

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI

COLLEGE OF ART AND BUILT ENVIRONMENT

DEPARTMENT OF BUILDING TECHNOLOGY

**“KEY CHALLENGES TO PUBLIC PRIVATE PARTNERSHIPS AS MODE OF
PROCURING PUBLIC INFRASTRUCTURE AND SERVICE DELIVERY IN THE
ROADS AND HIGHWAY SECTOR OF GHANA”**

By

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**A thesis submitted to the Department of Building Technology of the Kwame Nkrumah
University of Science and Technology in Partial Fulfilment of the requirements for the
Degree of Master of in Procurement Management**

NOVEMBER, 2015

DECLARATION

I hereby declare that this submission is my own work towards the MSc in Procurement Management and that to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

I dedicate this report to my family and to my late father, Mr S. G BAYAA, may he rest in the bosom of the Lord!

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ACKNOWLEDGEMENT

My sincere gratitude goes to the Almighty God for His strength, guidance and wisdom throughout the study.

I would like to express my sincere gratitude to my supervisor Rev. Prof F. D. K, Fugar for whose useful tutoring and pieces of advice led to the successful completion of this project. I am also grateful to the following people, Bendah E, Batung E.Z, Kuunyem M.R, Nakaar A.B, Kaburi D and Sumah E for all the support throughout this period. God bless you all. Finally, I appreciate the effort of all my colleagues and also to all the respondents who spent their precious time to fill the questionnaire to make this project a success.



ABSTRACT

PPP is a contractual arrangement between a public entity and a private sector party, with clear agreement on shared objectives for the provision of public infrastructure and services which are traditionally provided by the public sector. The method offers a lot of benefit to the government as well as the private entity. Despite this, the use of the technique has been found to pose challenges which militate against it being used. Thus this study was designed to identify the key factors that militate against the successful implementation of Public Private Partnership (PPP) as a strategy for the delivery of projects at the Road and Highway sectors of Ghana. To do this, questionnaires were designed and administered to professionals working at the Ghana Highway Authority, Department of Urban Roads, Department of Feeder Roads, Ministry of Roads and Highways, Consultants and Contractors within the Accra Metropolis (the study area). These respondents were selected using purposive sampling technique. The data collected was analysed using the Statistical Package for Social Scientist Software Package (SPSS) version 16. The results revealed that even though PPP is been used as a procurement technique within the road and highway sector, the rate of utilization is very low. In other words, only few projects are executed using this method. In addition to the above, lack of regulatory and legal framework to back PPP, risk of private partner bankruptcy, lack of government interest as a result of change in government or political instability, lack of public administrative competence in development and control of PPP and lack of appropriate accounting treatment for project PPPs were identified as some of the key challenges. Recommendations were made in the light of the above findings which included establishing a legal and regulatory framework to back PPPs in Ghana.

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CHAPTER ONE

GENERAL INTRODUCTION

1.0 Background of Study

The provision of buildings and services in every country including Ghana is viewed as the sole duty of the Government. According to Harris (2003) and Grimsey (2002) the provision of major facilities and infrastructures for development are viewed as the responsibility of the public /government in many countries. Traditionally, the Government acquires an asset and uses public sector worker or a private entity to manage service or infrastructure (Grout 2003). In the road and highway sector, this method of public procurement is widely used by the Government of Ghana (GOG).

However, the Government cannot meet the infrastructure deficit through her budget allocations (GOG, June 2011). Moreover, Grimsey (2002) and Mustafa (1999) stated that the management of such infrastructure comes with risks which can be too expensive to be managed by the public sector. This has made most countries in the last two decades to continuously drift from the traditional mode of procurement to engage the private sector as a partner in the provision of these facilities and services (Grout, 2003). Currently, Public Private Partnership (PPP) has become the preferred choice for providing public infrastructure and services (Grimsey, 2002). In Ghana, it is one of the policies of the Government to promote the use of Public Private Partnership (PPP) as a means of taking advantage of private sector resources and expertise to bridge the infrastructure gap and provide services efficiently to the public (GoG - MoFEP, 2011). Currently, some of the projects which have benefited from PPP include the Accra-Takoradi road, the Accra-Tema Motorway, the Accra-Kumasi road and the Western corridor roads Phase I (Elubo-Sunyani) (Daily Graphic 06-11-2013, Pg.10)

Akintoye et al (2003) define Public Private Partnerships (PPP) as a contractual arrangement that involves the private sector in the design, financing, construction, ownership and or operation of a public sector utility or service. This joint agreement allows the public sector client and the private sector supplier to leverage their expertise and resources to achieve outcomes beneficial to the parties (Akintoye et al, 2003). PPPs generally have a wide range of models and the type of PPP model selected usually elaborates the level of involvement and or role of the contracting parties for the provision of public infrastructure. Proper planning and development of a project also paves way for better selection appropriate technology and project structure. (UNESCAP, 2011).

According to the Asian Development Bank Public Private-Partnership Handbook, Governments worldwide are usually motivated to enter into PPPs for the following reasons;

- i. As a means to utilize private capital to supplement the government's budget
- ii. To ensure an efficient and judicious use of the country's scarce resources
- iii. To provide access to advanced technology.

Despite the benefits expected from PPPs, there are challenges that may hinder the successful delivery of services or infrastructure using a PPP model. These challenges broadly fall under economic, legal, political, social, and administration, which require careful assessment and management in order to achieve the expected benefits of a successful PPP (UNESCAP, 2011).

It is important to identify the challenges and consequently develop methods to address them.

This will help remove all the bottlenecks associated with public-private partnerships.

1.1 Problem Statement

Traditionally, the acquisition of public infrastructure and services such as roads is seen as the sole duty of Government. The development is carried out using budgetary allocations. Recently the method has increasingly become impractical especially in developing countries which usually face budget deficits. One of the challenges facing developing countries including Ghana is infrastructure deficit. The problem is more critical in the road and highway sectors because of the huge capital required in this sector for development. Studies by the Africa Infrastructure Country Diagnostic (AICD, 2010) revealed that as huge as US\$

1.5billion is required annually over the next decade to address Ghana's infrastructure deficit.

In Ghana, infrastructure funding has been through public funds, donor support and concessional bilateral and multilateral loans and these sources have been found to be insufficient and unpredictable. To worsen the case, Ghana's status as a lower middle income country recently, has cause the supply of funds from donor countries and agencies to reduce (Ghana PPP Newsletter, April 2014).

The Government of Ghana is trying new opportunities to improve the development and maintenance of roads because the Ghana Road Fund could currently sustain only 40% of the road network (GNA, 2014). Thus the use of PPP is considered an ideal option and may even dominate infrastructure and service provision in developing countries very soon (Rwelamila, 2004). The National Policy on PPP was enacted and launched in October 2011 as a step to promote the use of PPP. Despite this, no single highway project has been completed using a PPP model.

1.2 Aim and Objectives

1.2.1 Aim

To identify the challenges that militates against the use of Public Private Partnership (PPP) for project delivery within the Roads and Highway sectors of Ghana.

1.2.2 Objectives

- i. To find out the extent of utilization of PPP for executing projects within the roads and highway sector of Ghana.
- ii. Identify the challenges in using PPP as a method of procurement within the Roads and Highway sector of Ghana.
- iii. Determine the key challenges in using PPP as a method of procurement within the Roads and Highway sector of Ghana.
- iv. To proffer measures to address the key challenges to the use PPP in the Roads and Highway sector of Ghana.

1.3 Research Questions

The study sought to find answers to the following questions.

- i. What is the extent of utilization of PPP for executing projects within the road sector of Ghana?
- ii. What are the challenges in the use of PPP for highway infrastructural development in Ghana?
- iii. What are the key challenges in the use of PPP for highway infrastructural development in Ghana?

