implementation of PPP. In the contrary, large amounts of government budget constraints and, to some extent, effective government could decrease the number and values of PPP investments in developing countries. Motivated by the above studies and considering the development issues in the need of road projects in developing countries, this paper is set to address the factors influencing road project funding of public-private partnership in Kenya.

## **2.10 Summary of Literature Review**

This chapter looked at in the literature review which included the discussion of previous studies done by other scholars in relation to factors influencing funding of public private partnership road projects. Private financing through PPP has been regarded as a potential alternative for developing public infrastructure (Bohme, 2010). Besides providing additional sources of funding, private financing is also seen as having more advantages than public financing, particularly in terms of improving projects value-for-money, shortening the delivery time and reducing the project costs. Bringing the private sector in as investors and operators requires governments to adjust and implement policies that enable a systematic, consistent, coherent and effective framework for private sector entry, operation and exit from the PPP market (Beh 2010). While the infrastructure needs for each of the SSA countries varies greatly, there is little doubt that the general shortfall in

infrastructure services hampers economic growth by hindering productivity, increasing the costs of doing business, and isolating markets (Briceño, *et al*, 2008).

From the available literature, reliable, efficient infrastructure is crucial to economic and social development and the promotion of pro-poor growth. Poor infrastructure impedes a nation's economic growth and international competitiveness. Most governments in SSA spend about 6 to 12% of their GDP each year on infrastructure. Approximately half of the countries spend more than 8 percent of GDP while a quarter of countries spend less than 5% most countries in the region spend less than US\$600 million a year on infrastructure services or equivalently less than US\$50 per person. While these fiscal commitments seem large when expressed as a share of GDP compared to the actual nominal investment values, they are small when placed in the context of the amounts needed. Closing the gap required raising more funds and looking for more effective ways to meet infrastructure targets, stated the report. PPPs could play a role in mitigating the funding requirements.

The chapter also presented theoretical review; the study is grounded on public-choice theory and theory of x-efficiency. Public-choice theory holds a motivational assumption that each party will act to prevail over the other to stay in power. The political context appeared to be a determining factor in the success and failure. This application is discarded, because public choice theory suggests bureaucrats aim to enlarge budgets, however, in a PPP context, it requires them to control less money and fewer staff. Theory of x-efficiency suggests that countries lacking external sources of revenue experience severe fiscal crises followed by the emergence of parliamentary majorities that tend to be more open to foreign private investment. By contrast, countries with greater exogenous or external resources have had milder economic crises and have been less inclined to adopt market-oriented policies. Finally, the study shows gap that the study intends to bridge, most of the studies concludes that the infrastructure deficit estimated in most developing continents such as sub-Saharan Africa (SSA) is substantially higher than what domestic resources can meet. However the relation between funding of project through PPP is not clearly defined. Therefore, further research is required to investigate factors influencing funding of public private partnership road projects.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter provides an overview of the research methodology. It includes research design, target population, research instruments, and data collection procedure and data analysis technique.

#### **3.2 Research Design**

This research problem was studied through the use of descriptive survey research design. This design is considered appropriate for the type of objective of this study as it will enable the researcher to describe the state of affairs as they exist without manipulation of variables which is the aim of the study. By employing this study design, this study will focus on obtaining quantitative data from a cross-section of project members. It was also be used to collect qualitative data from key informants.

#### **3.3 Target Population**

The target population of this study was PPP Unit within the National Treasury and KeNHA under the Ministry of Transport and Infrastructure while the study populations were 62 staff working in these institutions. These respondents were selected since they were involved both in PPP partnership process where AFDBA was the financier while KeNHA is a semi-autonomous road agency: responsible for the management, development, rehabilitation and maintenance of national roads in the country, the PPPU focus is to serve as the secretariat and technical arm of the PPP Committee, which is mandated with assessing and approving PPP projects in the country.

#### **3.4 Sample Size and Sampling Procedures**

From the target population of the study is 62 staff from PPP unit and KeNHA. Since the number of targeted population is small, the study employed census where all respondents were involved in the study.



### **3.5 Research Instruments**

The study employed a questionnaire to collect primary data. The questionnaires were used to collect data from the selected staff in KeNHA and PPP unit. Questionnaires are appropriate for studies since they collect information that is not directly observable and accomplishments as well as experiences of individuals (Mellenbergh, 2008). The questionnaire comprised of both open and close-ended questions. The questionnaire collected both qualitative and quantitative data. Saunders (2003) stated that a questionnaire is useful in obtaining objective data because participants are not manipulated in any way by the study. According to Saunders (2003) questionnaires have the added advantage of being less costly and using less time as instruments of data collection. The data instrument will address the four research objectives while it was subdivided into two sections. The first section of the questionnaire enquired general information about the respondents, while the second section answered the four objectives.

#### **3.5.1 Piloting of the Instruments**

Prior to the main study, the researcher carried out a pilot study among 20 respondents from the private partners. The pilot group was done through random sampling. Mugenda and Mugenda (2003) suggest that the piloting sample should be 1 to 10% of study sample depending on the study sample size. The pilot group was not involved in the final study. Piloting helped in revealing questions that could be vague which allows for their review until they convey the same meaning to all the subjects (Creswell, 2008).

#### **3.5.2 Validity of the Research Instruments**

To ensure content validity, the instrument was reviewed by the researcher's supervisor and an expert in the area of PPP project financing to assess the degree to which the instrument could measure and determine the content of a particular concept. Content validity yields a logical judgment as to whether the instrument covers what it is supposed to cover. Content validity ensures that all respondents understand the items on the questionnaire similarly to avoid misunderstanding.

### **3.5.3 Reliability of Research Instruments**

The reliability of the instrument was estimated using Cronbach's Alpha Coefficient which is a measure of internal coefficient. The Alpha ( $\alpha$ ) measures internal consistency by establishing if certain item measures the same construct. Cronbach's Alpha was established for every objective in order to determine if each objective would produce consistent results should the research be done later on. A reliability of at least 0.70 at  $\alpha=0.05$  significance level of confidence will be acceptable.

### **3.6 Data Collection Procedure**

The researcher engaged two research assistants who assisted in data collection. The research assistants were trained to clearly understand the research instruments, purpose of the study and ethics of research. The researcher and research assistants administered the questionnaires to the respondents face to face to the respondent targeted. The questionnaires were administered through drop and pick later method. However, research assistance waited for respondents who have time to fill in as they wait while they kept reminding the respondents to fill in the questionnaires through frequent phone call and pick the questionnaires once fully filled

### **3.7 Data Analysis Techniques**

Data was cleaned, coded, entered and analysed using Statistical Package for Social Science (SPSS, Version 21.0). SPSS was used because it is fast and flexible and provides more accurate analysis resulting in dependable conclusions. Data analysis involved computation of certain measures along with searching for patterns of relationships that exist between the dependent variable and independent variables. The data was analysed according to variables and objectives of the study. Descriptive statistics was used to analyses, present and interpret data. Descriptive analysis involved use of frequency distribution tables. In addition, the researcher also conducted inferential analysis which involved coefficient of correlation, coefficient of determination, ANOVA and a multiple regression analysis to establish the strength and relationship between the dependent and independent variables.

