

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI**

COLLEGE OF ARCHITECTURE AND PLANNING

DEPARTMENT OF BUILDING TECHNOLOGY

TOPIC

**EXPLORING THE CHALLENGES AND STRUCTURAL CHANGES FOR
EFFECTIVE IMPLEMENTATION OF PPP IN THE ROAD SECTOR**

KNUST

BY

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A dissertation submitted to the Department of Building Technology in partial
fulfillment of the requirement for the Degree of Master of Science (MSc) in
PROCUREMENT MANAGEMENT

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DECLARATION

I hereby declare that this submission is my own work towards the award of an MSc 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 this University or other, except where due acknowledgement has been made in the text.

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DEDICATION

Giving reverence to the Almighty God for his abundant grace and mercy, I dedicate this work to my wife and my children Nana and Ewura for their incessant prayer, selfless and restless contribution, moral support and encouragement to the success of my education.

Worthy of mention here also, are all my lecturers who taught me in KNUST and fellow course mates whose contribution in resulted in the successful completion of this project.



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ABSTRACT

Ghana's capacity to fund its infrastructural projects was seriously challenged in the early 1980s when the economy was hit by severe crisis, which resulted in the adoption of the International Money Fund (IMF) and the World Bank inspired Structural Adjustment Program (SAP). The way forward the Ghanaian government could partner the Private Sector in the provision of infrastructure and service such as roads, water, housing etc. has been discussed on national platforms across the country. The current global economic recession in addition to Ghana's declining revenue base, makes sources of alternative means of funding road infrastructure very challenging. Public Private Partnership (PPP) presents a viable solution to the challenge posed by global financial crisis. The dilemma in adopting the PPP approach by road agencies and departments begins with a number of challenges which needs to be explored. The aim of the study was to explore the challenges of Public Private Partnership (PPP) model of procurement for road infrastructure in Ghana. The specific objectives included; to identify the key challenges that affect the implementation of PPPs in the procurement of road infrastructure in Ghana and to identify the structural changes required to improve the success rate of PPPs. The study made use of questionnaires as means of gathering useful data for the study. Developed questionnaires were administered through the use of snowball technique of sampling to collect data from the respondents. Statistical Package for Social Science (SPSS) version 16 was used to perform descriptive analysis whiles Relative Importance Index (RII) was used to rank the identified factors to determine the most pressing issues in order of importance. Analysis from the study identified these challenges to the usage of PPP models: Demand Risk (if traffic volumes do not turn out as expected); Design risk (improperly thought through output specifications); Construction risk (delays, contingencies);

Legal risk (land acquisition issue); and Limited level of knowledge of PPP among Government institutions. In addition, the study revealed that some changes required to improve the success rate of PPPs are that: all contracting entities should ensure that the need to attain maximum Value for money is made paramount; every PPP arrangement should have a clear table or metrics showing the allocation of risk to the party best able to manage the risk; every contracting entity seeking to undertake PPP project should specify the expected output of each project; and also contracting entities should consider end-user affordability as one of the key considerations in making decisions related to the feasibility of PPP projects. It is therefore recommended that education and publicity is needed to increase the awareness of PPP model of procurement for road infrastructure.



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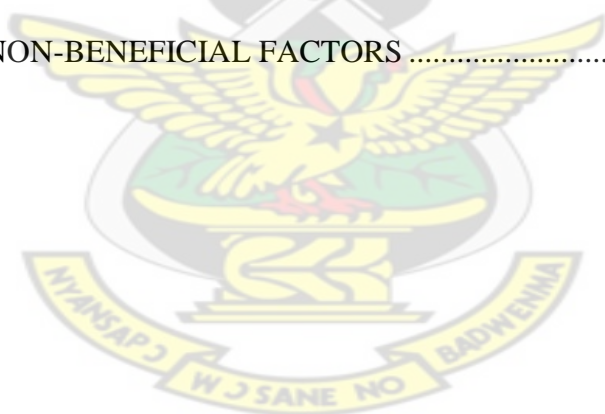
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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

For much of post world war II, the majority of governments both in the developed and developing countries entrusted the delivery of public infrastructure and services such as road, transport, telecommunication, energy, water, sanitation, health, education, policing, and defense to state owned monopolies or other public sector/government departments (Grimsey, 2002). In several countries, the situation was (and for quite a number, still is) that government builds or purchases a physical asset, retains ownership, uses public sector employees or a private contractor to deliver the required service through the traditional mode of procuring public infrastructure and service (Grout, 2003). PPP is a contractual arrangement between a public entity and private sector party, with clear arrangement on shared objectives for the provision of public infrastructure and service traditionally provided by the public sector (Government of Ghana, 2011). The World Bank has recognized the private sector funding of public projects as a way of solving the increasing demand for services. This is particularly relevant to developing countries because new infrastructure is vital in their bid to alleviate poverty and infant mortality (Bennett, 1999).

The Government of Ghana is currently facing monumental challenges in road infrastructure development and public service delivery which constrain the growth of the Ghanaian economy. The provision of public infrastructure development and services has typically been viewed as the responsibility of the Government (Duffuor, 2011). In an attempt to address these challenges, the Government of Ghana is considering Build, Operate and Transfer (BOT) and the Maintain, Operate and

Transfer (MOT) concept of Public Private Partnership (PPP) arrangements for the maintenance of roads in Ghana. Government is exploring new avenues to improve the maintenance of roads because the Ghana Road Fund could currently sustain only 40 per cent of the road maintenance needs in Ghana. The 60 per cent of road network maintenance had been left unattended to and government would have to look for funding from donor partners to fix them, the Ministry of Roads and Highways announced (GNA, 2014). However, the practice of always soliciting funding from donor partners should not be allowed to continue, hence, the need for effort and measures to explore new avenues to build more roads for effective road network in Ghana. PPP has been applied to number of road infrastructure projects in Ghana and this study would explore the challenges of PPP model of procurement for road infrastructure in Ghana.

1.2 STATEMENT OF PROBLEM

For most of Ghana's post-colonial history, the state has been the main financier of infrastructure project. The country's capacity to fund its infrastructural projects was seriously challenged in the early 1980s when the economy was hit by severe crisis, which resulted in the adoption of the International Money Fund (IMF) and world Bank-inspired Structural Adjustment Program (SAP) (Ghana Business Media, 2011). The current global economic recession in addition to Ghana's declining revenue base, makes sources of alternative means of funding road infrastructure very challenging. Public Private Partnership (PPP) presents a viable solution to the challenge posed by global financial crisis.

An alternative lifeline for the government in the face of its depleting resource and business opportunities for private sector to involve in the provision of social services

must be explored. Despite the benefits expected from PPP after introduction of the National Policy, there has never been a single road project in Ghana completed through PPP model. Government is exploring new avenues to improve the maintenance of roads because the Ghana Road Fund could currently sustain only 40% of the road network (GNA, 2014). The dilemma in adopting the PPP approach by road agencies and departments begins with a number of challenges which needs to be explored and it is in this respect that the study was conducted.

1.3 AIM OF STUDY

The main aim of the study was to explore the challenges of successful Public Private Partnership model of procurement for road infrastructure in Ghana.

1.4 OBJECTIVES

In achieving the aim of the study, the following objectives were developed;

- To identify the key challenges that affects the implementation of PPPs in the procurement of roads infrastructure in Ghana; and
- To identify structural changes required to improve the success rate of PPPs in Ghana.

1.5 SCOPE OF THE STUDY

Geographically, the scope of this study was limited to the Accra and Kumasi metropolis. The targeted respondents for the study were from the Ministry of Roads and Highways and its agencies like Department of Urban Roads, Department of Feeder Roads and Ghana Highway Authority. The study involved the Contract Managers, Project Managers, Civil Engineers and Quantity Surveyors of these three agencies in

addition to A1 B1 category of road contractors. However, it is hoped that the data obtained from the study gave a true reflection of the assessment of challenges of PPP model of procurement for road infrastructure in Ghana. The road sector was chosen because of huge demand of investment needed to improve the road network which could not be provided by the government due to the current global economic recession in addition to Ghana's declining revenue base, makes sources of alternative means of funding infrastructure very challenging.

1.6 RESEARCH METHODOLOGY

The methodology adopted in conducting this research consisted of a critical review of relevant literature on constraints and opportunities of Public-private Partnership model of procurement for road infrastructure. This helped in the identification of the previous work done, its application, the limitations and the criticisms. Data from the field was collected by the administration of questionnaires. In designing the questionnaires, attempt was made to ask relevant questions which were devoid of ambiguities which made it easy for analytical inference and conclusion to the study to be made. The data collected were analyzed using Descriptive Statistics and Relative Importance Index (RII). Regular follow ups were made after the distribution of questionnaires to clarify any difficulties faced by the respondents. Electronic mail reminders were also sent periodically. Data for the study was sourced mainly through closed ended questionnaires.

1.7 SIGNIFICANCE OF THE STUDY

The study will be vital to the road agencies in an effort to increase rapid development of road network in Ghana. The research will be helping Ministry of Roads and

Highway and its agencies to develop alternative models of financing road infrastructure projects and incorporate in it program the process of obtaining works and services through the public-private partnership model of procurement.

The questions will address issues on challenges of Public Private Partnership (PPPs) model of procurement for road infrastructure in Ghana, constraints which affect the implementation of PPPs in the procurement of roads infrastructure in Ghana and changes in existing structures to enhance PPP implementation in the Ghana road sector

It is also envisaged that with the exposition of this study, better contract deals will now exist between the public sector and private entities because costs are shared, economies of scale and synergies are achieved, and decision making is shortened due to the cooperation between public and private partners (Klijn, 2000). The findings of this study are very crucial for the government as well as the road ministry and its agencies since more road projects could be implemented through the PPP model of procurement to improve deficit of road network in Ghana. Lastly, the findings of this research will serve as a contribution to knowledge in the academia as well as the industry and will spur others on to engage in research on the constraints and opportunities of public private partnership model of procurement for road infrastructure in Ghana.

1.8 ORGANIZATION OF THE STUDY

This study was divided into five main chapters.

- Chapter one: Introduction – The introduction briefly described what the whole content of the study is about. The background discussed the importance of

public-private infrastructure and services. Chapter one also introduce the topic, aims and objectives of the study, methodology and significance of study.

- Chapter two: Literature Review – The literature review is an accounted related works that has been published by accredited scholars and researchers. The literature review also discovered important variables relevant to the study and summarizes in the end the main issues discussed.
- Chapter three: Research Methodology – This chapter dealt with the structured process of conducting the research such as the methods adopted in the collection of data, sampling of respondents, questionnaire design and administration of questionnaires for analysis.
- Chapter four: Research Analysis – The appropriate formulas for all relevant statistics used in analyzing and interpreting the collected data was dealt with in this chapter.
- Chapter five: Conclusion – This chapter gave the final summary of the research work done. The conclusion also states limitations to the research work and gave recommendations based on the findings of the data analysis.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides a critical review of literature in constraints and opportunities for public private partnership (PPPs) model of procurement for road infrastructure in Ghana. The chapter begins by given explanation to public private partnership concept, characteristics, policy/structures in Ghana, government commitment to implement PPPs project in road infrastructure and relevant scenarios in other countries. It also provides a vivid account of PPPs projects in road infrastructure in Ghana and some developing countries. Challenges on the existing structures and the way forward to improve PPPs model of procurement for road infrastructure projects.

2.2 CONCEPTUAL EXPLANATION OF PUBLIC PRIVATE PARTNERSHIP

A 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 traditionally provided by the public sector. Usually, in a PPP arrangement, the private sector party performs part or all of a government's service delivery functions, and assumes the associated risks for a significant period of time. In return, the private sector party receives a benefit/financial remuneration (according to predefined performance criteria), which may be derived; entirely from service tariffs or user charges, entirely from Government budgets, which may be fixed or partially fixed, periodic payments (annuities) and contingent; or a combination of the above.

A PPP is a long-term contractual arrangement where Government taps the financial, human and technical resources of the private sector for the delivery of infrastructure and services traditionally provided solely by Government. The arrangement ensures

that there is a significant degree of risk-sharing between the public and private sectors. Principally, a PPP enables Government to provide better infrastructure and services by adopting some of the efficiencies and good practices of the private sector. Also it frees public resources that would have been used for such projects for other equally important uses. The private sector derives benefits from the revenue generated from the projects (MOFEP, 2011).

2.2.1 Public Private Partnership Modalities

There are in fact many more potential types of cooperation between public organizations and private enterprises than often listed. However, in practical terms, there are only a few PPP types or modalities related to the need to encourage major private sector investment. These include Build Operate Transfer (BOT), Build Transfer (BT), Build Own Operate Transfer (BOOT) and Build Own Operate (BOO). These are for new roads. The Rehabilitate Own Operate Transfer (ROOT) modality is also appropriate and popular where an existing major road can be upgraded into a toll road. In United Kingdom under the Private Finance Initiative (PFI), these modalities are similar but have somewhat different names, such as DBFO (Design Build Finance Operate). PPP modalities vary mainly in (i) risk transfer to the private sector, (ii) the investment by each party and (iii) the control and ownership of assets (including whether during the concession period or ultimately at transfer). The modalities listed in Module 2 generally provide an increasing investment and risk by the private sector and, relatedly decreasing control and ownership by the Government.