- iv. What are the recommendations that can help overcome the key challenges in the use of PPP for highway infrastructural development in Ghana?

1.4 Significance of the Study

Government of Ghana seeks to encourage the use of PPP as an arrangement which combines public and private sector resources and expertise, to provide efficient infrastructure and service for the populace. The research seeks to contribute to the growing discussions on Public Private Partnerships in developing countries using the case of Ghana's road and highway sector.

1.5 Organisation of the Study

The study is arranged in five main chapters. The background of the study, problem statement, aim and objectives, the research questions, significance of the study, scope of the study and organization of the study as well as the limitations of the study build the chapter one. The chapter two presents the review of relevant literature on the concept of PPPs. Chapter three explains the research methodology adopted for the research. This entails the research design, sources of data, sampling technique and sample size, instrumentation, mode of data collection. Chapter four treats the data analysis and discussion of the findings of the study whilst the chapter five covers the conclusions and recommendations drawn from the findings of the research.

1.6 Limitations

The limitation of the study was not able to cover a large sample size due to lack of funds and limited time. That notwithstanding, the sample size used was reasonably reflective of the road and highway sector.

1.7 Scope of Research

Geographically, the study was limited the application of PPP at the road sector. Data was gathered from the Ghana Highway Authority (Head office), Ministry of Roads and Highways, Department of Urban Roads (Head office) and the Department of Feeder Roads (Head office) located in the Accra Metropolis. The study also covered A1 B1 category of road contractors. The study obtained relevant data and inputs from both the public offices and private individuals in order to obtain a broader picture of the issue from the two parties.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter reviewed relevant literature on Public Private Partnership (PPPs) as a method of public procurement particularly for highway and road infrastructure projects. This also

includes the theoretical basis for private sector party provision of public services and promoting co-operation among the private and public sectors in providing public infrastructure and services.

2.2 The Concept of Public Private Partnership

PPP arrangements are not principally about project financing of public infrastructure by a private party because the provision of funds is just one aspect (Grimsey and Lewis, 2004). Private sector involvement forms an essential part of successful service delivery for most public service providers and PPP can help leverage this private sector resources and involvement more efficiently (Delmon, 2011) Alfen et al (2009) explained that Publicprivate partnerships (PPP) is used in infrastructure development through the employment of private individuals or agencies in the financing, design, construction, ownership and operation of public infrastructure and service or both. In this case the private individual seller while government becomes the buyer of the facilities provided (Grout, 2003; Ahadzi, 2004). For PPP to be successful, the expertise of each partner to the contract should meet the public needs through the sharing of risks, resources, and rewards (CCPPP 2004).

Generally PPP arrangements involve a private party participating in, or providing support for the delivery of service or infrastructure, and a PPP project results in an agreement for a private sector party to deliver public infrastructure and or services.

According to Pierson and McBride (1996) the various types of PPP arrangements may take some of the following forms or features;

- (i) The public partner transfers the facilities under its control to the private entity. This is usually done with or without payment in return.
- (ii) the private sector entity develops, extends or renovates the infrastructure;

- (iii) The provision of services with output specifications set by the public party.
- (iv) The private entity used the facility at an agreed period of time. Normally, restrictions are placed on the operations, standards and pricing by the public entity.
- (v) The transfer of the facility back to the public usually does not attract any payment

In developed countries, PPPs are adopted used for the delivery of service and infrastructure at education, health, waste management and public buildings. In developing countries usually on the supply of power, water or build highways to support countries' socioeconomic growth is where more focus is (Alfen et al, 2009).

2.2.1 Public- Private Partnership Defined

According to the National Policy on Public Private Partnership (GoG, MoFEP 2011) PPP is a contractual agreement between a public entity and a private entity, with clear agreement on shared objectives for the delivery of public facilities and services. The arrangement ensures that the benefits and risks associated with the PPP are adequately shared between the parties. Mostly the private partner executes part or all of the public service and accepts the associated project risks for the agreed period whilst getting financial remuneration through user charges or Government budgets.

2.2.2 Traditional Public Procurement

- (i) Traditional Public Procurement: The acquisition of goods, works or services from a contractor or consultant by the public entity. The client or employer (public entity) clearly defines the input specifications of the item, infrastructure or service to be procured. The client after inviting for tenders, evaluates and selects the least tenderer to enter the contract with. The occupancy of the facility by the private entity is short term rather than long-term.

Moreover, the public sector retains ownership and accountability for the asset or the service provided whilst the private provides the asset in accordance with the objectives of the PPP.

The rewards and risks are also accordingly.

2.2.3 Types of Public Private Partnership Models

There are various PPPs in practice with each PPP model describing the investment, role, risk and responsibilities of the parties involved. Some examples of PPPs used worldwide are:

Build Operate Transfer (BOT), Build Own Operate (BOO), Leasing, Joint ventures, Management contracts. Other examples of PPP model types include; BLT (Build, Lease, Transfer), BOOR (Build, Own, Operate, Remove), BLTM (Build, Lease, Transfer, Maintain), DCMF (Design, Construct, Manage, Finance) LROT (Lease, Renovate, Operate, Transfer), BTO (Build, Transfer, Operate), BOOT (Build, Own, Operate, Transfer), DBFO (Design, Build, Finance, Operate), and DBFOM (Design, Build, Finance, Operate, Manage) (Delmon, 2011).

2.2.4 Features of PPPs.

Various forms of f PPPs exists worldwide however, some characteristics are common to each of them. Grimsey and Lewis (2004) identified the following as some basic features of PPPs.

(i) *Participants*

PPP usually involves 2 or more parties including a public entity. The various parties should be able negotiate and work on its own.

(ii) *Relationship*

The partnership in PPP needs to be enduring and relational (Kelly, 2000).

(iii) *Resourcing*

In PPP, the parties involved contribute something to the partnership. As explained earlier on, the aim of PPPs is to put resources in terms of knowledge, skills and funds together to provide a service or infrastructure or service. Thus, each party must contribute resources (money, property, authority, reputation) to the business.

(iv) *Sharing*

PPPs is about sharing responsibility, risk and rewards. Thus there has to be a joint interest and shared commitment. The public sector usually transfers some of the risks in owning and operating infrastructure to the private entity who has the ability to efficiently manage the project.

(v) *Continuity*

In PPPs the actors usually establish an enduring and stable relationship among themselves. The arrangement is a continual relationship with the terms of agreement negotiated between the parties involved from the outset (Middleton, 2000).

(vi) *Innovation*

A PPP project focuses on enabling bidders to produce innovative solutions to meet the requirements.

2.2.5 Parties to a PPP Project.

PPP is a complex process which requires inputs from the different parties, each having an essential role to play in managing project risk to achieve the shared objective. Generally a PPP project will involve the following key actors.

(a) The executing party

The project executing organization mostly a Government entity will generally ensure that the interconnection between the project and the government is successful. The Government entity will need to have the power to enter into a contract with a private entity and may not necessarily be the public body that oversees, manages, and regulates the services provided over the long term (Delmon, 2011). The project executing organisation usually seeks to transfer risks to the private sector entity without compromising efficiency (Alfen et al, 2009).

(b) Special Purpose Vehicle.

The parties of the project form a Special Purpose Vehicle to become the concessionaire. This contract addresses issues such as the sharing of the capital invested and the obligation each party (Alfen et al, 2009).

(C) Lenders.

This is the party that fund the project. The Financial institutions usually finance the project based on the project's assets and revenue stream for repayment. The banks conduct feasibility study to identify the project financial viability (Alfen et al 2009).

(d) Development finance institutions (DFIs).

The DFIs have common goals as lending banks in terms of their involvement in PPP projects (Alfen et al, 2009).

(e) Contractor, operator and other supplier.