The regression equation will be as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \alpha$$

Where: **Y** is the dependent variable (Funding of PPP Project),

**$\beta_0$**  is the regression coefficient/constant/**Y**-intercept,

**$\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$**  are the slopes of the regression equation,

**$X_1$**  is the government policies

**$X_2$**  is the nature of project,

**$X_3$**  is the budget deficit,

**$X_4$**  is the political will,

**$\alpha$**  is an error term normally distributed about a mean of 0 and for purpose of computation, the  **$\alpha$**  is assumed to be 0.

### **3.8 Ethical Considerations**

After consent is given by the National Commission for Science, Technology and Innovation to collect data, the researcher coordinated data collection process after seeking permission from KeNHA and PPP unit. While conducting the study, the researcher ensured that ethics are observed. The researcher endeavoured to obtain informed consent from the respondents before undertaking to collect data from the field. Participation in the study will be voluntary where the respondent were briefed on the intention of the research and what the study sought then were requested whether they are ready to participate only those who accepted to participate were interviewed. Privacy and confidentiality were observed. The objectives of the study were explained to the respondents with an assurance that the data provided were used for academic purpose only.

### 3.9 Operational Definition of Variables

The operationalization of variables is as shown in Table 3.1.

**Table 3.1 Operationalization of Variables**

| <b>Objectives</b>   | <b>Independent Variables</b> | <b>Indicators</b>  | <b>Measurement Scale</b> | <b>Type of analysis</b> | <b>Tools of analysis</b>                                |
|---|------------------------------|--|--------------------------|-------------------------|---|
| To determine how budget deficits influence funding of public-private partnership road projects        | Budget Deficits              | <ul style="list-style-type: none"> <li>• Amount of debts country has</li> <li>• Fund allocated</li> <li>• Cost increase</li> <li>• Debts avoidance</li> <li>• Economic viability</li> <li>• Inflation rate</li> <li>• Exchange rate</li> </ul>   | Nominal                  | Descriptive Regression  | Frequency distribution tables, Tabulation & percentages |
| To establish how procurement procedures influence funding of public-private partnership road projects | Procurement Procedures       | <ul style="list-style-type: none"> <li>• Competitive procurement process</li> <li>• Number of successful projects</li> <li>• Availability of adverts</li> <li>• Availability of tender committee</li> <li>• Availability of evaluation committee</li> <li>• Signed tender document</li> <li>• Minutes for tendering committee</li> <li>• Sustainable procurement requirements</li> </ul> | Nominal                  | Regression              | Frequency distribution tables & percentages             |

|  |   |  |                          |                         |   |
|--|---|--|--------------------------|-------------------------|---|
| To investigate how project financial feasibility influence funding of public-private partnership road projects | Project financial Feasibility                       | <ul style="list-style-type: none"> <li>• Joint investment funding</li> <li>• Investment returns</li> <li>• Level of projected profitability to the society and economy</li> <li>• Amount of fund allocated to project</li> </ul>   | Nominal                  | Regression              | Frequency distribution tables, Tabulation & percentages |
| To assess how project schedules influence funding of PPP road projects   | Project Schedules                                   | <ul style="list-style-type: none"> <li>• Availability of project plan</li> <li>• Project design</li> <li>• Project technical feasibility</li> <li>• Resources availability</li> <li>• Availability of project team</li> <li>• Monitoring and evaluation plan</li> <li>• Budget plan</li> </ul> | Nominal                  | Regression              | Frequency distribution tables, Tabulation & percentages |
|  | <b>Dependent Variable</b>                           | <b>Indicators</b>  | <b>Measurement Scale</b> | <b>Type of analysis</b> | <b>Tools of analysis</b>                                |
|  | Funding of public private partnership road projects | <ul style="list-style-type: none"> <li>• Availability of contract document</li> <li>• Amount of capital disbursed</li> <li>• Number of partners involved</li> <li>• Number of PPP participating projects</li> <li>• Availability of minutes</li> </ul>   | Nominal                  | Regression              | Frequency distribution tables, Tabulation & percentages |

**CHAPTER FOUR**  
**DATA ANALYSIS, DISCUSSION, INTERPRETATION**  
**AND PRESENTATION**

**4.1 Introduction**

This chapter focused on the data analysis, interpretation and presentation of the findings. The main purpose of this research was to examine factors influencing funding of public private partnership road projects in Kenya with focus to infrastructural development of Thika Road. The study also sought to establish whether budget deficits, procurement procedure, project financial feasibility and project schedules influence funding of public-private partnership road projects. The researcher made use of frequency tables, percentages, mean and standard deviation to present data.

**4.2 Questionnaire Return Rate**

The study targeted 62 respondents in collecting data on factors influencing funding of public private partnership road projects in Kenya with focus to infrastructural development of Thika Road. The questionnaire return rate results are shown in Table 4.1. From the study, 50 out of 62 targeted respondents filled in and returned the questionnaire contributing to 80%. This response rate was good, representative and conforms to Mugenda and Mugenda (1999) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. However, 20% (12) did not respond to the information that the study sought. The questionnaires that were not returned were due to respondents not being available to fill them in time and after persistence follow-ups, there were no positive feedback from them. The response rate demonstrated the willingness of the respondents to participate in the study.

**Table 4.1 Response Rate**

| <b>Response</b>            | <b>Frequency</b> | <b>Percentage</b> |
|----------------------------|------------------|-------------------|
| Filled in questionnaires   | 50               | 80                |
| Un returned questionnaires | 12               | 20                |
| <b>Total</b>               | <b>62</b>        | <b>100</b>        |

### 4.3 Demographic Characteristics of the Respondents

The demographic information is presented under the following sub-sections; institution of working, academic qualification, working duration and position held by respondents.

#### 4.3.1 Institution of Working

The study sought the institutions that the respondents were working at to ensure that those participate in the study are in a position to give the relevant information that the study sought. Majority (54%) of the respondents were working with KeNHA while the rest 46% of the respondents were working with PPP Unit under the ministry of finance. always have varying impacts on the total satisfaction of employees working either in public or private organizations. According to Moynihan and Pandey (2007) the nature of the institution that employee is works at always have varying impacts nature of the task or responsibilities vest to him or her either in public or private organizations. Majority of the participant were from KeNHA, this illustrates that the information presented in this study is reliable since KeNHA was responsible for Thika Road supervision hence they have adequate information pertaining the project. Likewise PPP unit staff have given their views through providing information that concerns PPP projects.

**Table 4.2 Institution of Working**

|              | <b>Frequency</b> | <b>Percentage</b> |
|--------------|------------------|-------------------|
| PPP Unit     | 23               | 46                |
| KeNHA        | 27               | 54                |
| <b>Total</b> | <b>50</b>        | <b>100</b>        |

#### 4.3.2 Academic Qualification

The study was also inquisitive to determine the highest level of the academic qualification that the respondent held where the majority (47%) of respondents were graduate, 30% were post graduate (masters holder) while the rest (23%) had diploma as their highest level of education as indicated in Table 4.3 below. Perrett (2003) pointed that academic qualification of the staff in an organization enhances their ability to handle their tasks and also to understand any unique working formula in work place. From the

findings most of the staff working at KeNHA and PPP unit are literate and hence they are capable of understanding any strategic decision that is formulate with core aim of improving the services they deliver to the public.