There is a fine but significant distinction between Build Operate Transfer (BOT) and Build Own Operate Transfer (BOOT) that is often not made. BOT projects are usually

those financed and operated by a government institution; those financed by the private sector are called BOOT. Clearly, under the generic BOT, it is possible to extend PPP further through a service or operation and maintenance (O&M) contract awarded to a private company. In BOO, the private company retains ownership of the facility in Perpetuity. ROOT is a variant of BOOT and refers to a rehabilitation of an existing facility and likewise ROO is a variant of BOO (PPIAF, 2009).

2.2.2 Characteristics of PPPs

There are several well-defined models of PPPs, differing in purpose, service scope, legal structure and risk sharing, and increasingly, permutations and combinations of them. Specific forms of PPP are often referred to by special names. However, a single PPP can have the characteristics of several different forms and new types may emerge from time to time. One end of the spectrum could be an outsourcing of some routine operation, while the other could involve the private sector conceiving, designing, building, operating, maintaining and financing a project, thereby assuming a considerable proportion of risks. For the sake of clarity privatization is not a PPP. Also outsourcing without a significant transfer of risk to the private sector over a period of time is not a PPP (MOFEP, 2013).

2.2.3 Differences between traditional public procurement, PPP and full privatisation.

Traditional Public Procurement: Supply by the private sector of works, goods or service as defined by the public authority. Contracting authority establishes clearly what is to built, how and by what means. Invitations to tenders are accompanied by very detailed technical specifications regarding the type of work being procured. Price

quote is the single most important criterion in the evaluation of bids. The procurement process is short-term in nature and does not involve long-term occupancy of infrastructure assets, and thus does not lay emphasis on the operational phase of the project.

PPPs: PPPs introduce private sector efficiencies into public service by means of a long-term contractual arrangement. They secure all or part of the public service, call upon private funding and private sector know-how. Contracting authority establishes the output specifications of a project and leaves to the private sector the responsibility of proposing the best solution, subject to certain requirements. Price is one of the many criteria in the evaluation of bids. A lot of emphasis is on the technical and financial capability of the bidder, financial arrangements proposed, and the reliability of technical solutions used. Given the long duration of the concession period, emphasis is on the arrangements proposed for the operational phase.

Privatization means transferring a public service or facility to the private sector, usually with ownership, for it to be managed in accordance with market forces and within a defined framework. Privatization authority prepares the divestment plan. It involves transfer of ownership to the Private sector. Is generally a complex transaction with carefully designed contracts and a multi-stage competitive tender process. Generally, the public sector withdraws from Management of the entity on privatization. Almost all risks are borne by the private sector.

Privatization and PPPs are both forms of private sector participation in infrastructure service delivery. However, in PPPs the public sector retains underlying ownership of

the asset and accountability for service delivery, while physical asset provision and service delivery is provided by the private sector in line with the PPP contract agreement. Risks and rewards in a PPP are allocated and shared in line with the PPP contract between the public and private sectors. Privatization refers to the partial or full divestiture of Government ownership of an asset. Thereafter asset maintenance and service is determined and provided by the new private owners. No risks and rewards are shared between the public and private sectors in privatization. The new private owners carry risks and rewards conferred by their full or partial ownership of the asset (MOFEP, 2014).

2.3 THE NEED FOR USING PPPS FOR ROAD INFRASTRUCTURE

The 1990s have seen the establishment of public private partnership PPP as a key mechanism of public policy across the world (Osborne, 2000). PPPs have become a regular practice across the diverse sectors of government service provision stretching from construction of roads, telecommunication networks, prisons, hospitals, schools, universities, to managing these facilities. They are increasingly becoming the preferred method of procuring infrastructure and public services by government (Grimsey, 2002). While PPPs have received much publicity as efficient and effective modes of implementing public procurement policy in the developed world, little has been considered in the context of a developing country (Grimsey, 2002). The Government of Ghana (GoG) is currently facing serious challenges in infrastructure development and public service delivery which is constraining the growth of the Ghanaian economy. The provision of public infrastructure and services has typically been viewed as the responsibility of Government (Govt. of Ghana, 2011). Given limited budget resources, the country's huge deficit in road infrastructure cannot be

met by the public sector alone through budget allocations. Currently, addressing Ghana's infrastructure deficit could require sustained spending of US\$1.5 billion per annum over the next decade. It is Government policy, therefore, to encourage the use of Public Private Partnership (PPP) as a means of leveraging public resources with private sector resources and expertise, in order to close the infrastructure (road) gap and deliver efficient public infrastructure and services. In furtherance of this objective, the Ministry of Finance has developed the National Policy on PPP to provide a clear and consistent process for all aspects of PPP project development and implementation from project identification, evaluation, selection, to procurement, operation and maintenance and performance monitoring. This will be followed by the passing of a law on PPP this year to provide the legal framework for PPP transactions. Government is committed to the accelerated development of the country and will ensure that the necessary environment is created to enable the private sector partner the public sector to provide the needed road infrastructure and services for a better Ghana.

Development is a shared responsibility for Government and the private sector. Government and the private sector have indeed been working over the years to provide infrastructure and services. What the National Policy on PPP has succeeded in doing is to introduce a coordinated approach and process within a policy framework to give confidence and assurance to the private sector of the security of their investments. There are several projects in the country that need to be executed but Government does not have the money and other resources now to carry out all the projects. There is therefore the need to engage the private sector to partner with the Government in a sustained and organized manner to undertake such projects. It is

important for Ghana to be part of the global production system in order to move up the ladder of developing countries. To be able to do this, there is the need to accelerate her infrastructure development to enable enterprises in the country to become competitive in the global market place. Government sees the PPP Programme as a tool to mobilize resources from the private sector for infrastructure and service delivery at a comparative cost. PPP is one of the surest ways of leveraging the efficiency and dynamism of the private sector to support Government development targets. When this is done properly everyone benefits. The Government is able to meet its targets for the delivery of infrastructure and services, the private sector benefits from good infrastructure and can produce at lower costs and be competitive on the local and global markets. The general public benefits from easy availability and access to good and well maintained infrastructure (MOFEP, 2014).

2.3.1 Motives and Benefits of PPPs for Road Infrastructure

Though the motive and expected benefits of PPP may vary from one organization or sector to another, there is efficiency in making better use of PPPs because costs are shared, economies of scale and synergies are achieved, and decision making is shortened due to the cooperation between public and private partners (Klijn, 2000). Risk is allocated to the party best able to manage it (Mustafa, 1999) leading to improved delivery in terms of time, cost and quality, elimination of over specification and improved maintenance of public infrastructure (Dixon, 2005). Budget constraints are eased, whole life costs reduced (Grimsey, 2004), monitoring and accountability strengthened. In a nutshell, PPP have demonstrated their usefulness in reducing risks, costs and the certainty of public procurement . Key Success Factors are that Effective PPPs take time to establish and then yield results. For PPP to be successfully initiated

and implemented, the presence of a conducive and enabling legal and regulatory framework is a critical prerequisite. The Challenge for Developing Countries Despite the benefits expected from PPP, there is need to exercise caution in broadening its application in the context of developing countries. The dilemma in adopting the PPP approach by developing countries begins with their status as nations. Developing countries are economically depressed, lacking the resources to effectively apply a PPP. Research studies and the literature that paint a rosy picture on PPP relates to countries with relatively strong public and private sector institutions, a sound economic resource-base, an appropriate and enforceable regulatory framework. Public sector institutions in developing countries are weak; they have a poor economic resource base and an inadequate regulatory framework. In similar vein the private sector is still young and lacks adequate financial, technical and managerial capabilities (Larbi, 1997).

2.3.2 Key benefits of ppps for road infrastructure

The benefits of PPPs include the following: (a) Accelerated delivery of needed infrastructure and public services on time and within budget. (b) Encouraging the private sector to provide innovative design, technology and financing structures. (b) Increased international and domestic investment. (c) Risk sharing by government with private sector partners. (d) Ensuring good quality public services and their wider availability. (e) Real financial benefits reflected in reduction in the initial public capital outlay, and a better utilization and allocation of public funds. (f) Economic growth and Increased and wider employment possibilities (National Policy on PPP, 2011)

2.3.3 PPPs deliver greater efficiencies

The PPP approach is often more complex, expensive and time consuming compared to traditional budgetary procurement. However, service delivery by traditional procurement has not always met Government and public expectations. Experience with PPPs worldwide, has shown that if you consider full life cycle cost to deliver, operate and maintain the asset over a long period as most infrastructure services require, a well prepared PPP delivers greater efficiency, value for money and significantly improved service delivery levels (MOFEP, 2014)

2.3.4 Worldwide trends for infrastructure investment.

The World Bank estimates that in developing countries the annual demand for infrastructure (roads, rail transport, urban transport, ports, water, sanitation, telecommunications, and energy) exceeds US\$1 trillion, including about US\$250 billion for new and rehabilitation investments. According to World Bank sources, private sector participation has multiplied by about ten between 1990 and 1996, with particular focus on power and telecommunication infrastructure (about 70% of the total investment between 1990 and 1996). However, private capital flows provide less than 15% of the estimated demand (Ref. 2), and then only a relatively small number of middle-income countries (mainly, Argentina, Brazil, Mexico and Malaysia) plus China and India are the recipients of those flows. About 140 of 166 developing countries equivalent to almost 85% attract only 5% of the flows. Of the international flows for transport investment in developing countries, about 75% came from official development agencies while 25% came from private sources.

Even for developed countries, the percentage provided by the private sector remains a minority. In 1996, in the US, that percentage amounted to about 47%, in the Netherlands, 46%, in Japan, 14%, in France, 13% and in Germany, about 9%. The private involvement is also often concentrated in power and telecommunications, and to a lesser extent in the air, port, and rail transport sub-sectors. Urban and transport infrastructure continues to benefit little from private sector involvement. In the road sector, the emphasis has been on commercialization of (operating) agencies with or without private participation, but less limited on attracting private capital funding (PPIAF, 2009). In all, the overall picture is one where the current financial resources are not sufficient and a combination of approaches must be explored and implemented in order to try to reduce the above-mentioned gap.

2.3.5 General institutional issues of PPPs

The steady growth of private sector participation in infrastructure since the eighties appears to show a process during which a novel approach needed some time to take roots and a substantial amount of learning experience had to develop for new initiatives to unfold. Progress, however, has been limited due to the frequent political reluctance (often originated in public opinion) to give up control of infrastructure assets which had been in public hands for a long period of time.

This reluctance, in addition, has been compounded by the existence of other institutional factors, chief among them (a) the absence of a matured regulatory framework, to prevent the appearance of monopoly situations and sharp increases in tariffs or reductions in the level of service (which can lead to a political backlash), and (b) an unstable sector policy environment coupled with unclear path to recourse if

problems ever arose. These factors have often led to protracted tendering and negotiation processes, which have undermined the credibility of some PPP initiatives. Overall, they have raised the policy risks and widen the mismatch between the degrees of project risks as perceived by the public and private sectors. This mismatch is the basic reason for protracted negotiations and frustrations between public and private partners. Governments tend to perceive much lower risks than do sponsors and lenders in the private sector, leading to terms-of-reference (and contracts) and a regulatory and policy framework not conducive to the expansion of PPP initiatives.

The lack of clarity about government's objectives and commitments often adds those factors. In all, the conditions set for private participation are often too cumbersome to comply with, require a complex decision-making process, and imply a high level of risk. Nonetheless, even within a stable general macro-economic (and political) environment, two factors are effectively necessary for a project to have a chance of succeeding: (a) a strong government commitment which can counteract any possible institutional or vested-interest resistance; and (b) a sound financial basis with, if the project requires government support (in the form of subsidies or guarantees), a proven economic worthiness (PPIAF, 2009).

2.4 CONSTRAINTS TO THE EXPANSION OF PPP ROAD ROJECTS

In the development of PPP projects, four main types of constraints must often be overcome:

Political and bureaucratic constraints, such as fragmented decision making due to the involvement of multiple public agencies, the prevalent emphasis on administrative procedures (rather than on strategies and results) that stem from the traditional,

lengthy tendering process (normally split in three or four phases, from planning to final operation). These constraints must be tackled with an aim at (a) developing and establishing clear and sustainable rules and agreements among relevant public authorities, between these authorities and the affected users, and between the authorities and the private sector (in particular, regarding the level and form of government support, the level and structure of users' charges, and the basic design of the project), (b) incorporating a strategic perspective to the development of infrastructure, and (c) reducing the length of the often protracted infrastructure development process.

Regulatory constraints like the presence of fuzzy responsibilities among regulatory agencies and ministerial units and of unclear regulatory procedures, and the lack of, or deficient, framework for the resolution of disputes. These constraints must be overcome towards providing transparent procedures to delineate the market-competition, tariff-setting, and any other legal issues related to the regulation of the general framework for project construction and operation and any revisions to those procedures.