The construction of the project is the responsibility of this party. Under PPP contracts, the contractor or operator takes the main risks born in the construction, operation and maintenance of the project. They sometimes provide funding.

2.2.6 Motives and Benefits of PPPS.

The Asian Development Bank, Public Private Partnership handbook (071107) has identified the following as the three key motivating factors to PPP arrangements between the government and private sector for infrastructure or service delivery;

- (i) The method helps to draw private resources to argument public resources or free them from the responsibility of providing a particular service or infrastructure;
- (ii) PPP results in efficient use of resources and
- (iii)It helps to reform the private sector through the allocation of roles, incentives, and accountability.

The use of PPP has several benefits including the following (HM Treasury, 1997).

- I. Efficiency.
- II. Whole Asset Life Solution.
- III. Transparency and Anticorruption.
- IV. Facilitate creative and innovative approaches.
- V. Source of Financing and reduced project cost.
- VI. Access Technology, Skills and Experience.

2.3 Infrastructure Investment

It is estimated that the yearly demand for infrastructure such as roads, railways, ports, water, telecommunications etc. in the United States exceeds \$ 1 billion. This figure include about

250,000 US \$ million on new infrastructures and rehabilitation. The World Bank also reports that in the area of power and telecommunications, the private sector has increased almost tenfold between 1990 and 1996. Despite this the private sector's capital inflow in this area provides less than 15% of the estimated demand. For the investment flows in the transport sector of developing countries, 75% come from development agencies, whilst the remaining 25% come from private sources. The case in developed countries is not different. The private sector is often concentrated in food and telecommunications, and to a lesser extent, in the subsectors of air transport, port and railway. That notwithstanding, the urban and transport infrastructures continues to benefit from some private partners (PPIAF, 2009).

2.4 PPPS for Road and Highway Projects

The road infrastructure is very important in the improvement of living standards. The lack of an adequate road network prevents access of the population especially the poor to social services and economic opportunities, weakens sectors of regional integration and reducing the competitiveness of the products of a country. In most countries, road networks are one of the largest public goods and especially (European Federation for Transport 2002), owned by the government. An effective system is important for economic growth, since the transportation cost is a substantial portion of the cost structure of the goods or services produced or imported a country. The truck cost is increased mainly by the costs of construction and maintenance of roads and vehicle operating costs, as the road deteriorates (World Bank Road Safety Fund, 2008) affected.

Financing for the construction and management of transport projects is a growing problem, as resources such as Ghana Road Fund have been exhausted. The traditional approach for the development and maintenance of roads and highways in Ghana is usually a public effort, in which to pay the government through its agencies for works done with her capital raised

through the designated government debt by revenue payable from taxes or charges. Once funding is secured, the public body design of the project or contract a private company to do the design. Separate legal entity or individual entrepreneur is selected resources for the implementation of the project usually after the Public Procurement Act 663 or the regulations of the agency. The government agency manages the operations and maintenance of the roads longer term, although such a public body can turn into a contract with a private company to carry out some of these tasks. The contractor must therefore handle only a limited amount of risk. The role and the risks transferred to the private companies are higher.

PPP is a particularly useful tool for transport projects, and many PPP used the worldwide for the development and maintenance of highways. Transport projects, including airports, roads, railways, trams, buses, tunnels and bridges, which traditionally financed through a combination of public and private funds. The transport sector is characterized by two basic limitations which are demand forecasting and land. The demand for transport infrastructure is affected by competition between modes of transport, demographic changes, economic conditions, the cost of services for the user information, individual preferences, speed of execution and a number of other often interdependent factors, difficult to provide exact predictions. The need for access to large amounts of land and room to build transport facilities makes them very expensive, long- term and politically sensitive undertakings (Delmon, 2011).

2.4.1 Benefits of Developing Road Infrastructure through PPPS.

(a) Access to Funding;

Private financing makes the issue of funding limitations a less problem. Through the injection of capital by a private party, highway projects are completed in time.

(b)Faster and Less Expensive Project Implementation;

Private partners in a PPP mostly bid for a highway project with a fixed fee there are usually little or no negotiations on the financial terms which saves time. Also the private sector decision-making processes have proven to be less bureaucratic than public sector counterparts (Perlman and Pulidindi, 2012).

(c)Economic Development and Investment Opportunities;

Developing and maintaining a good trunk road network opens up areas for development. This is mostly accompanied by development of houses and businesses while linking neighbouring countries (National Council for Public Private Partnerships).

(d)Access to Private Sector Expertise;

PPPs bring on board a specialized management capacity from the private sector for highway projects through a careful selection of the qualified partners.

2.5 General Challenges to PPPS.

- *Legal framework.* Ideally a set of laws on the use of PPP must be in place but most countries do not have an established legal frame work. The interests of the private partner too should be safeguarded by law. Government agencies also have to facilitate private sector participation in infrastructure projects or public services. Government Procurement restrictions may affect the application of pesticides (Grimsey and Lewis, 2002b).
- *Finance.* Despite the different techniques available to reduce risk, high risk perception attached to finance in certain regions overcome difficult project, and frightens private banks on loans to the region.

Risk consists of several components (eg, politics, trade, prices, etc.), some of the international financial institutions and others "and to pay" rules of the object (von Hirschhausen, 2002).

- *Taxation.* In any arrangements between public and the private sector, a very good taxation system is required. The complex nature of PPPs may bring forth an unhelpful tax system which can affect the project. A good taxation system should be clear on the aspects of the arrangement that are taxable or not. Most taxation may be ill-equipped to handle PPPs (Grimsey and Lewis, 2002b) .
- *Accounting.* Developing an effective accounting system for PPPs has always been complicated and controversial (Grimsey and Lewis, 2002b). The problem is always which of the partners' books should the assets acquired for the project be recorded.
- *Public acceptance.* A broad stakeholder involvement is very critical in any involvement of the private sector to provide infrastructure especially for implementing project finance projects which are usually paid back through user charges (von Hirschhausen, 2002).
- *Public administration.* Appropriate capacity building in the public sector is necessary for a successful PPP delivery. The public sector should be trained to broaden their knowledge and skills on how plan and manage successful PPP projects. Lack of adequate professionals and administrative competence is a challenge to PPPs (von Hirschhausen, 2002).
- *Private Partner Bankruptcy.* There is a small possibility of the private partner going bankrupt. This may be as a result of lack of a proper initial planning and selection of qualified partners. The selection process should therefore be effective (Perlman and Pulidindi, 2012).

2.6 Public Private Partnership Policy in Ghana.

Road is a fundamental requirement for economic growth and social development. Moreover, the social and municipal infrastructure, including education, health services and environmental infrastructure are necessary to the society.

However, budgetary constraints faced by countries led to the discovery of new strategies for the acquisition and financing of physical infrastructure and public service delivery. The Government is initiating a mix of legal reforms, funding mechanisms and institutional support to private sector involvement in the acquisition of physical infrastructure and provision of public services, strengthening public-private partnership (PPP). The government on 3 June 2011 approved the national policy on PPP to establish the formal framework for proper and standardised execution of PPP in Ghana (MoFEP 2011). A law was enacted to establish the legal framework in the context of national PPP policy.

The Government of Ghana (GOG) has agreed to establish a fiscal framework, clear and transparent legal and administrative barriers and the elimination to the PPP agreement. In 2004, the policy guide for PPP was developed but not effectively used. Strengthening the current regulatory framework and policy guidance 2004 is pertinent (MoFEP 2011). In Ghana, successive governments, at least since 2000, have admitted that role "the private sector" is key in their efforts to develop the country. In the Kufuor administration a ministry was established for the development of the private sector to partner government for national development especially in the area of physical infrastructure.