**Table 4.3 Academic Qualification**

|               | <b>Frequency</b> | <b>Percentage</b> |
|---------------|------------------|-------------------|
| Diploma       | 12               | 23                |
| Graduate      | 24               | 47                |
| Post graduate | 15               | 30                |
| <b>Total</b>  | <b>50</b>        | <b>100</b>        |

#### **4.3.3 Working Duration**

The researcher requested the respondents to indicate the working duration in their respective organization. Majority (53%) of the respondents had worked in the organization for a period of 6-10 years, 36% had worked for a period of 1-5 years, 7% had worked for a more than 16 years while the rest (5%) had served in the organization for a period of 10-15 years as shown in table 4.4. According to Robbins and Coulter (2005) there is a strong relation between working duration and services offered, employees who have worked in a certain organization or sector for a longer period deliver a quality service compared to those worked in a short period. This illustrates that most of the respondents of this study had worked for an ample time within the organization thus they were conversant of the information that the study sought pertaining to the organization.

**Table 4.4 Working Duration**

|               | <b>Frequency</b> | <b>Percent</b> |
|---------------|------------------|----------------|
| 1- 5 years    | 18               | 35.5           |
| 6 – 10Years   | 27               | 53.2           |
| 10 – 15Years  | 2                | 4.8            |
| Above 16Years | 3                | 6.5            |
| <b>Total</b>  | <b>50</b>        | <b>100.0</b>   |



#### 4.3.4 Position held by the Respondents

Data revealed that the majority of the respondents (32%) were PPP experts, 26% were road engineers, 18% were transport economist, 14% were financial advisor while 10% were legal advisor as shown in Table 4.5. Holbrough (2008) recommended that ranks or position one held in the workplace leads to easier application and strategic practices that leads to better performance of the organization towards achieving organizational goals and objectives. This depicts that all participant of the study were under the level to which the study targeted as stipulated in previous chapter. Compositions of different people from different level of expertise enhance implementation of PPP projects. This also shows that the expertise required to undertake PPP projects is both diverse and specific. The expertise commonly needed spreads over various fields such as technical, finance, and legal. PPP experts offer advice and offer a broader PPP service beyond legal/financial/technical boundaries and may therefore act as multidisciplinary advisers and experts in project management hence the lower number of Legal advisors hence there has been little progress towards instituting legal and regulatory frameworks for private-sector participation.

**Table 4.5 Work Position**

|                     | <b>Frequency</b> | <b>Percentage</b> |
|---------------------|------------------|-------------------|
| PPP experts         | 16               | 32                |
| Road engineer       | 13               | 26                |
| Transport economist | 9                | 18                |
| Financial advisor   | 7                | 14                |
| Legal advisor       | 5                | 10                |
| <b>Total</b>        | <b>50</b>        | <b>100</b>        |

#### 4.4 Public Private Partnership

The study requested the respondents to give their opinion on aspects related to PPP on road project funding. This is great importance since it forms the basis in which the researcher can clearly identify respondents' ability to give reliable information that the study sought.

#### 4.4.1 Number of PPP Projects the Respondents are involved in

The study also sought to establish the number of PPP projects that the respondents have been involved in. From the findings as indicated in Table 4.6, majority (54%) of the respondents has been involved in 6-10 number of PPP projects, 28% had been involved in more than 10 projects, while 18% had been involved in 1-5 PPP units. This gives credence to Alesina, Baqir, and Easterly (1999), who argue that ethnically divided countries require a larger number of infrastructure projects or public goods and services. This implies that most of the respondents had adequate experience on PPP units.

**Table 4.6 Number of PPP Projects Respondents Involved In**

|              | <b>Frequency</b> | <b>Percentage</b> |
|--------------|------------------|-------------------|
| 1 to 5       | 9                | 18                |
| 6 to 10      | 27               | 54                |
| More than 10 | 14               | 28                |
| <b>Total</b> | <b>50</b>        | <b>100</b>        |

#### 4.4.2 Respondents involvement in PPP Projects

The researcher further sought to establish the nature of PPP projects that the respondents have been involved in. Data revealed that most of the respondents (42%) indicated that they have been involved in road projects, 34% had been involved in schools and hospitals, 32% have been involved in housing and offices, 26% have been engaged in power and energy, 22% have been engaged in water and sanitary while 16% had engaged in railway projects. According Francesconi and Muthoo (2004) PPP determinants vary across industries depending on the nature of public infrastructure, capital intensity and technology required. This implies that majority of the respondents indicated that they have been involved in road projects.

**Table 4.7 Respondents involvement in PPP Projects**

|                       | <b>Frequency</b> | <b>Percentage</b> |
|-----------------------|------------------|-------------------|
| Road projects         | 21               | 42                |
| Railway               | 8                | 16                |
| Water and sanitary    | 11               | 22                |
| Housing and offices   | 16               | 32                |
| Power and energy      | 13               | 26                |
| schools and hospitals | 17               | 34                |

#### **4.4.3 Benefits of Public Private Partnership on Road Project Funding**

From the findings, majority (62%) of the respondents indicate that the PPP on road project funding leads to improve project value-for-money, 50% indicated that PPP on road project funding mobilizing private sector resources, 42% indicated that reducing the project costs, 38% opined that road project funding enhance budgetary benefit while 26% pointed that PPP on road project funding transfer optimal risks to the private sector as presented table 4.8. PPPs is instrumental tool in accelerating development, they also present a new set of challenges for the public sector (Sein, 2006). PPPs could play a role in mitigating the funding requirements. This indicates that PPP on road project funding leads to improve project value-for-money.

**Table 4.8 Benefits of funding PPP road Projects**

|  | <b>Frequency</b> | <b>Percentage</b> |
|--|------------------|-------------------|
| Improve project value-for-money              | 31               | 62                |
| Reducing the project costs                   | 21               | 42                |
| Budgetary benefit                            | 19               | 38                |
| Transfer optimal risks to the private sector | 13               | 26                |
| Mobilizing private sector resources          | 25               | 50                |

## 4.5 Budget Deficits

Budget deficit was identified as the first objective of the study to investigate whether budget constraints reflected in large deficits may force the government to adopt PPP to accelerate public infrastructure financing.

### 4.5.1 Main Source of Finance for Road Infrastructure

Findings shows that majority of the respondents (58%) indicated that the government is the main source of finance for road infrastructure while 42% indicated that private sector is the main source of finance for road infrastructures as shown in Table 4.9 . Sharma (2012) when government has budget constraints reflected in large deficits and heavy debt burden, they are more likely to adopt PPP type arrangement to accelerate public infrastructure financing in their countries. Successful PPPs, such as telecom investments in SSA or toll roads in South Africa, hold the promise that PPPs can assume a significant role in solving Africa's infrastructure deficit. However, it should be noted that providing the bulk infrastructure within a country will remain a government responsibility (Yescombe, 2007). This illustrates that the majority of the respondents indicated that government is main source of finance for road infrastructure in Kenya. Addressing Kenya's infrastructure deficit will require sustained expenditure to otherwise close the infrastructure funding gap to improve the quality of public investment and reduce the major rehabilitation backlog of roads.