Financial constraints, which largely stem from public budgetary limits and hesitant users' charges policies. They must be addressed towards achieving a sound financial structure for all the project's phases and an appropriate blend of back-stopping conditions, equity contributions, or other risk-reducing measures which can help achieve the economic objectives of specific projects (for the society as a whole).

Methodological constraints, which stem from the frequent limited knowledge of inter-relationships between variables and which prevent the clear definition of performance indicators or the estimation of values that are key to the economic and risk evaluation of transport projects. Overcoming these constraints would allow to refine those elements that are part of the structuring components described in section 3, such as: (a) the conditions under which the project may become not feasible, (b) the likelihood that certain outcomes can actually take place (risk analysis), (c) the value of environmental factors, and (d) the ability to define adequately the quality/level of service, the means of verification of compliance with agreed performance indicators, and the specification of remedial actions. The first two constraints often derive into a tendency for (a) excessive control of private management through over-regulation and (b) risk sharing arrangements which penalize the upside potential of the private sector while incorporating simultaneously long-term(contingent) government guarantees without adequate (budgetary) provisions.

There is a need for increased flexibility with improved transparency, appropriate legal framework (which allows for speedy and fair resolution of disputes), and adequate procurement procedures (which, for instance, incorporate pre-qualification). The financial constraints originate in the fact that transport investments are (a) often large and their costs can be recovered only over long periods of time, and (b) largely sunk as the assets cannot be used elsewhere except at a great cost. For this purpose, commercial risk sharing must be targeted to the specific items which are highly uncertain and subject to tender (like minimum revenue support limited to the ramp-up periods after construction, during which revenues are uncertain). The fourth constraint stems from the limited knowledge usually present at project preparation about the

interrelationships between certain variables (like price and time elasticity of demand) or just the methodologies to define the values of certain variables (like time, pollution or accidents). The methodological constraints prevent a more careful consideration of risk variables and clearly shielding the responsibilities of government or sponsors over agreed performance targets. In this last respect, PPP projects involve the government (normally, the owner of the infrastructure) that delegates the use of the assets for a specified period of time to the private sponsor. In the presence of incomplete, in the case of transport project, it is usually very difficult to write down a contract to specify the detailed specifications the private sponsor should undertake in each contingent situation, and it is also difficult for the government to monitor (and thus enforce) those detailed specifications. As a result and due to information asymmetries, a 'principal-agent' problem arises, creating what are called 'agency costs'. These costs and the steps taken to mitigate them, like establishing costly monitoring processes, can adversely affect the ultimate efficiency of the project (Aurelio, 2008)

2.5 OPPORTUNITIES FOR THE EXPANSION OF PPP ROAD PROJECTS.

While the provision of infrastructure cannot simply be left to market forces, the expansion of PPP initiatives to attend the infrastructure requires the rethinking of the traditional approach for the project and tendering cycle and the reform of bureaucratic attitudes prevalent in public authorities. Public funds are often required to cement the gulf between political goals, users' needs, and financial viability. But the private sector participation cannot expand to the extent necessary without an environment that rewards innovation and performance, eliminates political interference on management or technical matters, and provides a sound and transparent legal basis for

the resolution of disputes. Up to now, the traditional public-works approach of the public sector has been to seek the best combination of technical value and price for each individual phase of the project cycle, separating the design, construction, and operation processes in successive (normally, lengthy) tender procedures.

This reduces innovation and entrepreneurial risk capital and the possibilities for the private sector to make an effective contribution, especially in terms of developing and implementing novel ideas and cost-effective designs. That traditional approach often leads the private sector to seek substantial guarantees from the public sector, which, then, by largely transferring back the risk to the public sector, largely defeats one of the main purposes of a PPP initiative. In addition, the methodological constraints and the principal-agent problems mentioned-above create inefficiencies which can only be addressed through flexibility and trust. This requires the delineation of the legal procedures to protect both the public and private sectors in the resolution of disputes. In addressing the constraints listed above, opportunities can be created with a fundamental revision to the way projects are normally identified, designed and implemented. This revision should include the following actions:

- Reformulating the framework for entire process (from planning and design to operation), in such a way that the private sponsor can incorporate from the outset the innovation to reduce costs and risks. This framework would also include the possibility of identification of projects by the private sector and the unambiguous definition of the steps to be followed under that possibility.
- Incorporating into the relevant authorities the personnel with the technical and negotiation skills necessary to support that framework (which would encompass assessments such as that of the Desirability of a project concept which may require subjective judgment). These skills should strengthen the

deal-making capacity of those authorities and promote a basis for a strategic orientation (rather than administrative-orientation) of infrastructure project development (which, in turn, would more likely attract private risk capital).

- Addressing the methodological constraints. With strengthened methodological tools, it would be easier to establish and define general (flexible) specifications—core requirements—for the development of project concepts and allow the private sector to assume the innovation and risks since the planning stage (or, at least, after the completion of the public information/participation phase over project concepts). In addition, those tools would permit the estimation and pricing of risks and the definition of performance indicators (in close relationship to inter relationships between and) better supporting the implementation of the reformulated framework.
 - Redefining and revamping user charges' policies, within the context of economic policies. Transport projects often do not pass a minimum financial return because user charges are either too low or non-existent. In particular, it has been shown that for the road sector if indirect (externality) costs (congestion, pollution and accidents) are taken into account, road users are heavily subsidized (Ref. 1). With explicit prices for those costs (and similar considerations for all transport modes), benefits would accrue to the rest of the society in lower congestion and pollution and the provision of infrastructure would be more efficient. In addition, these charges would also raise significant revenues which would go towards the recovery of the capital costs of the network, adding to the financial viability of public-private partnerships (by providing a more stable revenue source).
5. Revising (or expanding) the financial options for the participation of the public sector in

PPP initiatives. As transport project often have an initial (ramp-up) period of high risk during which demand builds up, the participation of the public sector is often necessary to make possible the financial viability of a project and not compromise the initial debt charges (Aurelio, 2008)

2.6 PUBLIC PRIVATE PARTNERSHIP POLICY/STRUCTURES IN GHANA.

The provision of public infrastructure and services is one of the prime mandates of Governments all over the world. Infrastructure (roads, among others) is a fundamental prerequisite for economic growth and development. In addition, social and community infrastructure including education and health facilities, public housing and buildings, cultural facilities and environmental infrastructure are essential in modern societies. All across the world studies have consistently shown the close relationship between infrastructure and economic output.

However, fiscal constraints experienced by countries have resulted in the development of new and innovative approaches to the provision and financing of public infrastructure and services. The traditional role of the Government as the primary infrastructure and public service provider is gradually being supplemented with private sector expertise and financing. Accordingly, the Government is implementing a combination of policy and legal reforms, financing mechanisms, incentives and institutional support to bolster private sector participation in provision of public infrastructure and services through Public Private Partnership (PPP) arrangements. The government on 3rd June, 2011 adopted the National Policy on PPPs to provide the initial frame work for a better .organized implementation of PPPs in Ghana (MOFEP, 2011). An Act is therefore being promulgated to put in place the legal framework pursuant to the National Policy on PPPs.

The Government of Ghana (GoG) is committed to establishing a clear financial, legal and transparent administrative framework and eliminating obstacles to PPP arrangements. In 2004, Ghana developed PPP policy guidelines. However these were not operationalized. This current policy framework is enhanced and harmonized with the 2004 Policy Guidelines (MOFEP, 2011). In Ghana, successive governments, at least since the year 2000, have openly acknowledged the role of private politics referred to as “the private sector” in their efforts to bring development to the people. In the Kufuor administration, a whole ministry for private sector development was set up to make it a capable partner to government for national development.

In the 2004 Public Private Partnership (PPP) policy guidelines, which attempted to officially integrate the two sectors in the development process, the private sector was positioned as Ghana’s “engine of growth” to indicate its importance. Unfortunately, failure to fully operationalized the guidelines denied the sector, the needed energy and capacity (fuel, body and tyres) to drive the economy to the envisaged destination.

From Atta-Mills administration, the initiative was maintained, leading to the launch of another national policy document on PPP in June 2011, by then Minister of Finance and Economic Planning Dr. Kwabena Duffuor. The objective of the document was to set out clearly the process for all aspects of PPP project development and implementation; from “project identification, appraisal, selection, to procurement, operation, and maintenance and performance monitoring and evaluation”. In that document, the PPP is defined as “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 traditionally provided by the public

sector”. It is important to note that there is nothing like “privatization” in this definition. In addition to the Ministry Of Finance (MOF), the following institutions and agencies play key roles in institutional arrangements for the PPP: The National Development Planning Commission (NDPC), Government Contracting Authorities - Ministries, Departments and Agencies (MDAs) and Metropolitan, Municipal and District Assemblies (MMDAs), General Assembly of MMDAs, Public Procurement Authority (PPA), Ministry of Trade and Industry, Cabinet, Parliament, PPP Approval Committee, Ghana Investment Promotion Council (GIPC), Attorney General’s Department, Regulatory Authorities (e.g. Public Utilities Regulatory Commission, Water Resources Commission, Ghana Railway Development Authority, etc) (MOFEP, 2011).

2.7 GHANA GOVERNMENT COMMITMENT TO IMPLEMENT PPPs PROJECTS IN ROAD INFRASTRUCTURE

The Ministry of Roads and Highways is exploring Public Private Partnerships (PPP) schemes in the financing, construction and management of road infrastructure. It has recognized that PPP is one of the viable options for the provision of road infrastructure using private sector financing. The Ministry is in discussion with a number of potential private sector entities for the construction of some key road sections such as the Motorway Overpass at Teshie Link Junction (MRH, 2010).

The viability of private sector investments hinges on a robust and functional infrastructure of roads, rail, sufficient and efficient energy, stable water supply and a seamless communications and ICT infrastructure have clear plans for the roads and transport sector, which we will start implementing this year. These include the introduction of public-private partnership models on commercially viable routes along

the Western, Eastern and Central Corridor roads. Work is soon commencing on the Northern segment of the Eastern Corridor road, stretching from Oti Damanko to Nakpanduri (MRH, 2010)

In partnership with the private sector, we will embark on an ambitious but realistic programme of building new roads and bridges; expand electricity generation to energize our economy; increase access to good drinking water and quality healthcare for our growing population; and improve sanitation and human security for all. These were announced by President John Dramani Mahama (MRH, 2013). According to President John Dramani Mahama, the Government has clear plans for the roads and transport sector, which they will start implementing them. These include the introduction of public-private partnership model on commercially viable routes along the Western, Eastern and Central corridor road. The objective of Public Private Partnership Project (PPP) for Ghana is to improve the legislative, institutional, financial, fiduciary and technical framework to generate a pipeline of bankable public private partnership projects. There are three components to the project, the first component being institutional, fiduciary, legislative, and financing capacity building. This component is focused on developing the in-house capacity within the Government of Ghana, beginning with Ministry of Finance and Economic Planning (MOFEP) (Govt. of Ghana, 2011).

Government is also considering the Build, Operate and Transfer (BOT) and the Maintain, Operate and Transfer (MOT) concepts of Public Private Partnership (PPP) arrangement, for the maintenance of roads in Ghana, Ministry of Roads and Highway has announced. Government is exploring new avenues to improve the maintenance of roads because the Ghana Road Fund could currently sustain only about 40 per cent of

the road maintenance needs in Ghana. The remaining 60 per cent of road network maintenance had been left unattended to, and government would have to look for funding from donor partners to fix them. According to the Minister of Road and Highways, the practice of always soliciting funding from donor partners should not be allowed to continue, hence the need for efforts and measures to generate more revenue from local sources, for the effective maintenance of the roads in Ghana (GNA, 2014).

The adoption of a Public Private Partnership (PPP) framework therefore reflects the Government's desire to improve the quality, cost-effectiveness and timely provision of public infrastructure and services in Ghana. The Government is mindful that PPPs are not a panacea for all public infrastructure investment needs and therefore the PPP Framework should be viewed as a complement to and not a substitute for the Government's continued commitment to open up key service markets to competition. PPPs should only be considered where they can provide greater value for money than other fully-private or fully-public service delivery options.

The private provision of public infrastructure and services has the potential to offer enhanced value for-money and enables the Government to use the private sector's delivery and project completion expertise and capability for the benefit of the people. In addition, it helps the Government better understand the whole of life cycle cost of investments and enables a more rigorous project assessment and sharing of risk with the private sector (MOFEP, 2011).

2.8 SOME PIPELINE AND ON-GOING ROAD PROJECTS IDENTIFIED FOR PPPS:

Accra-Takoradi Highway expansion into a 3-lane dual carriage road; Accra-Tema Motorway expansion into a 3- or 4- lane dual carriage motorway; Accra-Kumasi Highway into a 2 or 3 carriageway road (MOFEP, 2013). Road transportation constitutes an integral part of a nation's Development. In Africa, roads form one of the most important and valuable public assets as it carry about 90% of its passengers and major access to its rural communities, which forms the food basket of every nation. It is all encompassing and pervasive and therefore affects the social, economic, and the political life of every citizen. In Ghana, road transportation accounts for 94% of freight and 97% of all traffic movements. In the growth of countries such as India and China, we have seen that there is a positive correlation between investment in road transportation and growth and poverty reduction.