The Atta Mills administration, the initiative was also held and led to the introduction of another country strategy paper by the then Minister of Finance and Economic Planning, Dr. Kwabena Duffuor. The aim of this study was to define a clearly all aspects of from inception to

completion a of PPP project. The Ministry of Finance and Economic Planning (MoFEP) and the Public Procurement Authority play an important role in the institutional arrangements for the PPP. Other agencies include the National Development Planning Commission Council (NDPC), the Government contracting authorities - Ministries, Departments and Agencies (MDA) and Metropolitan, Municipal and District Assemblies (MMDA), the stakeholders, Contracting Authority (PPA), Cabinet, Parliament, PPP Approval Committee, Ministry of Justice and Attorney General etc (MoFEP 2011).

2.7 Some Road Projects Identified for Possible PPPs In Ghana.

Accra-Takoradi highway expansion to a 3-lane of dual carriage highway; Accra-Tema motorway expansion into a dual carriage of 3 or 4 lanes; Accra-Kumasi road in a 2 or 3-lane highway (MOFEP, 2013). Road transport is an integral part of development of a nation. In Ghana, road transport accounts for 94% of freight and 97% of all movements of traffic. In growing countries such as India, we have seen that there is a positive correlation between investment in road transport and growth and poverty reduce.

In Ghana, finished and maintained roads have led to a 20% increase in visits to hospitals, a significant reduction in travel costs from market centres and the efficient delivery of agricultural products to urban centres by farmers, which gives them the financial power and reduces feed costs. The government of Ghana has undertaken to ensure that transport is used as a means of achieving the objectives established under the Strategy for Growth and Poverty Reduction (GPRS II) and achieving the Millennium Goals development and implementation average income status in 2015 (Savarino Company, 2005).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter explains the research method used in this study. It addresses also the research strategy, design and process. It also described the population of the study, the technique used in sampling, sample size, collection of data and analysis.

3.2 The Study Area

The study covered the Ministry of Roads and Highway and its agencies in the Greater Accra region of Ghana. The Ghana Highway Authority (Head office), Department of Urban Roads (Head office) and the Department of Feeder Roads (Head office) were covered too. The study also included A1 B1 category of road contractors and consultants in Accra.

3.3 The Research Strategy

Research design is a tool that is used by the researcher to obtain evidence that clearly answers research questions of the study (De Vaus, 2001). The quantitative research approach was used to obtain answers to the research questions in this study. It was important to obtain relevant data to determine the key challenges of the use of PPP in highway projects. The survey research style with a structured questionnaire was adopted and respondents who are familiar with the subject matter were contacted. The purpose was to increase the chances of achieving the research objectives.

3.4 Population

The population of the study consisted of all Public-Private partnership professionals who work with the Ministry of Roads and Highway and its agencies. Other staffs who have worked on PPP projects were also part including consultants and private contractors. A population of sixteen (16) professionals was obtained which included five (5) from Ghana

Highway Authority, three (3) from the Ministry of Roads and Highways, two (2) from the Department of Feeder Roads, two (2) from Department of Urban Roads, two (2) from consulting firms and two (2) from contractors.

3.5 Sampling Technique and Sample Size

According to Polit and Hungler (1999), sampling is a process of selecting a portion of the population to represent the entire population. The snowball approach was used to collate the population of the study by visiting the Department of Urban Roads, Department of Feeder Roads and Ghana Highway Authority. These agencies are mandated to implement and manage road infrastructure projects in Ghana. Snowball sampling is an approach for locating information-rich key informants. With this approach, respondents are contacted and asked how to locate their colleagues with the characteristics that you are looking for in your research (Fugar, 2010). The key people who manage project and are familiar with PPP concept were first contacted. This led to the identification of other practitioners with the similar experience and hence a sample size of sixteen (16) was obtained within the limited time.

Due to the limited number of PPP professionals accompanied by the lack of significant experience in PPP projects in the road and highway sector, the researcher used a census to determine the sample size of sixteen (16). This was also to eliminate sampling error and

provide data on all the individuals in the population. The study purposely targeted at professionals with knowledge and experience on PPPs in highway projects.

3.6 Data Collection Methods

The researcher gathered relevant information for the study from primary data and then secondary data.

3.6.1 Primary Data

The main method for the collection of this data was through questionnaires. The questionnaire focused on the objectives of the study in order to achieve the aim of the study. The data was collected from selected respondents of the sample frame in the population of the research.

3.6.2 Secondary Data

The researcher referred to a number of publications including local and international which included books, journals, articles, newspapers, reports from relevant sources on the subject. This enabled the researcher to get other materials that helped to answer the research questions.

3.6.3 Questionnaire Design

The questionnaire designed for this study was to put together data from the Ministry of Roads and Highway and its agencies and some private sector partners. The questions asked were largely closed-ended and with some optional responses provided. The questions were grouped into three categories.

Where applicable, the four-point likert scale was adopted. The questionnaire was organized into three sections: Section A, general and background information of the respondent, Section B, factors that militate against the successful delivery of highway PPP projects and in section C, the need and strategies for successful PPP in the road and highway sector of Ghana.

The strategy adopted for the questionnaire design was to first conduct a literature review which was relevant to the study with much emphasis on the objectives of the research. The questionnaire was designed to consider the educational background of respondents. The information provided by respondents was kept confidential. Appropriate instructions, guides and keys were provided to make it easy for the respondents to fill.

The questionnaire was made up of closed-ended questions and also provided options for respondents to choose, ranked and react to issues that were investigated. The questions generally addressed issues on the challenges of the use of PPP in the Road and Highway sector of Ghana and strategies to improve successful delivery of PPPs the sector. There were fifteen (15) questions which included tables to profile the variables to make it easy for respondents to answer.

3.6.4 Questionnaire Administration

The questionnaire was self-administered using the snow ball approach to the targeted respondents willing to provide information the questionnaires required. The completed questionnaires were collated by the researcher upon follow ups. The primary data collected was reviewed by the researcher to ensure maximum accuracy, legibility, completeness, consistency and to reduce ambiguity. In all sixteen (16) questionnaires were administered and 9 of them representing 56.3% response rate were retrieved. Three (3) respondents from the Ghana Highway Authority, two (2) respondents from the Ministry of Roads and Highways, one (1) respondent from the Department of Urban Roads, one (1) respondent from the Department of Feeder Roads, one(1) respondent from consulting firm and one (1) respondent from a private contractor.

3.7 Data Analysis

The units for the data collection were the individual personnel in the agencies. The individual responses were aggregated to give larger units for analysis. The technique used for the analysis of the data was Statistical Packages for Social Sciences (SPSS Version 16). The Relative Importance Index (RII) technique was used to rank the challenges.

With questions six (6) and nine (9) on the questionnaire, the relative Important Index (RII) was used to rank the identified challenges in order to identify the key challenges.



CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study and also includes discussions of the key findings.

4.2. Demographic characteristics of the respondent.

The first part of the questionnaire sought to draw information on the demographic characteristics of the respondents such as their profession, years of working experience, their educational level just to mention a few. This section was considered necessary as it proves the credibility of the respondents selected for the study. From Fig 4.1, 33.33% of the respondents work with the Ghana Highways Authority, 22.22% with the Ministry of roads and Highways and 11.11% with the Department of feeder roads. 11.11% of the respondents worked with consulting firms and 11.11% worked with private contractors. 55.56% work in the capacity as quantity surveyors, whilst 22.22% were architects and civil engineers constituted 22.22% of the total respondents. It must be emphasized again that the scope of the current study is on the use of PPP for executing projects at the road sector. This means that, the people who were selected for the study belong to the right profession and industry.

In addition to the above, a majority of the respondents (66.66%) have over 11 years of working experience (see Fig 4.2). 44.44% hold Bachelor's degree while those with master's degree were 33.33%. The above statistics revealed that the respondents have the requisite professional background, education and experience to provide credible information to aid the study.