**Table 4.9 Sources of financing PPP road Projects**

|                | <b>Frequency</b> | <b>Percentage</b> |
|----------------|------------------|-------------------|
| Private sector | 21               | 42                |
| Government     | 29               | 58                |
| <b>Total</b>   | <b>50</b>        | <b>100</b>        |

### 4.5.2 Influence of Budget Deficits on PPP Road Project Funding

The researcher also sought to find out the extent to which budget deficits influence PPP road project funding. From the findings, most of the respondent pointed that importance of the institutional set-up of the financial market in the transmission of monetary and

credit policy on investment influence PPP road project funding to great extent. The chronic and persistent shortage of foreign exchange and restrictions on foreign currency transfers also considered as a serious constraint facing investors in PPP road project funding. Amount of funds allocated to finance infrastructure contribute in aggravating the gap in the market influence PPP road project funding to great extent. Kahf (2002) suggests that governments do not have to expense their money to invest in infrastructure because such task can be left to the private sector. Low inflation rate contributes to Kenya's trade competitiveness influence PPP road project funding to great extent. Involving private funding basically helps countries to avoid debts in financing the development of public facilities (Iqbal & Khan 2004). Countries with high liquidity in the banking system have been able to tide the crisis influence PPP road project funding to great extent. Budget deficits influence PPP road project funding to greater extent. This implies that most of the respondent pointed to great extent that importance of the institutional set-up of the financial market in the transmission of monetary and credit policy on investment influence PPP road project funding.

#### **4.5.3 Solution of PPPs on Budget Shortfalls in Road Infrastructures**

Data shows the results of the findings on solution that the PPP has on budget shortfalls as indicted in Table 4.10, majority (58%) of the respondents indicated PPP can have an effect of budget shortfall while 42% were of the opinion that there PPP has no positive effect budget shortfall. Hammami and Ruhashyankiko (2006) found that countries with large amount of natural resources allocated to finance infrastructures have less PPP projects and investments. Bertisen and Davis (2008) identified other variables which impact construction time and cost overrun. This implies that majority of the respondents indicated PPP can have an effect of budget shortfall.

**Table 4.10 Budget shortfalls on PPP road project funding**

|              | <b>Frequency</b> | <b>Percentage</b> |
|--------------|------------------|-------------------|
| Yes          | 29               | 58                |
| No           | 21               | 42                |
| <b>Total</b> | <b>50</b>        | <b>100</b>        |

#### 4.5.4 Strengthening Longer-Term Budget Frameworks

The researcher sought to establish whether Kenya considers establishing or strengthening longer-term budget frameworks. Majority (62%) of the respondent indicated that Kenya considers establishing or strengthening longer-term budget frameworks while the rest (38%) of the respondent indicated there is no such intention or consideration as shown in Table 4.11. The amount of fund allocated to finance infrastructure contributes largest in exacerbating the gap in the market for infrastructure finance (Reside and Mendoza 2010). This depicts that majority of the respondent indicated that Kenya considers establishing or strengthening longer-term budget frameworks.

**Table 4.11 Strengthening Longer-Term Budget Frameworks**

|              | <b>Frequency</b> | <b>Percentage</b> |
|--------------|------------------|-------------------|
| Yes          | 31               | 62                |
| No           | 19               | 38                |
| <b>Total</b> | <b>50</b>        | <b>100</b>        |

#### 4.6 Procurement Procedures

Procurement procedures enable infrastructure funding to be done in competitive environment which ensures effective funding of road project. Where infrastructure funding is provided in a competitive process that is transparent and efficient.

##### 4.6.1 Influence of Procurement Procedures on PPP Project Funding

From the findings, most of the respondent agreed that to enhance PPP financing of infrastructure partners ensure that there are signed tender documents, infrastructure funding is provided in a competitive process minutes for tendering committee are available and that procurement procedures influence funding of PPP road projects. Clear project ideas and client requirements should aid to attain these in the bidding process. In most cases, competitive bidding exclusively on price may not support to secure a strong private consortium and attain value for money for the public (Corbett & Smith 2006). Also respondents agreed that government considers the number of successful projects that a partner has delivered, there are policies on PPP that stipulate PPP procurement

guidelines and that government ensures the effective procurement of projects in advertising tenders. Governments are motivated to procure infrastructure projects through PPP route in view of their desire to reduce sovereign borrowings, bring in efficiency in the erstwhile inefficient public procurement system and the consideration of benefits due to sharing of the financial risks and rewards between public and private sectors (Grimsey and Lewis 2002). On the other hand, respondents agreed that governments recognize the importance of the competitive procurement process in PPP project funding. Before engaging in PPP the government and partners ensure that there is availability of evaluation committees that are responsible on finances of the project, ensure effective funding of infrastructure government establish tender committees to facilitate procurement process that sustainable. One of the competitive advantages in entering these markets comes from the ability of these types of companies to derive construction and project management payments from upfront capital investments (World Bank, 2009). This depicts that to enhance PPP financing of infrastructure partners should ensure that there are signed tender documents.

#### **4.6.2 Applicability of Procurement law on PPP Project**

Further the study requested the respondents to indicate whether procurement law is applicable on PPP Project. From the findings, majority (79%) of the respondents were of the opinion that procurement law is applicable on PPP Project while the rest (21%) of the respondents opined that procurement law is not applicable on PPP Project. According to Yuan et al. (2008) application of procurement policies enable the government and partners adopting PPP procurement, to track the capabilities of processes in PPP projects whereby the strength and weakness of these processes can be identified. Application of government policies provides a sustainable procurement framework that enhances funding of infrastructures.

**Table 4.12 Applicability of Procurement law on PPP Project**

|              | Frequency | Percent    |
|--------------|-----------|------------|
| Yes          | 40        | 79         |
| No           | 11        | 21         |
| <b>Total</b> | <b>50</b> | <b>100</b> |

#### **4.7 Project Financial Feasibility**

To safeguard project economic feasibility, the government ponder some forms of government guarantees, joint investment funding, or supplemental periodic service payments to permit the private sector cover the project costs and earn judicious profits and investment returns. As such this study sought to investigate whether project financial feasibility influencing funding of road projects.

##### **4.7.1 Influence of Financial Feasibility on PPP Project Funding**

The researcher requested the respondents to indicate the extent to which project financial feasibility influence PPP project funding. Most of the respondents pointed that project financial feasibility influence PPP road project funding, Financing package are carefully tailored to the characteristics of the project and government consideration to private sector's profitability requirements in order to have stable arrangements in PPP projects influence PPP project funding to a great extent. Access to PPP funds for construction services rendered effectively reduces their investment costs as the downstream PPP operator. This would not be available with a public procurement contract (Grimsey and Lewis, 2002). Respondent also opined that Government analyses risks associated with the investment project and Conditions PPP have potential increase in VFM compare to public comparator influence project funding to a great extent. This shows that project financial feasibility influence PPP road project funding. According to Cheung (2009) PPP is a procurement approach where the public and private sector join forces to deliver a public service or facility. To safeguard project economic feasibility, the government ponder some forms of government guarantees, joint investment funding, or supplemental periodic service payments to permit the private sector cover the project costs and earn judicious profits and investment returns.



## 4.8 Project Schedules

Every project has a projected timeframe that indicates the date and time of completion. However, estimation of time has continued to be a problem of great concern and interest to both financiers and contractors.