In Ghana, completed and maintained roads have lead to a 20% increase in visits to hospitals, a major lowering of the cost of traveling to market centers, and Efficient delivery of farm produce to urban centers by farmers which empowers them financially and reduces food costs. The Ghanaian government has undertaken to ensure that transport is used as a means to achieve the targets set under the Growth and Poverty Reduction Strategy (GPRS II) and to achieve the Millennium Development Goals and the attainment of middle income status by 2015 (Savarino Company, 2005).

2.8.1 The Accra-Takoradi Road Dualisation Project Under the Ghana PPP

Project.

The Government of the Republic of Ghana (GOG) has applied for a credit from the International Development Association (IDA) towards the cost of the Ghana Public Private Partnership (PPP) Project and intends to apply part of the proceeds of this credit to payments for the proposed consulting services for PPP Pre-Feasibility Studies for the Accra-Takoradi Road Dualisation Project under the Ghana PPP Project. The Ministry of Roads & Highways (MRH) and the Ghana Highway Authority (GHA) in collaboration with the Public Investment Division (PID) of the Ministry of Finance and Economic Planning (MOFEP) would like to assess the feasibility of a PPP arrangement for the dualisation of the Accra-Takoradi Road. The main objective of this consultancy is to establish the technical, economic, and financial viability of the dualisation of Accra – Takoradi road as a PPP, through the generation of a Pre-Feasibility Study Report. The PPP Project Pre-Feasibility Study will represent a key input of the PPP project preparation phase.

Among the tasks involved in the generation of the PPP Project Pre-Feasibility Study are:

Definition of project Concept, Needs analysis of the Project, Technical Scope, Output Specifications/Requirements & Service objectives , Preliminary Project Cost Estimation, Preliminary assessment of social and environmental impacts of the project, Assessment of statutory, institutional, regulatory and legal framework , Project Traffic and Revenue Forecasting, Development of a Preliminary financial model, Preliminary Economic Analysis, Affordability analysis, Fiscal commitments and contingent liabilities exposures resulting from the project, Risk Analysis, Options Analysis and, Implementation Recommendations (Haward, 2005). Some of the

projects at various stages of development include: the expansion and ‘dualisation’ of the Accra-Takoradi road project (185km).

The Accra-Takoradi road project is seen as a top priority among PPP infrastructure projects to be developed in the country for a number of reasons. In 2007, oil was discovered in the western part of the country near the coast to La Cote D’Ivoire and Takoradi, which is the regional capital city. Takoradi was expected to assist in the servicing of the exploration process. It was imperative to link this important area of the country with the capital city Accra via proper road networks to take advantage of the numerous opportunities that will open up with the expansion of the road, including:- Linking the capital city – with its business district and seat of government – with the oil city is important for ease of doing business. Will provide a direct and indirect services and development output for about four million inhabitants between the two cities. The road is already part of the regional highway that connects Ghana to our neighbouring countries Togo in the east and La Cote D’Ivoire in the west. The road also serves as economic link between the Takoradi Port and other corridors of opportunity, leading to greater productivity, efficiency and capacity. Construction and expansion of the road could enhance the movement of goods and services along the corridor. The ministry of roads and highways is currently in the process of identifying a consultant to undertake the prefeasibility studies on the project. This is expected to be finished within a period of six months. Thereafter, depending on the study, a full feasibility study will be carried out, and requests for proposal from interested companies for the project to undertake the design, financing, construction, operation and maintenance. The Accra-Takoradi road is also a very important infrastructure project for the country because the Takoradi port, which is the second largest sea port in the Western

Region, after the Tema Port, serves about 35 percent of all sea freight into Ghana and undertakes exports of cocoa, timber, bauxite and manganese and currently has a potential to service the oil industry effectively (Apenteng, 2013)

2.8.2 Kumasi-Accra roadway for PPP

The most economic active area of the country and links the two major commercial centres of Ghana – Accra and Kumasi provides primary access to the northern parts of the country as well as an international transit route for Ghana’s landlocked neighbors such as Bukina Faso and Niger. Its strategic location makes it one of the most important links in Ghana’s roadway network as it serves the northern, central, western, and southern parts of Ghana, and a major influence on transportation for the almost 20 million people of Ghana. Prone to Accidents, over-speeding and inadequate provisions for broken down vehicles have contributed to the high rate of accidents on this road which harbors about 38% of the “black spots” (accident prone locations) in the country (Haward, 2005).

With regards to Traffic Flow, the existing route of the highway passes through many towns and commercial areas with its inherent traffic delays contributing to a 5+ hour travel time to transverse the 230 Km from Accra to Kumasi. Proof of Performance: its traffic flow supports and affordable Tolling structure allowing for reasonable tolling rates and the ability to repay debt over a reduced timeframe while providing to the International community Proof of Performance to substantiate the expansion of the dualization of the roadway system under a commercial financial structure without direct government guarantees. To design, construct, finance, and operate a dualized highway system and tolling regime that is user-friendly, for both public & commercial

use safe fair as to Tolling for all its users has continuous Traffic Flow without on-road checkpoints, Tolling stations, and Hawking economical, and an integral component of a unified cohesive transit system for Ghana (Haward, 2005).

Being the link between the two main commercial centres and the creation of a true Development Corridor, we are providing for future 'ribboning' once completed with expected and anticipated substantial commercial and residential growth. A value-added faster safer mode of transportation bringing the two major centers of commerce together with over 3 million consumers with a resultant Reduction of driving time from 5 ½ hours to 2 ¼ hours, Bypassing towns and cities, Fuel savings (>10L PER 100KM), Commercial transportation cost savings including drivers time and salaries, Reduced food spoilage of transport to urban centres, Maintenance, major repairs and insurance savings, Most importantly, major reduction in accidents and highway deaths. Generates revenue for Ghana by providing primary access to the northern parts of the country for goods transportation as well as an international transit route for Ghana's landlocked neighbours such as Bukina Faso and Niger to the Port at Tema. A fair and user-friendly revenue model that provides the ability for financing and continuously maintain the highway system and its benefits (user cost savings > toll rates) (Haward, 2005).

2.8.3 Political and commercial challenges

As is similar in many break-through projects, a number of Political and Commercial challenges were met. The introduction of Concession Agreements to dualize the major arteries in Ghana privatizes major roadways and diminishes the effect of the Ministries that are responsible for and tenders these roadways, creating an inherent

conflict of interest which had caused us major technocratic delays and stumbling blocks. Only political resolve and perseverance can help developers and sponsors overcome these stumbling blocks. Other political challenges included negotiating and necessary reassessment of the Ghanaian Highway Act, highway policing and control of Commercial Trucking Weighing Stations to police variances of axle weight limits. We also had to overcome a number of commercial challenges centering on the reality that there were no financially viable existing major Toll Roads in West Africa with its inherent financial preconceptions. Others challenge to be resolved included:

Restrictions placed on Concession financing by the IMF – Grant Element Discount Factor Effect of any potential future political unrest, either within Ghana or its neighbors. Currency devaluation PPP and Concession Agreements are new to Ghana with no previous experience for Government to rely on. These challenges cause major delays and timelines that create an unreasonable time loss and risk funding in order to obtain the necessary approvals; however, in our case, the current Government's political resolve and our perseverance allowed us to successfully complete the Governmental procurement process. To minimize these risks, it is most important for Developers to be able to fund the development phases of a project of this type in-house both prior to receiving the necessary approvals and obtaining Financial Close; and in doing so, the benefits to the Developer can outweigh the risks and provide for the country its necessary infrastructure. In closing Our Ghanaian experience has shown that in using PPPs, the International business community has the ability to help Africa help themselves in developing the necessary infrastructure that is so urgently needed to improve the social, economic, and the political life of every citizen. (Haward, 2005).

2.9 RELEVANTS SCENARIOS IN OTHER DEVELOPING COUNTRIES

2.9.1 SOUTH AFRICA'S EXPERIENCE

South Africa is proudly amongst the leading countries in the world in the law, policy and systems we have established for public private partnerships. Our public service delivery record has been enriched through PPPs in recent years, and our PPP project pipeline continues to grow, both in numbers and in the innovative value-for-money solutions it contains. National Treasury's PPP Manual is indeed a world first. It systematically guides public and private parties through the phases of the regulated PPP project cycle for national and provincial government, unpacking policy and providing procedural clarity as it does so. It draws on South African project experience to date and on best international practice, without infringing on the authority of accounting officers and authorities. It sets rigorous risk-assessment standards by which government will make affordable project choices that best leverage private investment for quality public services. The PPP project cycle is the roadmap for the PPP process and the Manual. The project cycle covers the two main periods of a PPP: the Preparation Period and the Project Term. The PPP Preparation Period spans phases I to III of the project cycle: Inception, Feasibility Study and Procurement, and concludes with the signing of the PPP agreement. The Project Term spans phases IV to VI: Development, Delivery and Exit. The PPP Unit in South Africa Current Staffing are Director General, Deputy Director-General, and Head: PPP Unit, Project Evaluation, Financial Analysis, Business Development, Municipal Desk, Performance Monitoring & Evaluation or Contract Management (Trevor, 2004)

2.9.2 Challenges of PPP in South Africa

The market for PPPs, and the legal framework for PPPs, are characterized by: 1. A lack of policy direction from the highest levels of government, or at least a lack of clarity in the minds of implementing agencies and the private sector, on why South Africa should do PPPs, what PPPs are, and what is or should be the role of the PPP Unit. 2. Inconsistent commitment to PPPs in different parts of government and at different levels of government. Also, commitment to PPPs, and direction on PPPs changes over time, while PPPs require a long time frame. 3. A general mistrust among the implementing agencies of private sector involvement in provision of infrastructure services. 4. A lack of time, resources, know-how, and authority within the staff of the implementing agencies, to originate and implement PPPs. 4. A lack of resources within the PPP Unit to promote PPPs and help support implementing agencies in developing and doing PPPs. 5. A policy bias toward traditional public procurement and against PPPs and lack of fiscal imperative to use PPPs. 6. A completely different market and legal environment for PPPs in the municipalities, where all of the above problems are much more severe and infrastructure needs are much greater (Nell, 2007).

2.9.3 N4 Toll road from South Africa to Mozambique through PPP

In 1996 the governments of South Africa and Mozambique signed a 30-year concession for a private consortium, Trans African Concessions (TRAC), to build and operate the N4 toll road from Witbank, South Africa to Maputo, Mozambique. After the 30-year period, control and management of the road reverts to the governments. The contract was worth R3 billion (at 1996 estimates). The N4 was financed from 20% equity and 80% debt. The three construction companies who are the sponsors of

the project contributed R331 million worth of equity with the rest of the capital provided by the SA Infrastructure Fund; Rand Merchant Bank Asset Management and five other investors. The debt investors include South Africa's four major banks: ABSA, Nedcor, Standard Bank and First National Bank; the Development Bank of Southern Africa; and the Mine Employees and Officials Pension Funds. The governments of South Africa and Mozambique jointly and severally guarantee the debt of TRAC and, under certain conditions, guarantee the equity as well. At the time it was the biggest project finance deal in Southern Africa. The N4 faced demand risk – would cars pay to use this road when less well-maintained but free alternative routes existed? Traffic volumes, which were dependent on increased regional trade and economic growth in Mozambique, have not been as high as the financiers projected. But TRAC spokesperson, Hannes van Wyk says the traffic has been 'acceptable' and the latest growth figures show that from 2003 to 2004, the traffic grew in volume by 4.5% there was also considerable user payment risk in Mozambique as the poor communities were unable and unwilling to pay high toll fees. TRAC cross-subsidized the Mozambican portion of the road with higher revenues from the South African side. It also provided substantial discounts to local users and public transport on both sides of the border.

Lessons: The commercial risk was shared between ranges of partners. Cross-subsidization (from the more affluent South African users) and substantial discounts for regular Mozambican users helped to reduce the user payment risk. The road facilitated further private sector investment in Mozambique, which in turn raised traffic volume. The N4 toll road showed the viability of PPPs in the road sector where the users are willing and able to pay. The N4 has successfully reduced overloading of

heavy vehicles, a major cause of road deterioration. It has also facilitated the growth of tourism in the region as well as other sectoral investments in Mozambique such as the Mozal aluminium smelter and the natural gas plants at Pande and Temane. CEO of the South African National Road Agency, Nazir Alli, says the road has brought stability and peace to the region through improved infrastructure. 'If you want to see the impact that it has had, just look at the massive development around Nelspruit. The states, the communities and the private sector have all benefited from having 504km of improved road, and local communities have gained through discounts, training and job creation. Some of the training has taken the form of life-skills education rather than job training, but the road itself has facilitated other business investments which have created further jobs.

Such criticisms don't reflect on PPPs per se, but they underline an important political reality. Even when governments and business are satisfied with a PPP, and the government in question has a popular democratic mandate, PPPs still attract public complaint from some quarters. Private sector operators must be aware that governments tend to deflect public complaints about high fees to the concessionaire, making high prices their responsibility. In other parts of Africa, private participation in road infrastructure has been more limited to road funds overseen by public-private boards, run independently of government and externally audited. They raise money from vehicle licences and user fees and contract road maintenance jobs out to private developers. Kenya is currently considering toll roads for the Kenyan sections of the Northern Corridor road but this has been beset by attempted corruption. Building on the successes of the N4 toll road, the next step in the MDC strategy was rehabilitating Maputo Port (Govt of S. Africa, 2012).