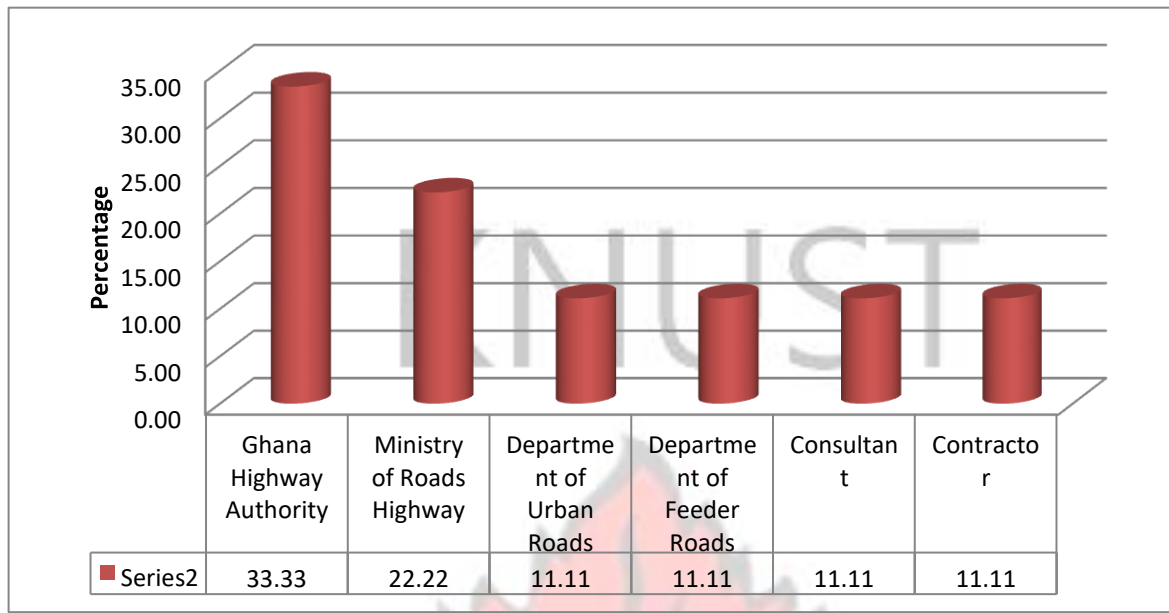


Fig 4.1: Type of agencies respondents work with

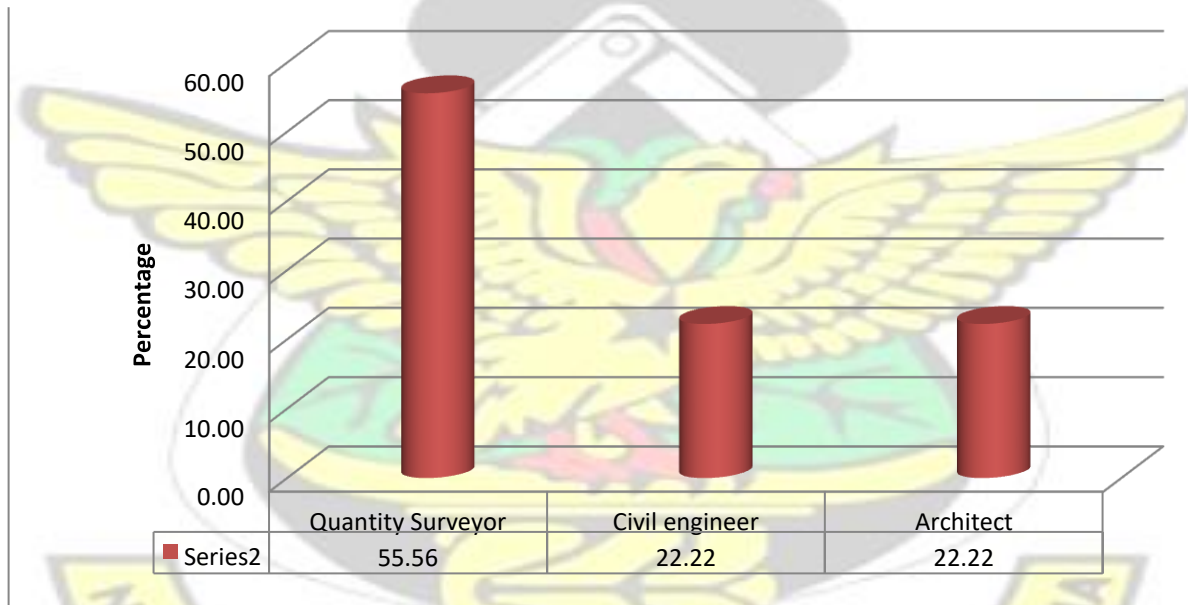


Fig 4.2: Profession of respondents

Source: Researcher's field survey, 2015

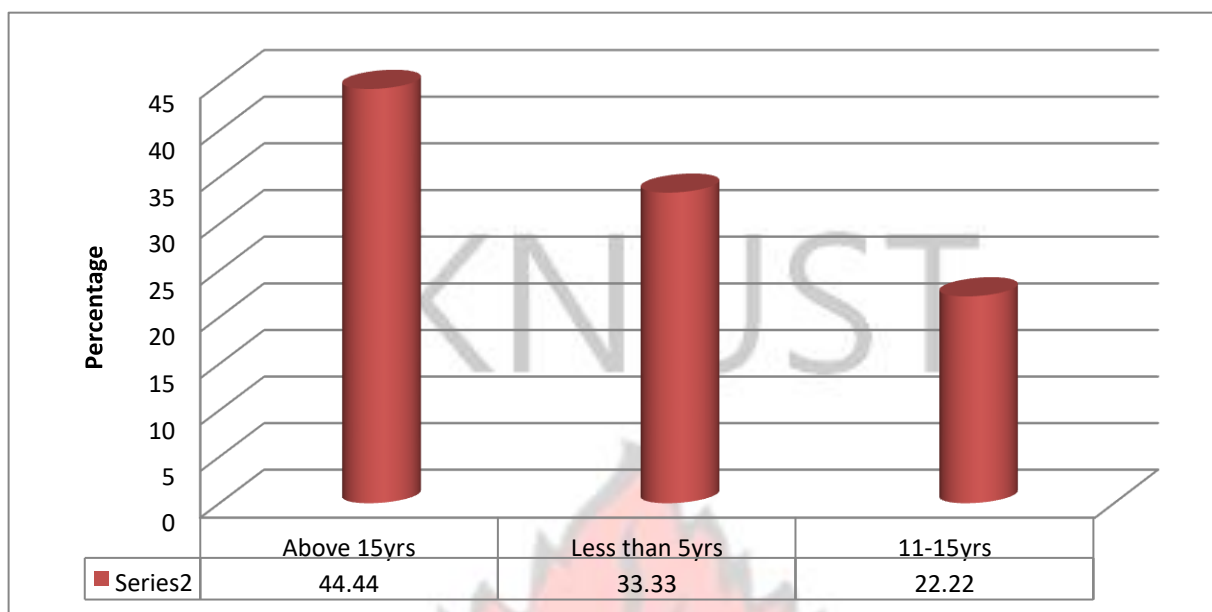


Fig 4.3: Years' experience of respondents

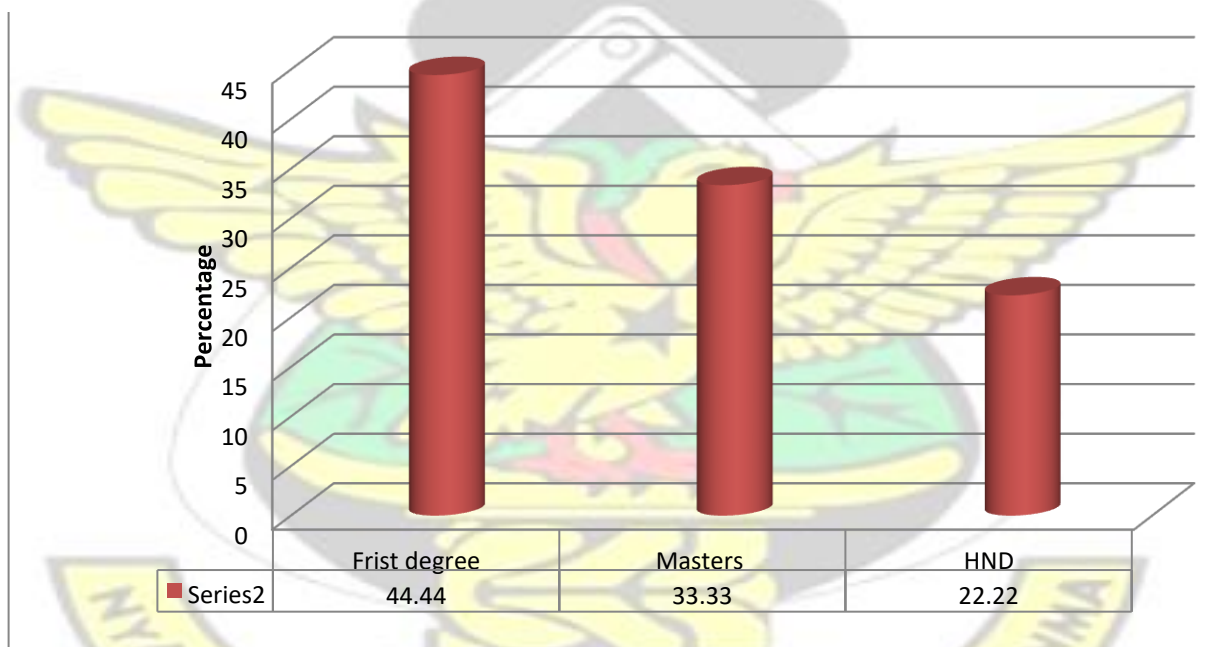


Fig 4.4: Highest educational qualification of respondents

Source: Researcher's field survey, 2015.

4.3 The use of PPP for executing projects at the road sector

The study among its objectives sought to find out the extent of utilization of Public Private Partnership for executing projects within the road sector of Ghana. From Fig 4.5, 88.88% of the respondents indicated that the number of projects they have executed using PPA does not exceed 5. This means, the use of PPA in the road sector is very low and this can be attributed to some challenges the sector is probably facing.

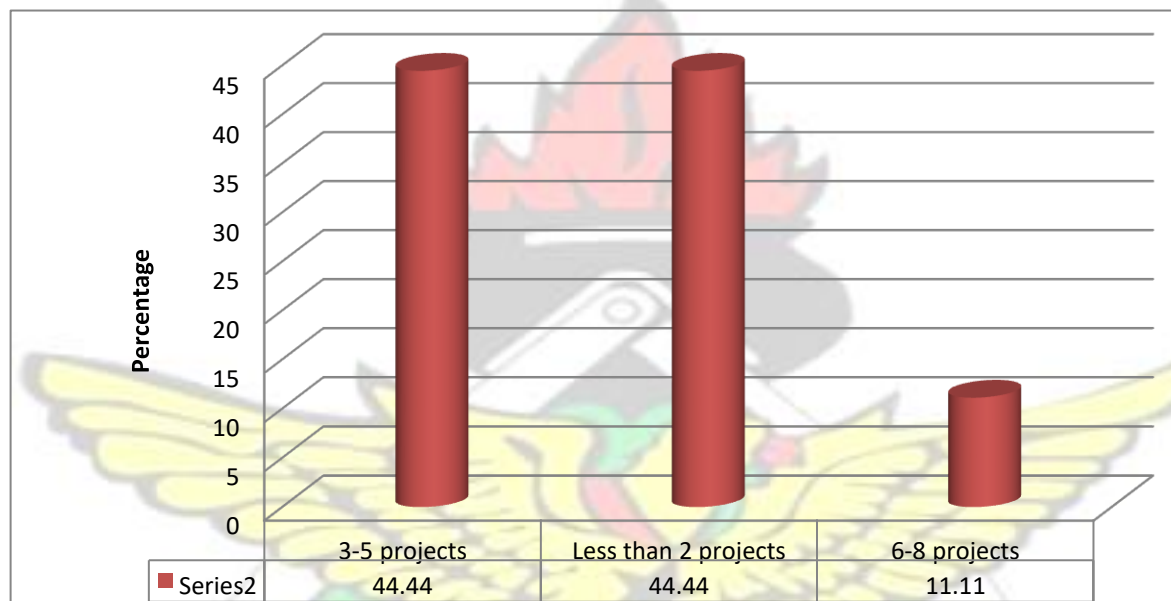


Fig 4.5: Projects executed using PPP

Prior to soliciting the views of the respondents on the challenges they face in using PPP, they were asked if the sector derives any benefit from using the method. Their responses were analysed using Relative Importance Index, to establish the most significant benefits the sector derives from PPA. Per the results shown on Table 4.1, the respondents unanimously agreed that all the factors identified from literature are key benefits the sector derives from using PPA. As noted by Gassner et al (2007) the private sector is often considered to provide greater levels of efficiency than the public sector. This means that when the two sectors come together to execute and management a project, they can put their expertise together to achieve optimum