### 4.8.1 Observation of Timeline

The researcher summarizes the results of the findings on whether timelines are updated and tracked to ensure accountability as indicated in table 4.13 where the majority (84%) of the respondent indicated that timelines are updated and tracked to ensure accountability while 16% felt otherwise. This implies that majority of the respondent indicated that timelines are updated and tracked to ensure accountability. This is in accordance to a study by Bertisen & Davis (2008) who asserts that reducing the delays in completion of projects can help to reduce resources spent on heavy litigation processes. According to Gartner Institute study (2011) 50% of all projects are delivered above schedule and budget.

**Table 4.13 Observation and Tracking of Timeline**

|              | <b>Frequency</b> | <b>Percent</b> |
|--------------|------------------|----------------|
| Yes          | 42               | 84             |
| No           | 8                | 16             |
| <b>Total</b> | <b>50</b>        | <b>100</b>     |

### 4.8.2 Influence of Project schedules on PPP Project Funding

The researchers requested the respondent to indicate their level of agreement on the statement relating to influence of project schedules on PPP project funding. From the findings most of the respondents agreed that project schedules influence funding of infrastructural projects such as roads in Kenya and that there is a proper monitoring and evaluation model for ensuring continuous value-for-money outcomes. Ogunsemi and Jagboro (2006) opined that the concept of project duration is important factor that influence funding of a project. Further respondents agreed that availability of project plan and project duration important considered as an important procedure in PPP and that

availability of budget plan enables the private partner to have better control of cost overruns. Construction delays do not only result in cost overruns and poor quality but also greater disputes which may even cause financier to counter losses (Williams, 2003). PPP projects are flexible when changes occur or are required in the future and that government ensures ultimate objective of a PPP project is achieved and implementation of the terms of the concession monitored and enforced. Respondent were neutral that government has a technical feasibility study to determine the projects' requirements during the investment and operating periods. This implies that project schedules influence funding of infrastructural projects such as roads in Kenya. This agrees with a study by Ogunsemi and Jagboro (2006) who opined that the concept of project duration is important factor that influence funding of a project. Estimation of time has continued to be a problem of great concern and interest to both financiers and contractors. Companies have been finding it difficult to deliver on time not because of lack of financial resources but mainly due to the fact that they are facing enormous pressure of multiple jobs and parallel deadlines with less than adequate human resources (Bertisen & Davis 2008). Focus on reducing the delays can also help to reduce resources spent on heavy litigation processes. According to Gartner Institute study (2011) 50% of all projects were delivered above schedule and budget.

#### **4.9 Inferential Statistic**

To establish the relationship between the independent variables and the dependent variable the study conducted inferential analysis which involved coefficient of correlation, coefficient of determination and multiple regression analysis.

##### **4.9.1 Coefficient of Correlation**

In trying to show the relationship between the study variables and their findings the study used the Karl Pearson's coefficient of correlation ( $r$ ). According to the findings as indicated in table 4.14, it was clear that there was a positive correlation between funding of PPP road projects and budget deficits as shown by a correlation value of 0.521, it was also clear that there was a positive correlation between funding PPP road projects and procurement procedure with a correlation value of 0.618, there was also a positive

correlation between funding PPP road projects and project financial feasibility with a correlation value of 0.587 and a positive correlation between funding PPP road projects and project schedules with a correlation value of 0.553. This shows that there was a positive correlation between funding PPP road projects and budget deficits, procurement procedure, project financial feasibility and project schedules.

#### **4.9.2 Coefficient of Determination**

The coefficient of determination was carried out to measure how well the statistical model was likely to predict future outcomes. The coefficient of determination, ( $r^2$ ) is the square of the sample correlation coefficient between outcomes and predicted values. As such it explains the contribution of the four independent variables (budget deficits, procurement procedure, and project financial feasibility and project schedules) to the dependent variable. Of the four independent variables that were studied, they contribute 55.1% of funding PPP road projects as represented by the adjusted ( $r^2$ ) as shown on table 4.23. This therefore means that other factors not studied in this research contribute 44.9% funding PPP road projects in Kenya. Therefore, further research should be conducted to investigate the other factors not under the study but also determines funding of PPP road projects.

#### **4.9.3 Multiple Regression**

The researcher further conducted a multiple regression analysis so as to identify the factors influencing funding of PPP road projects. The main purpose of multiple regressions is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. The equation

$$(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon) \text{ becomes:}$$

$$Y = 1.279 + 0.510 X_1 + 0.613X_2 + 0.525X_3 + 0.531X_4$$

The regression equation above has established that taking all factors into account (budget deficits, procurement procedure, and project financial feasibility and project schedules) constant at zero, funding of PPP road projects will be 1.279. The findings presented in table 4.15 shows that taking all other independent variables at zero, a unit increase in

budget deficits will lead to a 0.510 increase in funding of PPP road projects; a unit increase in procurement procedure will lead to a 0.613 increase in funding of PPP road projects; a unit increase in project financial feasibility will lead to a 0.525 increase in funding of PPP road projects and a unit increase in project schedules will lead to a 0.531 increase in funding of PPP road projects as shown in table 4.15. This infers that procurement procedure determine funding of PPP road projects to a great extent followed by project financial feasibility then project schedules while budget deficits influence little to funding of PPP road projects.

#### **4.10 Discussion of the findings**

The study sought to establish the extent to which budget deficits influence funding of public-private partnership road projects, to assess the extent to which procurement procedure influence funding of public-private partnership road projects, to examine the extent to which project financial feasibility influence funding of public-private partnership road projects and to examine the extent to which project schedules influence funding of public-private partnership road projects.

On budget deficits, the study found that government is main source of finance for road infrastructure. Majority of the respondents (58%) indicated that the government is the main source of finance for road infrastructure while 42% indicated that private sector is the main source of finance for road infrastructures. Kahf (2002) suggests that governments do not have to expense their money to invest in infrastructure because such task can be left to the private sector importance of the institutional set-up of the financial market in the transmission of monetary and credit policy on investment influence PPP road project funding. PPP type arrangement is commonly adopted by the governments which have infrastructure gap yet constrained by limited internal and external resources (Reside and Mendoza 2010). The chronic and persistent shortage of foreign exchange and restrictions on foreign currency transfers also considered as a serious constraint facing investors in PPP road project funding. Flyvbjerg, Holm and Buhl (2003) established that cost escalation was strongly dependent on the funding formula employed. PPP can have an effect of budget shortfall, however, the government is considering

establishing or strengthening longer-term budget frameworks. According to Reside and Mendoza (2010) reinvigorating the supply of infrastructure within the developing world requires supplementing finance with new sources of equity and debt finance.

To the objective of procurement procedures the study found that PPP financing of infrastructure partners ensure that there are signed tender documents, infrastructure funding is provided in a competitive process minutes for tendering committee are available and that procurement procedures influence funding of PPP road projects. Majority (79%) of the respondents were of the opinion that procurement law is applicable on PPP Project while the rest (21%) of the respondents opined that procurement law is not applicable on PPP Project. Competitive bidding exclusively on price may not support to secure a strong private consortium and attain value for money for the public. The government should take a long-term view in seeking the right partner (Corbett & Smith 2006). Government considers the number of successful projects that a partner has delivered, there are policies on PPP that stipulate PPP procurement guidelines and that government ensures the effective procurement of projects in advertising tenders. Procurement law is applicable on PPP Project. Most governments have recognized that for PPP project funding they have to ensure competitive procurement process is employed this ensures transparent and procurement function. World Bank (2009) pointed that construction and operating companies are some of the leading investors and sponsors of PPPs in core infrastructure.