The N4 toll road is a high-profile infrastructure PPP between the governments of Mozambique and South Africa, and a private company, Trans African Concessions. The main focus is the N4 toll road from Witbank in South Africa to Maputo, the capital city of Mozambique. The term of the concession is 30 years, after which the ownership of the infrastructure asset reverts back to the two governments. The value of the project was approximately \$466m. The N4 was financed through a combination of equity finance by the private partner, plus loan finance from a range of the major financial houses in the sub-continent – primarily from South Africa. A percentage of the finance was also provided by the Development Bank of South Africa and a mine workers pension fund. Both governments agreed to underwrite or guarantee the debt in case of TRAC's inability to service the loan. Being the shortest link to an export harbor for South Africa's industrial heartland, the N4 corridor has quite rapidly evolved into a major intersection for Southern Africa's linkages with the world economy from an outward focus. From an inward focus, hundreds of thousands of Mozambicans use the road to access work and opportunities in South Africa. The construction was handled by the private partner, which was a consortium that included three construction companies. Labour and sub-contractors were sourced from both South Africa and Mozambique (Govt. of S.Africa, 2012).

2.9.4 India's experience

The Government of India has issued a draft policy supporting the use of public private partnerships for procurement of the nation's infrastructure. There is recognition for private sector investment and involvement to help build and develop key sectors such as transport/road, health, energy and defense. The need to create a suitable administrative framework, rules and an environment conducive to private sector investment is critical for development and growth. In his 2011-2012 Budget

speech, the Union Finance Minister announced the Government of India's (GoI) intention to formulate a comprehensive public private partnership (PPP) policy to be used by the Central and State Governments for the development of PPP projects. The GoI has recommended that PPP projects should comprise four key phases as follows:

- **Identification:** first, identification of the project opportunity through strategic planning, project pre-feasibility analysis, value for money (VFM) analysis, PPP suitability checks, and internal GoI clearances to proceed with PPP development.
- **Development:** second, development of the scope of the project, its financial (revenue) model, risk profile, contractual legal structure, considerations of prevailing law at the time, all of which are to be undertaken by technical feasibility and financial viability analysis, project structuring, legal structuring and obtaining of project clearances and approval.
- **Procurement:** third, the aspiration is for the procurement and project award stages to deliver "transparent, accountable, nondiscriminatory, competitive and timely procurement processes" in order to achieve a streamlined bid process.
- **Contract management and monitoring:** finally, due to the ever-fluctuating conditions during the lifetime of a project, the capability of the public authority to respond and interface with the private sector becomes crucial for project monitoring, completion and success. The Policy therefore recommends the use of a "suitable administration framework" and "appropriate mechanisms" for project monitoring and overseeing project co-ordination, facilitation, implementation and assistance. The concept of a contract manager (being responsible for the overall project and empowered to take responsive

and effective action for governance) is favored. **Challenges:** The GoI is acutely aware of key investor concerns towards previous PPP initiatives (which had arguably hampered the progress and development of PPP in India). Therefore, the Policy has been carefully designed to be seen as a move to promote investor Confidence and :); and provide an overall framework for effective PPP management (identifying, structuring, awarding and managing PPP projects (Kathleen, 2007).

Transport sector spending as a share of total public investment in India has been declining steadily over the years and as a result, there is a severe shortage of public funds available for road construction and maintenance. Private financing for road improvements thus constitutes a critical element of NHAI's strategy for funding projects under the NHDP, and the Government of India has introduced a number of policy initiatives aimed at bolstering the level of international as well as domestic private sector participation in the construction and maintenance of roads projects.

These include: Inclusion of PSP in the transport sector as a specific goal in the Government's Tenth Plan An amendment to the National Highways Act of 1965 to allow Build-Operate-Transfer (BOT) projects and the collection of tolls by private operators on both public and private roads; The development of standardized formats for PPP contracts in the roads sector; Simplification of the procedures required to acquire land for roads projects and to receive environmental permits. In addition, the Government introduced a specific policy for PPP in the roads sector. The main features of that policy include: Foreign direct investment of up to 100% is allowed; NHAI can participate with up to 30% of the total equity of a Special Purpose Vehicle (SPV) established to develop a road project; NHAI can provide capital grants to road

project developers on a case by case basis; Traffic support/guarantees are provided on a case by case basis; As a result of these and other policy initiatives, a range of PPP modalities have been employed to fund approximately 20% of the roads projects under NHDP, including traditional models such as BOT arrangements and joint ventures, and a new and innovative form of PPP, referred to as an "Annuity Concession." For high density corridors where the potential for direct tolling of road users exists, the Government of India has successfully utilized BOT toll road concessions as a way of mobilizing private financing. Under this model, the private sector builds, operates, and maintains the road for the period of the contract (usually up to 30 years), after which the road is transferred back to Government. The private operator is remunerated through the collection of tolls charged for use of the road, and in some cases, in part by payment directly from Government. Today, approximately 500 km of national highways are privately managed as toll roads, raising around 10.5 billion rupees per year (US\$ 224 million) (Kathleen, 2007).

2.9.5 New approach to PPP in the road sector: India's annuity concessions.

Where revenues from tolling are uncertain or will be insufficient to attract BOT operators, the Government traditionally had to employ Engineering, Procurement and Construction (EPC) contracts which entail little to no risk on the part of the private sector. To fill this gap, NHAI has developed the Annuity Concession model. To date, approximately 8% of the length of roadways subject to NHDP funding has been commissioned using the Annuity Concession model. Annuity Concessions are a variant of the BOT model in which the private operator is remunerated via a fixed, periodical payment ("annuity") from NHAI rather than through toll proceeds. Under these contracts, the private operator is responsible both for constructing the road, as well as for operating and maintaining it for a fixed period of time (typically ten years).

Because the break-even point for the private operator does not occur until late in the contract (typically around the seventh year in a ten year contract), this form of PPP transfers both responsibility for bridge financing and performance risk to the private sector. In addition, because the annuity payments are not indexed, the private sector retains any risks associated with higher than anticipated operations and maintenance (O&M) costs. Although Annuity Concessions do transfer certain key risks to the private sector, they keep revenue risk with Government (which retains the right to set and collect tolls). This makes Annuity Concessions attractive to private operators where a BOT-type arrangement would be considered too risky (Kathleen B, 2009).

2.9.6 Mauritius's experience

In the 2002/2003 budget, it was announced that Public Private Partnership (PPP) would be used as a new form of procuring and financing infrastructure projects and services in the public sector. This Policy Statement sets out the framework for using PPP in Mauritius. In 2002 Mauritius implemented a Public–Private Partnership Scheme that defined the government's policy on PPPs as an alternative means of financing public infrastructure and other major capital projects. The PPP Scheme provided for the enactment of a new enabling legislation and the PPP Policy Statement, published in May 2003, set out the framework for using PPPs in Mauritius, identifying four key considerations deemed essential for delivering successful projects, namely: affordability, the legislative environment, institutional arrangements and capacity-building. Further to this, the PPP Act 2004 (amended in 2008) provided for the implementation of PPP agreements between contracting authorities and private parties, and established a set of rules governing public–private procurement. The PPP Act establishes a PPP Unit under the chairmanship of the Policy Procurement Office.

The unit is responsible for dealing with all matters relating to PPP projects (Efraim, 2006).

2.10 CAPACITY BUILDING AND THE PPP PROGRAMME

For many people “capacity building” is synonymous with training and development. But indeed, capacity building goes well beyond training and development. According to the UNDP “capacity building is a long-term continual process of development that involves all stakeholders; including ministries, local authorities, non-Governmental organizations, professionals, community members, academics and more.” Its approach is to focus

on understanding the obstacles that inhibit people, Governments and other stakeholders from realizing their developmental goals while enhancing the abilities that will allow them to achieve significant and sustainable results. Though a relatively recent concept, capacity building is now a critical aspect of all good development programmes and has been adopted as one of the major pillars of the Ghana PPP Programme. Ghana desires to accelerate its rate of development yet the sources of finance for the things it needs to do, are fast drying up. As a result, Government has decided to adopt the PPP approach to get the private sector to invest some of its financial, human and technical resources in the development of public infrastructure and services. For this to succeed, the country needs to create an entrenched culture of PPP procurements. It requires developing amongst its people and institutions the requisite knowledge, systems, skills, tools and techniques for the PPP approach. Individual project actors must acquire an understanding of the concept, build experience in procuring PPP projects and be skilled in managing PPP contracts. They must also acquire experiential knowledge from those people who have done it before

and are willing to share their experiences. Additionally they must know the points to touch in times of need. They must understand who and where the knowledge storehouses are and be able to differentiate them from the many others who lay unwarranted claims to their ability in PPP process management. Most importantly, they must be allowed to make their own mistakes and learn from them. In addition public institutions and agencies as well as private sector entities must develop and operate systems which make it possible for them to work together effectively and efficiently (Apenteng, 2013).

2.11 SUMMARY OF LITERATURE REVIEW

A PPP is a long-term contractual arrangement where Government taps the financial, human and technical resources of the private sector for the delivery of infrastructure and services traditionally provided solely by Government. The Government of Ghana (GoG) is currently facing serious challenges in infrastructure development and public service delivery which is constraining the growth of the Ghanaian economy. It is Government policy, therefore, to encourage the use of Public Private Partnership (PPP) as a means of leveraging public resources with private sector resources and expertise, in order to close the infrastructure (road) gap and deliver efficient public infrastructure and services.

There is efficiency in making better use of PPPs because costs are shared, economies of scale and synergies are achieved, and decision making is shortened due to the cooperation between public and private partners. It is obvious from the foregoing that evaluation and development of PPP's are matters of great concern to the road sector agencies.

CHAPTER THREE

RESEARCH METHODOLOGY AND METHODS

3.1 INTRODUCTION

This chapter discusses the research method adopted in this study. It addresses issues on research strategy, design and process. Some of the specific areas considered were; population of the study, sampling technique, sample size, data preparation and statistical tools. These methods adopted brought to light the challenges facing Public-private Partnership model of procurement for road infrastructure in Ghana, the strategies adopted in addressing these challenges and the key constraints which affect the implementation of PPPs in the procurement of roads infrastructure in Ghana.

3.2 RESEARCH STRATEGY

Saunders et al. (2007) defines research strategy as a plan used by a researcher to answer research questions during the data collection process. According to Naoum (1998), the strategy of research is defined as the way in which the research objectives can be questioned. Naoum (1998) further stated that two types of research strategies exist that is; quantitative research and qualitative research. Quantitative research involves the use of structured questionnaires where the response options have been predetermined and a large number of respondents is involved (Fugar, 2010). It can also be described as a process of inquiry based on testing a theory composed of variables, measured with numbers, and analyzed using statistical techniques. The goal was to develop generalization that contributes to theory that enables the researcher to predict, explain and understand phenomenon. The researcher should remain distant and independent of what is being researched. Quantitative research is concerned with

questions about: How much? How often? To what extent? Quantitative research collects numerical data in order to explain, predict and or control phenomenon of interest. Data analysis is mainly statistical; the result of research is number or a series of numbers presented in tables, graphs or other forms of statistics (Abawi, 2008). The strategy adopted for this research was Descriptive research design which employed the quantitative approach to research.

3.3 DATA COLLECTION AND INSTRUMENTATION

3.3.1 Sources of Data

Bernard et al. (1986) states that it becomes imperative that selecting the manner of obtaining data and from whom the data will be acquired be done with sound judgment, especially since no amount of analysis can make up for improperly collected data. The sources of data provide exhaustive explanations to each of the methods used in addressing the aims, objectives, and research questions.

Collection of data for this study was done through both primary and secondary sources. The main survey questionnaires constituted the primary data while secondary information is an account of related works that has been published by accredited scholars and researchers.

3.3.2 Questionnaire Design

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 and in this light the use of jargons and technical terms were avoided. Simple words were used and sentences were simple and straight to the point. The

privacy of the respondents was taken in to consideration in order to allow the respondents to answer the questions without fear or intimidation. Enough instructions, guides and keys were provided to aid the respondents in answering the questions.

The questionnaires were closed-ended and provided options for respondents to choose, ranked and react to issues that were investigated. Likert scales with scores in the range of 1 to 5 were used to reflect the attitude, opinions, expectations, perception, and behavior of the respondents. The questions addressed issues on the status of PPPs in Ghana, the need for PPP procurement model for road infrastructure in Ghana, challenges that affect the implementation of PPPs in the road sector and changes in the existing structures to enhance the PPP implementation in the road sector. In all there were eighteen (18) questions in which tables were used to profile the variables to make it easy for respondents to answer.