benefit. Moreover, PPA helps to access funds to execute projects. This is achieved through the pool of resources provided by each party. The factors above lead to faster and less expensive project implementation. Thus the results of the current study concur with that of Gassner *et al* (2007); Alfen *et al* (2009) and Birnie (1999).

Table 4.1: Benefits derived by Highways for PPA projects

	BENEFITS	RATING					Total	ΣW	Mean	RII	Rank
		1	2	3	4	5					
(i)	Access private sector expertise	0	0	1	5	3	9	38	4.2222	0.8444	1st
(ii)	Access to funding	0	1	2	3	3	9	35	3.8889	0.7778	2nd
(iii)	Life cycle cost of the project a for a long term is known.	0	1	4	2	2	9	32	3.5556	0.7111	3rd
(iv)	Faster and less expensive project implementation	0	2	2	4	1	9	31	3.4444	0.6889	4th
(v)	Economic development and investment opportunity	0	0	5	4	0	9	31	3.4444	0.6889	5th
(vi)	Value for money	1	1	2	3	1	8	26	3.2500	0.5778	6th

Source: Researcher's field survey, 2015

4.4: Challenges in using PPP for project execution in the road sector

Having established proof that the used of PPP in the road sector is very low, the study went on the find out the challenges that affects the use of PPP. Eleven (11) possible challenges were identified from literature for which the respondents were asked a “yes” or “no” question as to whether the factors are challenges affecting the use of PPA in the road sector.

From Table 4.2, majority of the respondents answered in the affirmative that all the factors presented are challenges affecting the use of PPP. In each case, at least 77% answered “yes”. To gain further insight into the issues, the respondents were asked to rank the challenges in the order of significance. The results are shown on Table 4.3.