On project financial feasibility to funding of PPP road projects the study found that project financial feasibility influence PPP road project funding. According to Yuan et al. (2008) process indicators enable clients and other agencies adopting PPP procurement, to track the capabilities of processes in PPP projects whereby the strength and weakness of these processes can be identified. Financing package are carefully tailored to the characteristics of the project and government consideration to private sector's profitability requirements in order to have stable arrangements in PPP projects influence PPP project funding. According to Cheung (2009) PPP is a procurement approach where the public and private sector join forces to deliver a public service or facility. To

safeguard project economic feasibility, the government ponder some forms of government guarantees, joint investment funding, or supplemental periodic service payments to permit the private sector cover the project costs and earn judicious profits and investment returns.

To the objective of project schedules funding of PPP road projects the study found that that timelines are updated and tracked to ensure accountability. Ogunsemi and Jagboro (2006) opined that the concept of project duration is important factor that influence funding of a project. Construction delays do not only result in cost overruns and poor quality but also greater disputes which may even cause financier to counter losses (Williams, 2003). Project schedules influence funding of infrastructural projects such as roads in Kenya and that there is a proper monitoring and evaluation model for ensuring continuous value-for-money outcomes. Majority (84%) of the respondent indicated that timelines are updated and tracked to ensure accountability while 16% felt otherwise. Companies have been finding it difficult to deliver on time not because of lack of financial resources but mainly due to the fact that they are facing enormous pressure of multiple jobs and parallel deadlines with less than adequate human resources (Bertisen & Davis 2008). Toor and Ogunlana (2008) in their study of major construction projects in Thailand identified the most significant problems causing minimal financing of a project are factors related to designers, contractors and consultants.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter provides the summary of the findings, the conclusions and recommendations of the study based on the objectives of the study. The chapter also presents the suggestions for further studies.

#### **5.3 Summary of Findings**

##### **5.3.1 Budget Deficits**

The study found that majority of the respondents indicated that government is main source of finance for road infrastructure. Also the study found that to great extent importance of the institutional set-up of the financial market in the transmission of monetary and credit policy on investment influence PPP road project funding. The study also found that majority of the respondents indicated PPP can have an effect of budget shortfall. Further the study established that majority of the respondent indicated that Kenya considers establishing or strengthening longer-term budget frameworks.

##### **5.2.2 Procurement Procedures**

The study found that to enhance PPP financing of infrastructure partners should ensure that there are signed tender documents. The study also found that majority of the respondents was of the opinion that procurement law is applicable on PPP Project.

##### **5.2.3 Project Financial Feasibility**

The study found that project financial feasibility influence PPP road project funding. Financing packages are carefully tailored to the characteristics of the project and government consideration to private sector's profitability requirements in order to have stable arrangements in PPP projects. Like the study found that to safeguard, joint investment funding, or supplement periodic service payments to permit the private sector to cover for the project costs and earn judicious profits and investment returns.

#### **5.2.4 Project Schedules**

The study found that majority of the respondent indicated that timelines are updated and tracked to ensure accountability. The study also found that project schedules influence funding of infrastructural projects such as roads in Kenya.

#### **5.4 Conclusion of the Study**

Based on the finding the concludes that PPPs deliver Government's public and social services in almost all sectors of the economy, namely, education, health, transport, irrigation and agro-process plants, prison facilities, community water systems, ICT, housing, government office accommodation, roads, railways, ports, airports, energy, social amenities such as stadia, and the list is endless.

Often, inadequately prepared projects that are not ready to go to the market are tendered resulting in delays in the procurement process as sometimes project outcomes are being changed or aligned during procurement. Further, poorly formulated projects by Contracting Authorities have resulted in PPP concessions being cancelled and projects being reverted back to Government or failure to achieve transaction closure in the first instance. There is need to create dedicated PPP Sub-Units in the Contracting Authorities that would also be staffed with trainable staff to enable the country implement PPP projects.

Project duration is an important factor that influences the funding of a project. Estimation of time has continued to be a problem of great concern and interest to both financiers and contractors. Companies have been finding it difficult to deliver on time not because of lack of financial resources but mainly due to the fact that they are facing enormous pressure of multiple jobs and parallel deadlines with less than adequate human resources.

#### **5.5 Recommendation of the Study**

Based on the findings of the study, the following recommendations were made: Government should ensure that Contracting Authorities are adequately funded to undertake relevant studies for effective implementation of PPPs. To be successful, PPP projects should be attractive to the private sector i.e. have a strong business case or



satisfy key commercial terms. This may require a feasibility analysis to establish whether the project makes sense at all and if it has the potential to be implemented as a PPP. The PPP policy emphasizes feasibility of a project as a condition precedent in delivering a successful project and states that a good and comprehensive feasibility study has to be undertaken to assess, among other criteria; affordability of project to both Government and the general public, bankability to attract private sector to commit finances in a project, value for money, optimal risk allocation among the parties, economic and social benefits and citizens empowerment. The PPP Act emphasizes that approvals are granted after the Contracting Authority

Public infrastructure is often not properly maintained due to limited funding resulting in poor infrastructure services and huge maintenance costs to Government. PPPs can help improve maintenance of infrastructure assets. PPPs expose private sector capital to performance risk hence the private sector is more incentivized to design and build infrastructure assets taking into account the costs of longer-term maintenance and renewal leading to greater accountability in the delivery of the service. PPPs bundle construction, rehabilitation and on-going maintenance in a single contract thereby incentivizing the private company to build assets to a high quality upfront to minimize the need for maintenance.

By engaging the private sector in the delivery of public infrastructure and services, Government can harness private sector innovation, commercial and management expertise in the direct provision of assets and services. PPPs can help improve infrastructure service delivery by reducing construction time and cost overruns for new infrastructure assets. The strongest motivation for private sector is to generate a return on their investment which depends on bringing the project on time and on budget; hence they are more incentivised to be more efficient and effective in managing infrastructure construction. Further, introducing a private operator under a PPP contract can help improve operational efficiency and service quality.

With a constraint on public financing, PPPs offer a viable solution to the creation of employment in infrastructure and related services. Infrastructure investments has the

potential to create jobs quickly while providing a foundation for future economic growth and employment, especially for a country like Kenya where the infrastructure gap is great and unemployment is high. Employment creation arising from investment in infrastructure can be as a result of (i) direct jobs i.e. construction of roads, energy plants, railways; (ii) employment through increased demand for core inputs for infrastructure assets i.e. cement, asphalt, steel etc. and (iii) employment associated with growth of the economy i.e. jobs created by other industries that rely on infrastructure for their business. Thus private financing of public infrastructure is critical for both short and long term economic growth and job creation.