3.4 SAMPLING TECHNIQUE AND SAMPLE SIZE

The term “sample” is described as a group of respondents (people) chose from a larger population for the determination of a survey. Polit and Hungler (1999) define it as a process of selecting a portion of the population to represent the entire population. For the purposes of this study, the size of population was derived by the collation of list of professional in the road agencies within Accra and Kumasi that managed Ghana Government road infrastructure contracts in the Ministry of Roads and Highways as well A1 B1 contractors. The Department of Urban Roads, Department of Feeder Roads and Ghana Highway Authority were visited to collate the sampling population because these agencies implement and manage road infrastructure projects in Ghana. Association of Road contractors was contacted for information on A1 B1 contractors. The following were the result of the collation: Department of Urban

Roads-19, Ghana Highways Authority-15, Feeder Roads-14 and AI BI Contractors-17. This gave a study population of 67 in the category of Contract managers, Project Managers, Civil engineers, Quantity Surveyors and A1 B1 Contractors respectively.

The snowball sampling was used to identify sections with the agencies that managed or currently managing projects of similar nature. Snowball sampling is an approach for locating information-rich key informants. Using this approach, a few potential respondents are contacted and asked whether they know anybody with the characteristics that you are looking for in your research (Fugar, 2010). This technique was adopted to help the researcher to reach hard-to-reach respondents since the point of location of the respondents as indicated by the list were in most cases not exact to enhance identification. The key people who manage project and are familiar with PPP concept were first contacted. These were the lead to other practitioners with the same characteristics till a representative sample size of forty (40) respondents was obtained.

3.5 INSTRUMENT ADMINISTRATION

The questionnaires were self-administered by the researcher to technical personnel such as project managers, civil engineers, quantity surveyors, consultants and A1 B1. The researcher then asks from these practitioners to be given directions to other professionals named by the researcher. In some instances the questionnaires were retrieved on the spot. After the administration of the questionnaires the researcher used three (3) weeks to retrieve the answered questionnaires. Retrieving the answered questionnaires was a great problem for the researcher in the sense that the researcher had to go several times to these professionals to retrieve the answered questionnaires. In all sixty-seven (67) questionnaires were administered and 40 of them representing 60% response rate were retrieved.

3.6 DATA PREPARATION AND STATISTICAL TOOL INTENDED FOR ANALYSIS

3.6.1 Data Preparation

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 aggregated units were packaged and entered into Statistical Packages for Social Sciences (SPSS Version 16) and later transferred to Microsoft Excel 2007 for analysis.

3.6.2 Statistical Considerations

Questions one to four on the questionnaire formed the general information related to the respondents hence no scoring or ranking was done. The statistical tool used to run the analysis was descriptive statistics with frequencies. Relative Important Index (RII) was used to rank the identified factors in order to identify the most pressing issues in order of importance or significance.

3.7 SUMMARY

This chapter addresses the research methodology of this study. A description of how the questionnaire was administered and the various sections in the questionnaire was highlighted. The chapter also explains the sample selection, describe the procedure used in designing the instrument and collecting the data, and provide an explanation of the statistical procedures used to analyze the data. With this background, the next chapter was devoted to the analysis and discussion of the survey results.

CHAPTER FOUR

ANALYSIS AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

In this Chapter, scientific analysis and interpretation were used extensively on the data gathered from the survey. Statistical Package for Social Sciences (SPSS) was used in this Chapter to introduce the data analysis and discussion of results. Descriptive statistics and Relative Importance Index were the main statistical tools used to analyze data received from the respondents.

Data analysis was divided into four sections. The first section of the analysis dealt with general information on the respondents. The second section (Section B) dealt with the need for using public-private partnership in the road sector. The third part discussed the constraints that affect implementation of public partnership (PPP) in the road sector. The last section (Section D) dealt with the assessment of policies and structures. There were forty (40) primary data collected in all.

4.2 PRESENTATION AND DESCRIPTIVE ANALYSIS OF DATA (DEMOGRAPHIC)

This section of the questionnaire comprised questions demanding personal information to provide detailed respondent characteristics. Data in this section included: the sectors of respondents, number of years respondents have been with their organization, respondent's professional background, and the major type of road construction respondents managed.

4.2.1 SECTORS OF AFFILIATION

This question was intended to enquire the various sectors the respondents belonged to.

Table 4.1 below shows the sectors every respondent was affiliated to. 52.5 % forming the majority of the respondents were working on urban roads. This was followed by Feeder roads and Ghana Highway Authority both having respondents of 5 (12.5%). From the table it is realized that a few of the respondents belonged to the Transport, Consultancy and Contracting sectors.

Table 4.1: Distribution of respondents' sector

<i>Respondents Sector</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
<i>Urban Roads</i>	21	52.5	52.5	52.5
<i>Feeder Roads</i>	5	12.5	12.5	65.0
<i>Ministry of Roads and Highway</i>	3	7.5	7.5	72.5
<i>Ghana Highway Authority</i>	5	12.5	12.5	85.0
<i>Consultant</i>	2	5.0	5.0	90.0
<i>Contractor</i>	2	5.0	5.0	95.0
<i>Municipal Assembly</i>	1	2.5	2.5	97.5
<i>Metro Bus Transit</i>	1	2.5	2.5	100.0
Total	40	100.0	100.0	

Source: Field survey, 2014

4.2.2 RESPONDENTS YEARS OF PRACTICE

The number of years the respondents have been with their various organizations tells the level of experience of the respondents hence affecting the quality of responses.

Table 4.2 shows how long the respondents have been practicing. 7.5% indicated they have been in service less than five (5) years. 25.0% and 22.5% have been in their organization for 6-10 years and 11-15 years respectively. The majority of the

respondents constituting 42.5% indicated they have been in their organization for more than 15 years. Due to the number of years in service, respondents can extensively give responses to the need for using PPP's in the road sector, constraints that affects its implementation and the assessment of policies and structures.

Table 4.2: Distribution of respondents' years in the Organization

<i>Years</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
<i>Less than 5 years</i>	<i>3</i>	<i>7.5</i>	<i>7.7</i>	<i>7.7</i>
<i>6-10 years</i>	<i>10</i>	<i>25.0</i>	<i>25.6</i>	<i>33.3</i>
<i>11-15 years</i>	<i>9</i>	<i>22.5</i>	<i>23.1</i>	<i>56.4</i>
<i>Above 15 years</i>	<i>17</i>	<i>42.5</i>	<i>43.6</i>	<i>100.0</i>
<i>Total</i>	<i>39</i>	<i>97.5</i>	<i>100.0</i>	
<i>no response</i>	<i>1</i>	<i>2.5</i>		
<i>Total</i>	<i>40</i>	<i>100.0</i>		

Source: Field survey, 2014

4.2.3 PROFESSIONAL BACKGROUND

Respondents were asked to indicate their professional background. From **fig 4.1** below, the results show that 17 (42.5%) of the respondents were Civil Engineers. This shows the level of knowledge in the construction of roads. 30.0% which constituted 12 respondents were Quantity Surveyors. Out of 40 responses, 6 (15.0%) were Project Managers. Structural and Geodetic Engineers constituted a percentage of 2.5 each. 7.5 % of the respondents were Contract Managers.

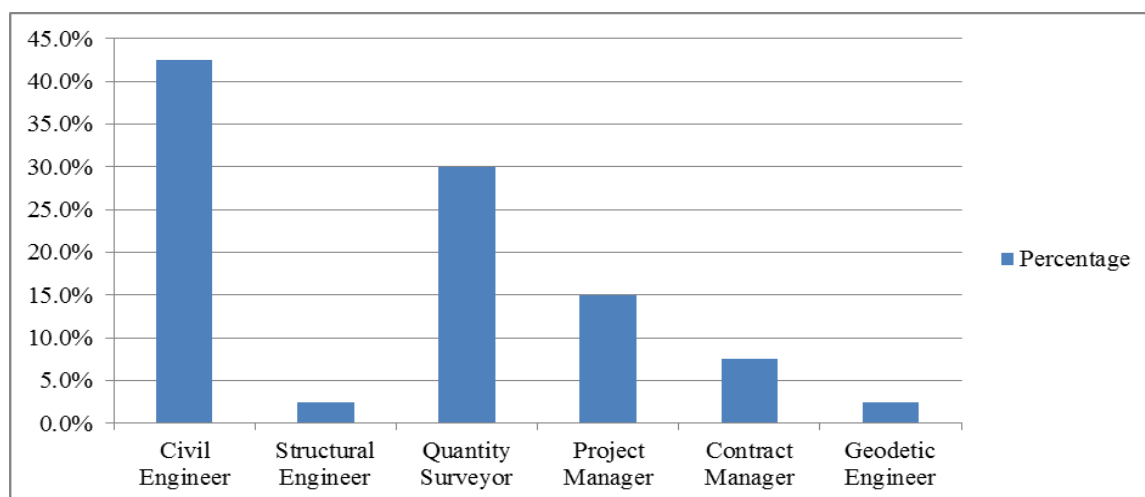


Figure 4.1: Respondents professional background

4.2.4 ROAD CONSTRUCTION RESPONDENTS MANAGE

This section of the questionnaire sought to find out the major type of road construction the respondents manage in Ghana. The result presented in **Table 4.3** illustrates that 17.5% of the total respondents managed Highway road construction, 50% of the respondents managed Urban roads, 12.5% for Feeder roads, 2.5% Assembly roads and 2.5% for Transport terminal. Five (5) of the respondents constituting 12.5% managed Highway, Urban and Feeder roads in Ghana.

Table 4.3: Type of Road Construction Managed

<i>Type of Road</i>	<i>Frequency</i>	<i>Percentage</i>
<i>Highway</i>	<i>7</i>	<i>17.5</i>
<i>Urban Road</i>	<i>20</i>	<i>50.0</i>
<i>Feeder Road</i>	<i>5</i>	<i>12.5</i>
<i>Assembly Road</i>	<i>1</i>	<i>2.5</i>
<i>Transport terminals</i>	<i>1</i>	<i>2.5</i>
<i>Highway, Urban, Feeder</i>	<i>5</i>	<i>12.5</i>
<i>Total</i>	<i>39</i>	<i>97.5</i>
<i>no response</i>	<i>1</i>	<i>2.5</i>
<i>Total</i>	<i>40</i>	<i>100.0</i>

Source: Field survey, 2014

4.3 THE USE OF PPP MODEL IN PROCUREMENT OF ROAD INFRASTRUCTURE

Respondents were asked to indicate the extent at which PPP model in procurement of road infrastructure is used within their various sectors. From **fig 4.2**, it is established that most of the respondents sometimes use PPP models in procuring of road infrastructure. 7.5% constituting 3 of the respondents often used the PPP models. This shows that many of the respondents have little knowledge on the significance of the usage of PPP models.

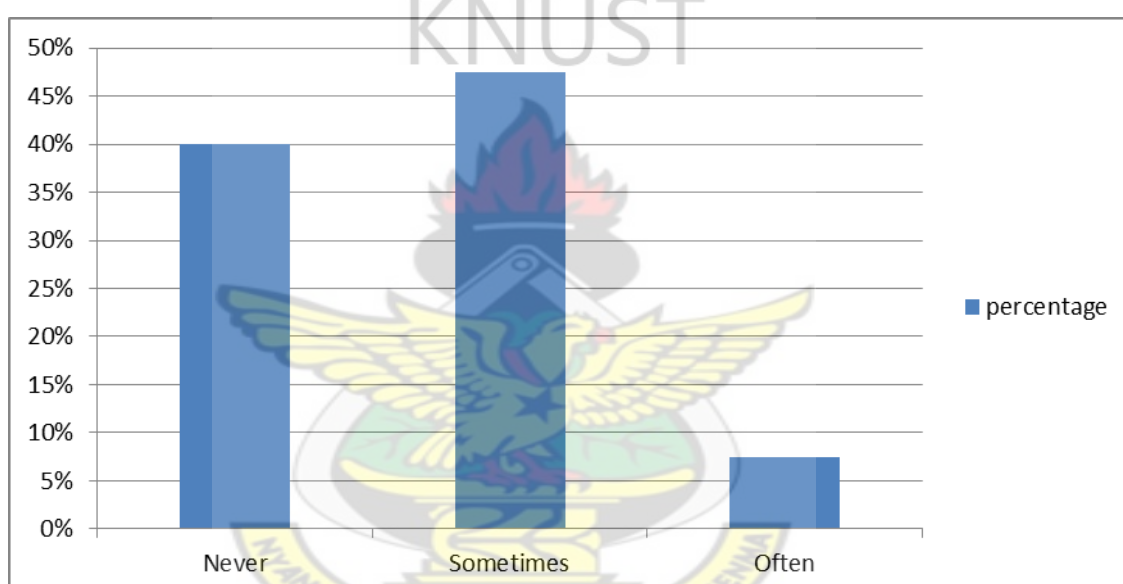


Figure 4.2: Use of PPP model in procurement of road infrastructure

4.4 LEVEL OF IMPORTANCE OF PERCEIVED BENEFITS OF PPP

Benefits associated with public-private partnership model of procurement for road infrastructure have been identified in **Table 4.4** below together with the mean scores of all forty (40) respondents as well as their RII scores and ranks. These benefits associated with PPP's includes Accelerated delivery of needed infrastructure on time and within budget; encouraging the private sector to provide innovative design, technology and financing structures; increased international and domestic investment;

risk sharing by Government with private sector partners; ensuring good quality public services and their wider availability; financial benefits reflected in reduction in the initial public capital outlay; and economic growth and increased and wider employment possibilities. The mean scores were calculated for each assessment factor. Respondents were asked to rank in their opinion how important is the perceived benefit of PPP's. A rank was provided for the factors to show which of them respondents deemed highly important to not important.