Table 4.2: Challenges associated with the successful delivery of PPP projects

		Yes		No		Total	
	CHALLENGES	Frequency	%	Frequency	%	Frequency	%
(i)	Lack of regulatory and legal framework	8	88.889	1	11.11	9	100
(ii)	Lack of financial viable highway project for project financing	7	77.778	2	22.222	9	100
(iii)	PPP arrangement are new in Ghana and lack enough experience	7	77.778	2	22.222	9	100
(iv)	Risk of private partner bankruptcy	8	88.889	1	11.111	9	100
(v)	Existing tax system ill-equipped to deal with PPPs	8	88.889	1	11.111	9	100
(vi)	Lack of appropriate accounting treatment for project PPPs	8	88.889	1	11.111	9	100
(vii)	Lack of public acceptance for especially project finance models based on user charges	8	88.889	1	11.111	9	100
(viii)	Lack of government interest as a result of change in government or political instability	7	77.778	2	22.222	9	100
(ix)	Lack of experience and skills in the public sector to manage PPPs	6	66.667	3	33.333	9	100

Source: Researcher's field survey, 2015

From Table 4.3, the five topmost challenge to PPP in the road sector are: Lack of regulatory and legal framework (1st); Lack of financial viable highway project for project financing (2nd) Risk of private partner bankruptcy (3rd); Lack of government interest as a result of change in government or political instability (4th) and Existing tax system ill-equipped to deal with PPPs. The challenges can be explained as follows:

(i) Lack of regulatory and legal framework

PPPs general consist of numerous arrangements between all or some the parties; hence there is the need to back the terms of the agreements by law. The interests of all the parties involved should be protected by law. Moreover, Government agencies must also facilitate private sector participation in infrastructure projects or public services. Thus where there is no such regulatory and legal frameworks, PPP will not survive. In the current study the respondent identified the above issue as the topmost challenge to the use of PPA for road project deliveries.

(ii) Project financing

The respondents explained that, financing of projects usually becomes a problem in the use of PPA. They indicated that it is usually difficult to secure loans to undertake such projects. Moreover, as noted by the American Chamber of Commerce (2002), Private Banks are often reluctant to give up loans because of the general legal and regulatory weaknesses that characterize some emerging economies.

(iii) Risk of private partner bankruptcy

There is a possibility of the private partner going bankrupt which may be the result of lack of a proper initial planning and selection of qualified partners. This becomes a serious threat to

the project especially if the private partner's role as part of the arrangement is to provide funds for execution of the project. The selection process should therefore be effective.

- (iv) Lack of government interest as a result of change in government or political instability

A change in government usually brings about changes in policies. Where the new government lacks interest in a given PPP, project, it does not succeed. This consequently put fears in the minds of most private partners. Similar finding was observed by Hirschhausen (2002).

- (v) Existing tax system ill-equipped to deal with PPPs

As noted from literature (Hirschhausen, 2002), in any arrangements between public and the private sector, a very good taxation system is required. The complex nature of PPPs may bring forth an unhelpful tax system which can affect the project. A good taxation system should be clear on the aspects of the arrangement that are taxable or not. Most taxation may be ill-equipped to handle PPPs. The existing taxation system if not properly developed can affect PPP dealings.

Table 4.3: Ranking of the challenges associated with the use of PPP for road projects

delivery

S/n	Challenges	1	2	3	Total	ΣW	Mean	RII	Rank
(i)	Lack of regulatory and legal framework	1	3	5	9	22	2.4444	0.8148	1st
(ii)	Lack of financial viable highway project for project financing	0	5	4	9	22	2.4444	0.8148	2 nd
(iii)	Risk of private partner bankruptcy	1	3	5	9	22	2.4444	0.8148	3 rd
(iv)	Lack of government interest as a result of change in government or political instability	0	6	3	9	21	2.3333	0.7778	4 th
(v)	Existing tax system ill-equipped to deal with PPPs	1	5	3	9	20	2.2222	0.7407	5 th
(vi)	Lack of experience and skills in the public sector to manage PPPs	2	4	3	9	19	2.1111	0.7037	6 th
(vii)	PPP arrangement are new in Ghana and lack enough experience	1	7	1	9	18	2.0000	0.6667	7 th
(viii)	Lack of public acceptance for especially project finance models based on user charges	2	5	2	9	18	2.0000	0.6667	8 th
(ix)	Lack of appropriate accounting treatment for project PPPs	3	5	1	9	16	1.7778	0.5926	9 th

Source: Researcher's field survey, 2015

4.5 Need and Strategies for Successful Public – Private Partnership in Road and Highway Sector

The questionnaire also sought opinions on the strategies that can be adopted to ensure the successful execution of a highway project through PPP. From the results shown on Table 4.4, the respondents unanimously agreed that all the factors shown on the Table can be used as strategies to ensure the success of PPP. In the first place, the respondents were of the opinion that the private sector partner to PPA should be carefully selected. The party should possess the required expertise and resources relevant to the project. This will help remove any inefficiency, disputes etc. which usually results the parties cannot coexist.

Moreover, prior to the commencement of every project, comprehensive feasibility should be conducted to assess the viability of the project without being optimism bias. Most PPA failure when the benefits the parties envisage to get from the project do not come to fruition.

Last but not least, there should be legal and regulatory frameworks to back PPPs. There should also be a proper balance on the funding for the project. These strategies together with the others identified in Table 4.4 will help ensure the success of PPA in the road and highway sector.

Table 4.4: Strategies for the successful implementation of Highway PPP Projects.

STRATEGIES FOR SUCCESSFUL PPPs	Yes		No		Total	
	Frequency	%	Frequency	%	Frequency	%
Careful selection of the private sector partners with the required expertise or resources.	9	100	0	0	9	100
Conduct a comprehensive feasibility study to assess the viability of the project without being optimism bias.	9	100	0	0	9	100
Effective stakeholder involvement to clarify the nature of the PPP in order to dispel misconceptions about PPPs and enhance transparency.	9	100	0	0	9	100
Development of a Government's legal and regulatory framework for PPPs.	9	100	0	0	9	100
Settle on a proper balance of public and private funding.	9	100	0	0	9	100

Source: Researcher's field survey, 2015

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Summary of Findings

The current study was designed to identify the key factors that militate against the successful implementation Public Private Partnership (PPP) as an option for the execution of projects by the Roads and Highway sector of Ghana. Based on the questionnaires administered to the various respondents and the subsequent analysis carried out, the following key findings and conclusions have been made in the light of the objectives of the study:

Objective i: To find out the extent of utilization of PPP for executing projects within the road and highway sectors of Ghana.

- (i) The study found that, even though PPP is been used a procurement option within the road and highway sector, the rate of utilization is very low. That is to say only few projects are executed using this method.

Objective ii: Identify the challenges in using PPP as a method of procurement within the Roads and Highway sector of Ghana.

- (i) Various challenges were identified by the respondents as being the challenge in the use of PPP with the road sector

- Lack of regulatory and legal framework to back PPP
- Lack of financial viable highway projects for project financing
- Risk of private partner bankruptcy
- Lack of government interest as a result of change in government or political instability
- Existing tax system ill-equipped to deal with PPPs
- Lack of experience and skills in the public sector to manage PPPs
- PPP arrangement are new in Ghana and lack enough experience
- Lack of public acceptance for especially project finance models based on user charges
- Lack of appropriate accounting treatment for project PPPs

Objective iii: Determine the key challenges in using PPP as a method of procurement within the Roads and Highway sector of Ghana.

The study identified these five (5) of the challenges listed in order of significance as the key challenges.

- Lack of regulatory and legal framework
- Lack of financial viable highway project for project financing
- Risk of private partner bankruptcy
- Lack of government interest as a result of change in government or political instability

Existing tax system ill-equipped to deal with PPPs

Objective iv: To proffer measures to address the key challenges to the use PPP in the Roads and Highway sector of Ghana.

- The private sector partner to PPP should be carefully selected. Public agencies should partner with private sector investors who have the requisite experience with partnerships especially in highway projects. The selected party should also have the required expertise and resources relevant to the project. This will help remove inefficiencies and eliminate disputes in the agreement.

Please see section 5.3.