Government should take a deliberate step to build technical skills and capacity in managing PPP projects in the Contracting Authorities. PPP capacity can be built through seminars and formal training. Engaging independent transaction advisors, especially on major projects, can also help build capacity within the PPP structures and improve the quality of project information relevant for project implementation. As ZDA has now been mandated by Cabinet to subsume the functions of the PPP Unit through an amendment of the PPP Act of 2009, it will embark on developing PPP regulations, guidelines and manuals for implementing PPP projects. These regulations and manuals will translate the current policy guidelines and spell out in greater detail the steps that Contracting Authorities and the private sector should follow in implementing PPP transactions. These documents will guide Contracting Authorities in identifying, assessing and structuring PPPs effectively to ensure affordability, value for money and optimal transfer of risks in projects.

### **5.6 Suggestions for Further Studies**

The study explored factors influencing funding of public private partnership road projects in Kenya. The study suggested that a further research be conducted on:

1. Successful factors for the implementation of public private partnerships in the construction industry.
2. Factors affecting the performance of public-private partnerships in infrastructure financing in Kenya.

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## APPENDICES

### Appendix I: Letter of Transmittal

**Chami N. Stella**

**P O Box 21845-00505**

**Nairobi.**

**12<sup>th</sup> October 2015**

**Dear Sir/Madam,**

**RE: FACTORS INFLUENCING FUNDING OF PUBLIC PRIVATE PARTNERSHIP ROAD PROJECTS IN KENYA: A CASE OF INFRASTRUCTURAL DEVELOPMENT OF THIKA ROAD**

I am a Master of Arts student at the University of Nairobi and in my final year of study. As part of the requirement for the award of the degree of Master of Arts in Project Planning and Management, I'm undertaking a research project on **"FACTORS INFLUENCING FUNDING OF PUBLIC PRIVATE PARTNERSHIP ROAD PROJECTS IN KENYA: A CASE OF INFRASTRUCTURAL DEVELOPMENT OF THIKA ROAD"**. In this regard, I am kindly requesting for your support in terms of time, and by responding to the attached questionnaire. Your accuracy and candid response will be critical in ensuring an objective research. It will not be necessary to write your name on this questionnaire and for your comfort, all information received will be treated in strict confidence. In addition, the findings of the study will solely be used for academic research purposes and to enhance knowledge in the field of micro-finance lending and young women's empowerment. Thank you for your valuable time on this.

Yours faithfully,

**Chami Natalia Stella**

**University of Nairobi**

**Appendix II: Questionnaire for PPP Unit and KeNHA Staff**

**Theme: factors influencing funding of public private partnership road projects in Kenya: A case of infrastructural development of Thika Road**

I am a Masters student studying Project Planning and Management at the University of Nairobi and I have designed the following questionnaire about the above topic. Kindly and humbly answer all the questions to the best of your knowledge. Indicate with a tick or filling in the space(s) provided. Use the space at the back of this questionnaire if you need more space for your responses.

**Part A: Respondents Bio Data**

1. Which institution are you working in?

PPP unit [ ] KeNHA [ ]

2. What is your highest academic qualification?

Certificate [ ] Diploma [ ]

Undergraduate [ ] Masters [ ]

PhD [ ]

Any other (specify) .....

3. For how long have you been working in this organization?

1 to 5 years [ ] 6 to 10 years [ ]

11 to 15 years [ ] 16 to 20 years [ ]

Over 20 years [ ]

4. Indicate the position you hold in your institution.

PPP experts [ ] Road engineer [ ]

Transport economist [ ] Legal advisor [ ]

Financial advisor [ ]

Any other (specify).....



**PART B: Public Private Partnership**

5. What is the role of the PPP Unit in the funding of road projects in Kenya?

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

How many PPP projects have you been involved in?

1-5 [ ] 6-10 [ ] More than 10[ ]

6. Which of the following PPP projects have you been involved with?

Road projects [ ] Railway [ ]

Water and sanitary [ ] Housing and offices [ ]

Power and energy [ ] schools and hospitals [ ]

Any other (specify).....

7. What are the benefits that accrue from Public Private Partnership on road project funding?

Improve project value-for-money [ ]

Reducing the project costs [ ]

Budgetary benefit [ ]

Transfer optimal risks to the private sector [ ]

Mobilizing private sector resources [ ]

8. Which kinds of financial institutions and investors are usually interested in PPP projects?

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

**PART C: Budget Deficits**

9. What should be the main source of finance for road infrastructure development in Kenya?

- (a) The private sector  (b) The government

10. Indicate the extent relating to the following aspects of how budget deficits influence PPP road project funding? Use a scale of 1-5, where 1- very low extent, 2- low extent, 3- neutral, 4- great extent, 5- very great extent.

|  | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Budget deficits influences PPP road project funding?   |   |   |   |   |   |
| Amount of funds allocated to finance infrastructure contribute in aggravating the gap in the market.   |   |   |   |   |   |
| Low inflation rate contributes to Kenya's trade competitiveness.   |   |   |   |   |   |
| The chronic and persistent shortage of foreign exchange and restrictions on foreign currency transfers also considered as a serious constraint facing investors in Africa. |   |   |   |   |   |
| Countries with high liquidity in the banking system have been able to tide the crisis in infrastructure financing.   |   |   |   |   |   |
| The importance of the institutional set-up of the financial market in the transmission of monetary and credit policy on investment.  |   |   |   |   |   |

11. Can PPPs solve all the budget shortfalls in Kenya?

- Yes  No

12. What approaches are currently in practice to budget for these partnerships and what are their implications for public finance?

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

15. Should Kenya consider establishing or strengthening longer-term budget frameworks?

Yes [ ] No [ ]

**PART D: Procurement Procedures**

16. Which regulations / procedures should be followed for procuring PPP projects?

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

17. Kindly indicate your level of agreement with the following aspects of procurement procedures and how they influence PPP project funding? Use a scale of 1-5, where 1- strongly disagree, 2- disagree, 3- neutral, 4- agree, 5- strongly agree.

| Statement   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Procurement procedures influence funding of PPP road projects?                                      |   |   |   |   |   |
| Governments recognize the importance of the competitive procurement process in PPP project funding. |   |   |   |   |   |
| Government considers the number of successful projects that a partner has delivered.                |   |   |   |   |   |
| The government ensures the effective procurement of projects in advertising tenders.                |   |   |   |   |   |
| To ensure effective funding of infrastructure government establish tender committees to facilitate  |   |   |   |   |   |

|  |  |  |  |  |  |
|--|--|--|--|--|--|
| procurement process  |  |  |  |  |  |
| Before engaging in PPP the government and partners ensure that there is availability of evaluation committees that are responsible on finances of the project. |  |  |  |  |  |
| To enhance PPP financing of infrastructure partners ensure that there are signed tender documents.   |  |  |  |  |  |
| Where infrastructure funding is provided in a competitive process minutes for tendering committee are available.   |  |  |  |  |  |
| There are policies on PPP that stipulate PPP procurement guidelines  |  |  |  |  |  |
| Sustainable Procurement requirements are provided.   |  |  |  |  |  |

18. In what ways does the Project team prepare the value-for-money analysis and tender document?

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

19. Which regulations / procedures should be followed for procuring PPP projects?

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

20. Does the procurement law/ PPP law applicable to the project treat all bidders (including overseas bidders) in an equal, fair and transparent manner?

Yes [ ] No [ ]

**PART E: Project Financial Feasibility**

21. What is the purpose of financial feasibility analysis in a road project?

.....

.....

.....