From **Table 4.4**, Government sharing risk with private sector partners preceded as the highly important factor with a mean score of 4.400 and a RII score of 0.880. This shows that risk sharing by Government is a very important benefit to the road sectors. Followed by Economic growth and wider employment possibilities (mean=4.200, RII=0.840); delivering services within time and budget (mean=4.128, RII=0.826) and Ensuring Good quality public services. Innovative design, technology and financing structures (mean=4.000, RII=0.800); Reduction in initial capital outlay (mean=3.825, RII=0.765); and International and domestic investment (mean=3.711, RII=0.742) were deemed averagely important by the respondents in respect to their organizations.

Table 4.4: Perceived benefits of PPP

Assessment factors	Rating					Total	Σw	Mean	RII	Rank
	1	2	3	4	5					
Delivery within Time and Budget	0	0	10	14	15	39	161	4.128	0.826	3rd
Innovative design, technology and financing structures	1	0	7	21	10	39	156	4.000	0.800	5th
International and domestic investment	0	4	12	13	9	38	141	3.711	0.742	7th
Risk sharing by Government	0	0	4	16	20	40	176	4.400	0.880	1st
Good quality public services	0	2	7	17	12	38	153	4.026	0.805	4th
Reduction in initial capital outlay	0	3	9	20	8	40	153	3.825	0.765	6th
Wider employment possibilities	0	2	8	10	20	40	168	4.200	0.840	2nd

4.5 ASSESSING THE BENEFITS OF PPP MODEL IN PROCUREMENT OF ROAD INFRASTRUTURE

Respondents were asked to indicate the extent at which they will assess the benefits of PPP in the procurement of road infrastructure projects in Ghana. From **Table 4.5**, it is established that most of the respondents agreed to the fact that the use PPP in procuring of road infrastructure is very useful hence beneficial to projects in Ghana. Only 3 constituting 7.5% of the respondents said PPP's in procuring of road infrastructure had very little benefit. None of the respondents agreed to it that PPP's in the procurement of infrastructure had no practical benefit.

Table 4.5: Benefits of PPP in road infrastructure procurement

<i>Benefits</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
<i>Very little benefit</i>	3	7.5	7.5	7.5
<i>Moderate benefit</i>	1	2.5	2.5	10.0
<i>Beneficial</i>	16	40.0	40.0	50.0
<i>Very beneficial</i>	20	50.0	50.0	100.0
Total	40	100.0	100.0	

Source: Field survey, 2014

4.6 EFFECTIVENESS OF PPP TO ROAD INFRASTRUCTURE PROCUREMENT

From **Table 4.6**, majority of the respondents (i.e. 35.0%) working with various sectors of road construction indicated that PPP's had little effectiveness to road infrastructure procurement. 30.0% of the respondents said they were moderately effective. 20% said PPP's were effective and only 2.5% agreed that PPP's were very effective. Since majority of the respondents are indicating little effectiveness, it confirms that PPP's used in procuring road infrastructure projects are not greatly effective.

Table 4.6: Effectiveness of PPP to road infrastructure procurement

	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
<i>Not effective at all</i>	2	5.0	5.4	5.4
<i>Little effective</i>	14	35.0	37.8	43.2
<i>Moderately effective</i>	12	30.0	32.4	75.7
<i>Effective</i>	8	20.0	21.6	97.3
<i>Very effective</i>	1	2.5	2.7	100.0
Total	37	92.5	100.0	
<i>no response</i>	3	7.5		
Total	40	100.0		

Source: Field survey, 2014

4.7 OPINIONS ON THE IMPROVEMENT OF EXISTING STRUCTURES OF PPP

From **fig 4.3** 57.5% of the respondents indicated there should be a significant review of existing structures of PPP's. 10% constituting 4 respondents agreed there should be quite a bit of modification. 27.5% said there should be some modification and 2.5% constituting 1 respondent agreed there should not be any modification. This shows that currently, there are no regulatory framework to govern the usage of PPP hence existing structures of PPPs should have some modification.

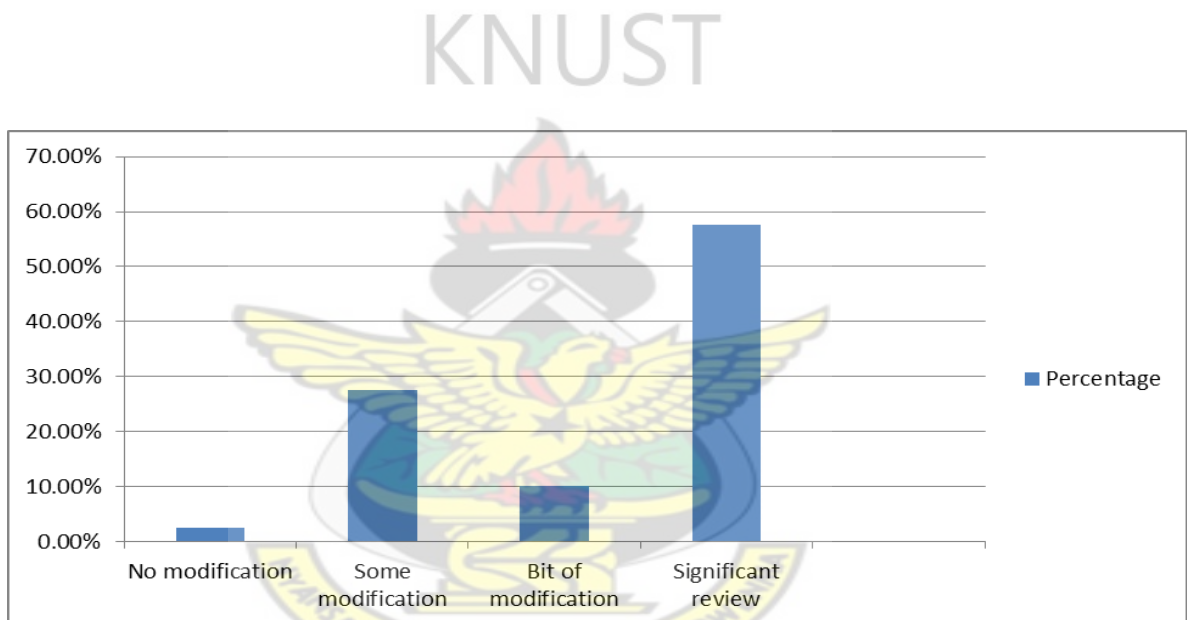


Figure 4.3: Opinions on the Improvement of Existing Structures

4.8 PPP MODELS IN CONFORMITY WITH ROAD PROJECT REQUIREMENTS

The respondent professionals were asked to rate road project requirements and how the requirements met the public-private partnership model of procurement. Respondents opinions were rated on a Likert scale of 1 to 5, where 1=Very Low, 2=Low, 3=Moderately High, 4=High, 5=Very High.

From the **Table 4.7** below, the project requirement that PPP model of procurement for road projects meet most is Value for money and services delivery. This has a mean score of 3.95 with a standard deviation of 0.94. This is followed by ‘Meeting Government and public expectations’ which has a mean score of 3.85. Life cycle cost to deliver, operate and maintain the road over a long period ranked 3rd with a mean score of 3.64 and a standard deviation of 0.96.

TABLE 4.7: PPP MODELS IN CONFORMITY WITH ROAD PROJECT

REQUIREMENTS	Mean	Std. Deviation	Rank
Value for money and service delivery	3.9487	.94448	1st
Government and public expectation	3.8462	.84413	2nd
Cycle cost to deliver, operate and maintain	3.6410	.95936	3rd

4.9 CONSTRAINTS TO THE USAGE OF PPP

Table 4.8 displays relevant constraints to the usage of PPP. Using a Likert scale of 1 to 5, where 1=Very Low, 2=Low, 3=Moderately High, 4=High, 5=Very High. Any ranking that has it constraints having a mean of 2.5 or above is identified as relevant and mean below 2.5 is marked as irrelevant to the professionals in the road sectors of Ghana.

From the **Table 4.8**, four (4) constraints were identified to be relevant to the usage of PPP. The top four (4) relevant constraints as identified from the table due to the responses of professionals in the road sectors are; 1. Political and bureaucratic constraints (such as fragmented decision making due to the involvement of multiple

public agencies), 2. Regulatory constraints (unclear regulatory procedures, and the lack of, or deficient, framework for the resolution of disputes), 3. Financial constraints (public budgetary limits and hesitant users' charges policies), and 4. Methodological constraints (limited knowledge of inter-relationships between variables which prevent the clear definition of performance indicators). Political and bureaucratic constraints was identified as the most relevant with a mean of 4.20. Regulatory constraints was the second most important with a mean score of 3.70 hence a gap between the two constraints. None of the constraints was identified as irrelevant by the respondents since they all scored a mean above 2.50

TABLE 4.8: CONSTRAINTS TO THE USAGE OF PPP

CONSTRAINTS	Mean	Std. Deviation	Rank
Political and bureaucratic constraints	4.200	0.757	1st
Regulatory constraints	3.700	1.090	2nd
Financial constraints	3.675	0.888	3rd
Methodological constraints	3.350	1.075	4th

Respondents were given the opportunity to specify other constraints that were relevant to the usage of PPP's. Some of these were; Demand Risk (if traffic volumes do not turn out as expected); Design risk (improperly thought through output specifications); Construction risk (delays, contingencies); Legal risk (land acquisition issue); and Limited level of knowledge of PPP among Government institutions.

4.10 CHALLENGES ASSOCIATED WITH THE USAGE OF PPP

Table 4.9 displays relevant challenges to the usage of PPP. Using a Likert scale of 1 to 5, where 1= Not Severe 2 = Less Severe 3 = Moderately Severe 4 = Severe 5 = Very Severe. Any ranking that has it challenges having a mean of 2.5 or above is identified as relevant and mean below 2.5 is marked as irrelevant to the professionals in the road sectors of Ghana.

From the **Table 4.9**, four (4) challenges were identified to be relevant to the usage of PPP. The top four (4) relevant challenges as identified from the table due to the responses of professionals in the road sectors are; There are no financially viable existing major Toll Roads in West Africa; Restrictions placed on Concession financing by the IMF; Effect of any potential future political unrest; and PPP and Concession Agreements are new to Ghana with no previous experience for Government to rely on. Effect of any potential future political unrest was identified as the most relevant CHALLENGE with a mean of 3.76. PPP and Concession agreements are new to Ghana was the second most CHALLENGING FACTOR, with a mean score of 3.63. None of the challenges was identified as irrelevant by the respondents since they all scored a mean above 2.50

TABLE 4.9: CHALLENGES ASSOCIATED WITH THE USAGE OF PPP

CHALLENGES	Mean	Std. Deviation	Rank
Potential future political unrest	3.763	1.344	1st
PPP and Concession agreements are new to Ghana	3.632	0.913	2nd
Restrictions placed on Concession financing	3.500	1.183	3rd
Viable existing Major Toll roads	3.167	0.910	4th

4.11 TYPES OF PPP'S RESPONDENTS WORKED WITH WITHIN THE LAST DECADE

From **Table 4.10**, majority of the respondents (i.e. 54.28%) working with various sectors of road construction indicated the type of PPP's used within the last ten (10) years was the Build Operate Transfer. Build Transfer was the next mostly used type of PPP with a percentage of 14.28. Respondents who had not used any of the types of PPP's constituted 20.0%. Others representing 10.44% used both the Build Operate Transfer and Build Transfer.

Table 4.10: Types of PPP's respondents used within the last 10 years

<i>Types of PPP's</i>	<i>Frequency</i>	<i>Percentage</i>
Build Operate Transfer (BOT)	19	54.28
Build Transfer	5	14.28
Build Operate Transfer, Build Transfer and Build Own Operate Transfer	1	2.86
Build Own Operate	1	2.86
Build Operate Transfer and Build Transfer	1	2.86
Design Build Transfer	1	2.86
<i>None</i>	7	20.00
<i>Total</i>	<i>35</i>	<i>100.0</i>

Source: Field survey, 2014

4.12 KNOWLEDGE AND USE OF THE NATIONAL POLICY ON PUBLIC-PRIVATE PARTNERSHIP

From **fig 4.4** 47.5% of the respondents constituting 19 indicated use of the National Policy on Public-private partnership. 20% constituting 8 respondents agreed they have seen but not read about National Policy on Public-private partnership. 22.5% said National Policy on Public-private partnership exists but not seen. 2.5% constituting 1 respondent agreed of never hearing of it. This shows that majority of the respondents have no knowledge on the usage of National Policy on Public-private partnership.