5.2 Conclusion

The study found that PPP is being used in the roads and highway sector of Ghana though a few highway projects have been recorded in that regard. The key challenges to the use of PPP in the roads and highway sector of Ghana being the lack of legal and regulatory framework, lack of financial viable projects, risk of private partner bankruptcy, lack of government interest and ill-equipped tax system for PPPs.

The existence of a legal and framework is necessary to protect public interest, check abuses, enhance capacity and promote PPPs. The source of revenue for the project should be adequate and reliable. The public sector entity should carefully select the private partner and also inform all stakeholders to the highway projects about the nature of the PPPs to dispel misconceptions about PPPs.

5.3 Recommendations

Based on the finding of the study, the following recommendations have been made as strategies which will help address the challenges and improve the use of PPP within the road and highway sector:

- There should be a legal and regulatory framework to back PPPs in Ghana. PPPs take numerous forms and are complicated by their individual contracts. The PPP bill should be passed in to law to serve as the legal backing to the use PPP in Ghana. Also the public agencies should form units of professionals dedicated to PPPs from their inception through to completion and monitoring as practiced by the Ghana Highway Authority. This can increase transparency, accountability and performance.
- The private sector partner to PPP should be carefully selected. Public agencies should partner with private sector investors who have the requisite experience with partnerships especially in highway projects. The selected party should also have the required expertise and resources relevant to the project. This will help remove any inefficiencies and eliminate disputes in the agreement.
- Moreover, prior to the commencement of every project, comprehensive feasibility should be conducted to assess the viability of the project without being optimism bias. Most PPP

failure occurs when the benefits the parties envisage to get from the project do not come to fruition.

- Funding for PPP projects should be critically looked at. A thorough market analyses and cost projections can help the government properly balance public and private funding for projects. The sustainability and attractiveness of a PPP project largely depends on knowing the source of funding for the project and its reliability.
- Effectively communicate with stakeholders to clarify the nature of the PPP. Labourers, motorists, transit customers, GPRTU, state transports, investors and the public sector are all affected by highway projects. Well-known public figures could explain to all the stakeholders to be aware of what is happening for the sake of transparency and to dispel misconceptions about PPPs.

5.4 Suggestions for Further Studies

Further research is recommended especially in determining the appropriate mode of Public Private Partnerships for highway or transportation projects in Ghana.

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WAME NKRUMAH UNIVERSITY OF SCIENCE TECHNOLOGY

COLLEGE OF ARCHITECTURE AND PLANNING

DEPARTMENT OF BUILDING TECHNOLOGY, KUMASI

**“OVERCOMING THE KEY CHALLENGES TO PUBLIC PRIVATE
PARTNERSHIP AS MODE OF PROCURING PUBLIC INFRASTRUCTURE AND
SERVICE DELIVERY IN THE ROADS AND HIGHWAY SECTOR OF GHANA”**

INTRODUCTION

This questionnaire is to solicit your response to help the researcher to identify to key challenges to the use of PPPs in the road and highway sector of Ghana. This research is purely an academic work and your information given shall be kept confidential.

SECTION A- GENERAL AND BACKGROUND QUESTIONS

(Please tick (✓) the appropriate option)

1. Which of the following agencies do you work with?

Ghana Highway Authority ☒ Department of Urban Roads ☐ Department of Feeder

Roads ☐

Ministry of Roads Highway

Consultant ☐

Contractor ☐

Others please specify.....

2. How long have you been working?

Less than 5 years ☐ 6-10years ☐ 11-15 years ☒ Above 15 years ☐

3. What is your profession?

Civil ☐ Engineer ☐ Structural Engineer ☐ Quantity Surveyor ☒ Architect

Project Manager ☐

Contract Manager ☐

Others, specify

4. What is your highest level of education?

HND ☐ First Degree ☐ Masters ☐ PhD ☐ Other

SECTION B-FACTORS THAT MILITATE AGAINST SUCCESSFUL DELIVERY OF

HIGHWAY PPP PROJECT

5. How many PPP projects have you worked or is working on relating to the roads and highway in Ghana?

Less than 2 ☐

3-5

☐ 6-8 ☐

Above 9 ☐

6. Some PPP scholars hold the view that the following are the general benefits of successful PPPs. To what extent does the PPP model for highway projects meet the following expected benefits in your opinion?

Key: 1=Very Low 2= Low
High

3=Moderate 4=High

5=Very

Please tick (✓) appropriate box

Expected Benefits	1	2	3	4	5
Access to funding					
Life cycle cost to deliver , operate and maintain highway over a long term					
Faster and less expensive project implementation					
Economic development and investment opportunity					
Access private sector expertise					
Value for money					

7. The following listed below have been established as challenges to successful delivery of PPPs by countries with sufficient experience. Which of the following are peculiar challenges to successful delivery of PPP projects in the road and highway sector of Ghana?

Key; 1=Yes 2= No

Please tick (√) appropriate box

Challenge	1	2
i. Lack of regulatory and legal framework		
ii. Lack of financial viable highway project for project financing		
iii. PPP arrangement are new in Ghana and lack enough experience		
iv. Risk of private partner bankruptcy		
v. Existing tax system ill-equipped to deal with PPPs		
vi. Lack of appropriate accounting treatment for project PPPs		
vii. Lack of public acceptance for especially project finance models based on user charges		
viii. Lack of government interest as a result of change in government or political instability		
ix. Lack of public administrative competence in development and control of PPPs		

8. Please state any other challenges to the successful delivery of PPPs in the road and highway sector of Ghana that have not been identified above.

(a).....

(b)

(c)

9. What are the impacts or how significant are the challenges to road and highway PPP projects in Ghana? Key; **1= High 2= Moderate 3 = Low** Please tick (√) appropriate box.

Challenge	1	2	3
i. Lack of regulatory and legal framework			
ii. Lack of financial viable highway project for project financing			
iii. PPP arrangement are new in Ghana and lack enough experience			
iv. Risk of private partner bankruptcy			
v. Existing tax system ill-equipped to deal with PPPs			
vi. Lack of appropriate accounting treatment for project PPPs			
vii. Lack of public acceptance for especially project finance models based on user charges			
viii. Lack of government interest as a result of change in government or political instability			
ix. Lack of public administrative competence in development and control of PPPs			

SECTION C- NEED AND STRATEGIES FOR SUCCESSFUL PUBLIC –PRIVATE PARTNERSHIP IN ROAD AND HIGHWAY SECTOR

10. Do you consider the public-private partnership model as viable option for the roads and highway sector?

Not at all ☐ Slightly ☐ Moderately ☐ Very ☐

11. Do you consider that your agency possesses the capabilities to handle public-private partnership projects?

Not at all ☐ Slightly ☐ Moderately ☐ Very ☐

12. Do you consider the public-private partnership model to be effectively used in the roads and highway sector of Ghana?

Not at all ☐ Slightly ☐ Moderate ☐ Very ☐

13. What level of improvement does the public-private partnerships in roads and highway sector of Ghana require?

☐ ☐ ☐ ☐

No Modification Slight Modification Moderate Modification Significant Review

14. The following listed below have been identified by other countries with experience in PPPs as strategies for successful delivery of PPPs. Which of these strategies are applicable in the road and highway sector of Ghana?

Key; 1=Yes 2= No

Please tick (√) appropriate box.

Strategies For Successful Implementation of Highway PPP Projects.	1	2
I. Careful selection of the private sector partners with the required expertise or resources.		
II. Conduct a comprehensive feasibility study to assess the viability of the project without being optimism bias.		
III. Effective stakeholder involvement to clarify the nature of the PPP in order to dispel misconceptions about PPPs and enhance transparency.		
IV. Development of a Government's legal and regulatory framework for PPPs.		
V. Settle on a proper balance of public and private funding.		

15. Please state any other strategies for the successful delivery of PPPs in the road and highway sector of Ghana in your opinion.

(a).....

(b)

(c)

(d).....

Thank You.