22. Indicate the extent to which the following aspects of project financial feasibility and how they influence PPP project funding? Use a scale of Use a scale of 1-5, where 1- very low extent, 2- low extent, 3- neutral, 4- great extent, 5- very great extent.

|  | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| Project financial feasibility influence PPP road project funding   |   |   |   |   |   |
| Government considers private sector's profitability requirements in order to have stable arrangements in PPP projects. |   |   |   |   |   |
| Financing package are carefully tailored to the characteristics of the project   |   |   |   |   |   |
| Government analyses risks associated with the investment project.  |   |   |   |   |   |
| Conditions PPP have potential increase in VFM compare to public comparator?  |   |   |   |   |   |
| Government considers time or cost saving opportunities   |   |   |   |   |   |

23. When and how is the value-for-money of a road PPP Project determined?

.....

.....

.....

24. What are the steps involved in Project Financial analysis of PPPs’?

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

**Part F: Project Schedules**

25. Are the timelines updated and tracked, to ensure accountability?

Yes [ ] No [ ]

26. What are the responsibilities of the parties involved in the PPP Project in ensuring a timely project delivery?

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

27. Indicate your level of agreement with the following aspects of project schedules and how they influence PPP project funding? Use a scale of 1-5, where 1- strongly disagree, 2- disagree, 3- neutral, 4- agree, 5- strongly agree.

|   | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Project schedules influence funding of infrastructural projects such as roads in Kenya.   |   |   |   |   |   |
| The availability of project plan and project duration important considered as an important procedure in PPP.                        |   |   |   |   |   |
| PPP projects are flexible when changes occur or are required in the future.   |   |   |   |   |   |
| Government has a technical feasibility study to determine the projects' requirements during the investment and operating periods. . |   |   |   |   |   |
| There is a proper monitoring and evaluation model for ensuring continuous value-for-money outcomes.                                 |   |   |   |   |   |
| Availability of budget plan enables the private partner to have better control of cost overruns                                     |   |   |   |   |   |
| Government ensures ultimate objective of a PPP  |   |   |   |   |   |

|   |  |  |  |  |  |
|---|--|--|--|--|--|
| project is achieved and implementation of the terms of the concession monitored and enforced. |  |  |  |  |  |
|---|--|--|--|--|--|

29. How does the government ensure that the assets and services required should be those that the private sector is capable of supplying?

.....

.....

.....

.....

***Thank You for Your Participation***

## **Appendix III: Respondents Consent Form**

### **(i) Introduction**

This is to inform you that a student studying masters of PPM UoN is carrying out a research to address some pertinent/relevant issues of concern project management. The research has been approved by the Department of Extra Mural Studies in UoN, Ministry of Transport and Finance.

You have been identified as a potential study participant and an appeal is being extended to you now, to read through/listen to the information contained in this document with the aim of giving your consent on whether you will agree to participate in the study.

### **(ii) Reason for the research**

You are being asked to join this study to help the researcher to understand some issues pertaining the funding of public PPP road projects in Kenya.

### **(iii) Your part in the study**

If you agree, a researcher will take some part of your time which will be approximately 10-15 minutes. The study aims at factors influencing funding of public private partnership road projects in Kenya with special focus to infrastructural development of Thika Road. Therefore, if you agree, you will be asked some questions about the funding of public private partnership road projects in Kenya. There is absolutely no penalty if you decide not to participate/take part in the study.

### **(iv) Benefits of the study**

What the researchers will learn from this study may not help you now but will be of use in future.

### **(v) Risk in participating in the study**

There is a chance that things we discuss may make you feel uncomfortable. You may refuse to answer any question at any time. You may as well propose to end your talk at any time.



**(vi) Confidentiality**

An individual (Research assistant) will talk with you in a private place. He/she will not ask you your name instead he/she will give you a number. Research study papers will be kept in a secure place. Neither your name nor number will appear anywhere in the study report.

**(vii) Compensation**

Joining the study is on a voluntary basis. There is no compensation available for study participants.

**(viii) Leaving the study**

You are free to leave the study at anytime. However, we will highly appreciate your cooperation during the study period which will last between 10 to 15 minutes.

**(ix) Statement of consent**

I have read/ listened to the information contained in this document and clearly understood it. I therefore agree to participate in the study.

**Signature** .....

**Date** .....

**Appendix IV: Inferential Statistic Raw Data**

**Table 4.14 Coefficient of Correlation**

| <b>Variables</b>                     |                     | <b>Funding PPP road projects</b> | <b>Budget Deficits</b> | <b>Procurement procedure</b> | <b>Project financial feasibility</b> | <b>Project schedules</b> |
|--------------------------------------|---------------------|----------------------------------|------------------------|------------------------------|--------------------------------------|--------------------------|
| <b>Funding PPP road projects</b>     | Pearson Correlation | <b>1</b>                         |                        |                              |                                      |                          |
|                                      | Sig. (2-tailed)     |                                  |                        |                              |                                      |                          |
| <b>Budget deficits</b>               | Pearson Correlation | .5210                            | <b>1</b>               |                              |                                      |                          |
|                                      | Sig. (2-tailed)     | .0032                            |                        |                              |                                      |                          |
| <b>Procurement procedure</b>         | Pearson Correlation | .6180                            | .3421                  | <b>1</b>                     |                                      |                          |
|                                      | Sig. (2-tailed)     | .0021                            | .0014                  |                              |                                      |                          |
| <b>Project financial feasibility</b> | Pearson Correlation | .5870                            | .1240                  | .0621                        | <b>1</b>                             |                          |
|                                      | Sig. (2-tailed)     | .0043                            | .0120                  | .0043                        |                                      |                          |
| <b>Project schedules</b>             | Pearson Correlation | .5530                            | .3420                  | .0000                        | .1660                                | <b>1</b>                 |
|                                      | Sig. (2-tailed)     | .0172                            | .0031                  | 1.000                        | .0031                                |                          |

**Table 4.15 Model Summary**

| <b>Model</b> | <b>r</b> | <b>r<sup>2</sup></b> | <b>Adjusted r<sup>2</sup></b> | <b>Std. Error of the Estimate</b> |
|--------------|----------|----------------------|-------------------------------|-----------------------------------|
| 1            | 0.742    | 0.551                | 0.641                         | 0.0438                            |

**Table 4.16 Regression Coefficients**

| <b>Model</b>                         | <b>Unstandardized Coefficients</b> |                   | <b>Standardized Coefficients</b> |          | <b>Sig.</b> |
|--------------------------------------|------------------------------------|-------------------|----------------------------------|----------|-------------|
|                                      | <b><math>\beta</math></b>          | <b>Std. Error</b> | <b>Beta</b>                      | <b>t</b> |             |
| <b>Constant/Y Intercept</b>          | 1.279                              | 1.316             |                                  | 1.451    | 0.357       |
| <b>Budget deficits</b>               | 0.510                              | 0.310             | 0.172                            | 4.242    | 0.0276      |
| <b>Procurement procedure</b>         | 0.613                              | 0.322             | 0.067                            | 3.452    | 0.0202      |
| <b>Project financial feasibility</b> | 0.525                              | 0.156             | 0.210                            | 3.382    | 0.0285      |
| <b>Project schedules</b>             | 0.531                              | 0.245             | 0.148                            | 3.358    | 0.0249      |