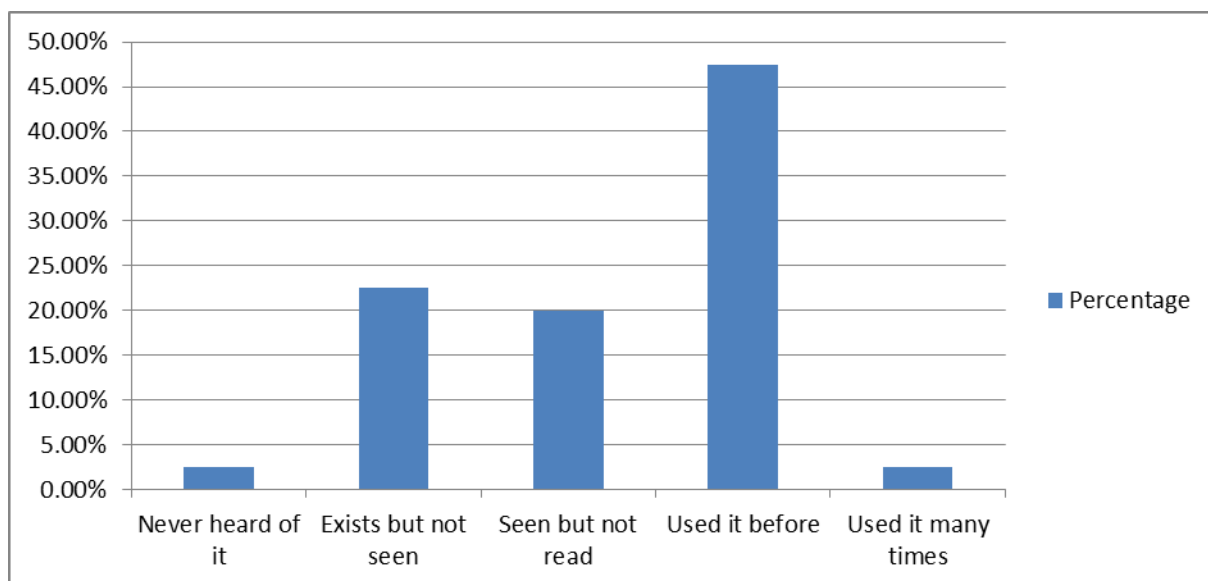


Figure 4.4: Knowledge and Use of the National Policy

4.13 INSTITUTIONAL PERFORMANCE IN THE IMPLEMENTATION OF PPP FOR THE ROAD SECTOR

Table 4.10 displays certain assessment factors in terms of Institutional performance in implementation of PPP for the road sector. Using a Likert scale of 1 to 5, where 1=Very active, 2= Active, 3=moderately high, 4=High, 5=Very High.

Any ranking that has it institution having a mean of 2.5 or above is identified as active and mean below 2.5 is marked as inactive to the professionals in the road sectors of Ghana.

From the **Table 4.11**, eight (8) institutions were identified to be relevant in the performance of implementing PPP for the road sector. The eight (8) institutions as identified from the table due to the responses of professionals in the road sectors are;

1. Ministry of Finance, 2. National Development Planning Commission, 3. Ministry of Roads and Highways, 4. Public Procurement Authority, 5. Cabinet, 6. Parliament, 7. Metropolitans, Municipalities and District Assemblies, and 8, PPP Approval Committees.

Ministry of Finance was identified as the most active institution with a mean score of 3.77. Parliament was the second most active institution with a mean score of 3.69. when it comes to the Institutional performance in implementation of PPP for the road sector, Cabinet was ranked 8th with a mean score of 3.28 and Standard deviation of 1.09. None of the institutions was identified as inactive by the respondents since they all scored a mean above 2.50.

TABLE 4.11: PERFORMANCE IN THE IMPLEMENTATION OF PPP

Institutions	Mean	Std. Deviation	Rank
Ministry of Finance	3.769	1.32708	1st
Parliament	3.694	1.28329	2nd
Ministry of Roads and Highway	3.632	1.26108	3rd
Metropolitans, Municipalities and District assemblies	3.605	1.02771	4th
Public Procurement Authority	3.500	1.15882	5th
PPP Approval Committees	3.459	1.21552	6th
National Development Planning Commission	3.378	1.11433	7th
Cabinet	3.278	1.08525	8th

4.14 POLICIES ASSOCIATED WITH PUBLIC-PRIVATE PARTNERSHIP

MODEL OF PROCUREMENT FOR ROAD INFRASTRUCTURE

Policies associated with public-private partnership model of procurement for road infrastructure have been identified in **Table 4.12** below together with the mean scores of all forty (40) respondents as well as their RII scores and ranks. These policies associated with PPP's includes Value for Money; Risk Allocation; Affordability; Local Content and Technology Transfer; Safeguarding public interest and stakeholder

rights; Clear objectives and output requirements; Stakeholder consultation; Project duration; and Risk/Responsibility avoidance. The mean scores were calculated for each policy. Respondents were asked to rank in their opinion how important to their organization is the perceived policies of PPPs listed above. A rank was provided for the factors to show which of them respondents deemed highly important to not important.

From **Table 4.12**, Value for Money preceded as the highly important factor with a mean score of 4.400 and an RII score of 0.880. This shows that all contracting entities ensuring the need to attain maximum Value for Money is key to road infrastructure. Followed by Risk Allocation (mean=4.650, RII=0.930) where Every PPP arrangement has a clear table or metrics showing the allocation of risk to the party best able to manage the risk; Risk/Responsibility avoidance (mean=4.324, RII=0.865); Clear objectives and output requirements (mean=4.077, RII=0.815) where Every Contracting Entity must seek to undertake PPP Project specifying the expected output of each project; Affordability (mean=4.050, RII=0.810); and Safeguarding public interest and stakeholder rights (mean=4.000, RII=0.800). Stakeholder consultation (mean=3.974, RII=0.795) where Contracting Entities shall ensure that adequate stakeholder consultation is carried out; Local Content and Technology Transfer (mean=3.923, RII=0.785); and Project duration (mean=3.868, RII=0.774) were deemed averagely important by the respondents in respect to their organizations.

Table 4.12: Policies associated with the usage of PPP

Assessment factors	Rating					Total	$\sum w$	Mean	RII	Rank
	1	2	3	4	5					
Value for Money	0	0	1	9	30	40	189	4.725	0.945	1st
Risk Allocation	0	0	2	10	28	40	186	4.650	0.930	2nd
Risk/Responsibility avoidance	0	3	3	10	21	37	160	4.324	0.865	3rd
Clear objectives and output requirements	0	0	11	14	14	39	159	4.077	0.815	4th
Affordability	0	0	10	18	12	40	162	4.050	0.810	5th
Safeguarding interest and rights	0	0	9	20	9	38	152	4.000	0.800	6th
Stakeholder consultation	0	1	8	21	9	39	155	3.974	0.795	7th
Local Content and Technology Transfer	0	0	13	16	10	39	153	3.923	0.785	8th
Project duration	0	0	13	17	8	38	147	3.868	0.774	9th

4.15 FACTORS PERCEIVED AS NON-BENEFICIAL WITH THE PUBLIC-PRIVATE PARTNERSHIP MODEL OF PROCUREMENT FOR ROAD SECTOR

Table 4.13 displays certain assessment factors in terms of non-beneficial with the public-private partnership model of procurement for road sector. Using a Likert scale of 1 to 5, where 1= No practical benefit, 2= Little beneficial, 3= Moderately beneficial, 4= Very beneficial, 5= Extremely beneficial. Any ranking that has it factors having a mean of 2.5 or above is identified as beneficial and mean below 2.5 is marked as non-beneficial. The main focus here is those regarded as non-beneficial to the professionals in the road sectors of Ghana.

From the **Table 4.13**, five (5) factors were identified to be beneficial with the public-private partnership model of procurement for road sector. The five (5) factors as

identified from the table due to the responses of professionals in the road sectors are;

1. PPP Policy development, dissemination, monitoring and enforcement, 2. Individual project sponsorship, design, preparation and execution, 3. Financial Management of funded and contingent obligations, 4. Gate keeping and approval functions, and 5, PPP Project advice, support and promotion.

Individual project sponsorship, design, preparation and execution was identified as having no practical benefit with a mean score of 3.62. From Table 4.12 below, Gate keeping and approval functions was the second with little benefit and has a mean score of 3.75. When it comes to benefits with the public-private partnership model of procurement for road sector, Financial Management of funded and contingent obligations was ranked the 3rd non-beneficial factor with a mean score of 3.79 and Standard deviation of 0.74. None of the factors was identified as completely non-beneficial by the respondents since they all scored a mean above 2.50.

TABLE 4.13: NON-BENEFICIAL FACTORS

Non-beneficial factors	Mean	Std. Deviation	Rank
PPP project advice, support and promotion	4.1053	0.55941	1st
PPP policy development and enforcement	3.9211	0.91183	2nd
Management of contingent obligations	3.7895	0.74100	3rd
Gate keeping and approval functions	3.7568	0.72286	4th
Individual project design and execution	3.6216	0.89292	5th

4.16 CONSIDERING PPP MODELS IN FUTURE PROJECTS

From **fig 4.5** 47.5% of the respondents constituting 19 indicated use of the Public-private partnership model of procurement for road sector in the future where necessary. 35% constituting 14 respondents agreed they are willing to try it in the near future. 7.5% said they are willing to use it only if gains knowledge. 2.5% constituting 1 respondent agreed of having no plans of using it. This shows that majority of the respondents show appreciation for the PPP and willing to use it. From Table 4.5, respondents assessed PPP model to be very beneficial and as shown in fig. 4.5, they are will to consider PPP model in their projects where necessary.

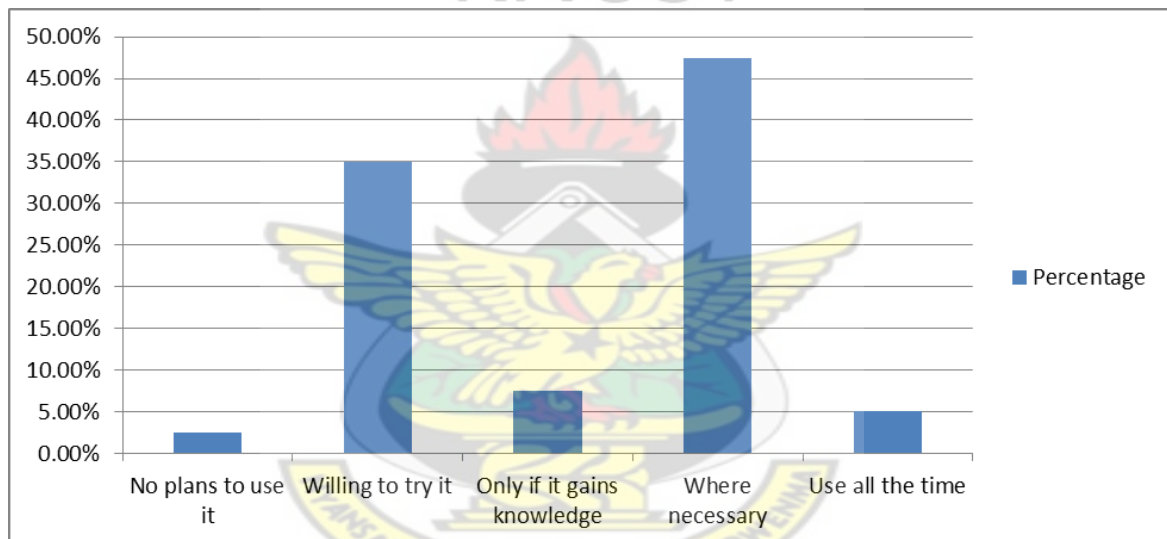


Figure 4.5: Considering PPP Models In Future Projects

4.17 Summary

Finding from the above analysis shows that, respondents gave an extensive response to the constraints for using PPP's in the road sector due to the number of years respondents have been in practice. Respondents agree to the fact there are no regulatory framework that governs the usage of PPP and suggest significant review on

the existing structures of PPP. Respondents are also willing to use PPP models when there is enough education and Publicity on the structures of PPPs.

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CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter brings the study carried out to an end. It concludes and discusses recommendations to the study. It is also the last chapter of the project that would conclude the data and analysis at the chapter 4 that is being referred to the objectives of the study. The objectives of the study were to establish the need or otherwise for using PPPs in the road sector and to identify the key constraints which affect the implementation of PPPs in the procurement of roads infrastructure in Ghana. A total of 40 questionnaires were administered to a number of professionals in the road sectors of Ghana. All of them responded. The chapter follows the following structure: a summary of how the key objectives were satisfied and discussions on the achievement of the research objectives are provided to highlight the contributions of the research. The chapter concludes with recommendations for further research that can be conducted based on the conclusions and limitations of the study.

5.2 CONCLUSIONS

As a recap on what was earlier noted in Section 1.3 of this dissertation, the aim of this study is to explore the challenges of Public Private Partnership model of procurement for road infrastructure in Ghana. In order to achieve the stated aim, two objectives were set in the same section. Literature review and survey questionnaires were conducted to achieve both Objectives.

5.2.1 Objective 1:

To identify the key challenges which affect the implementation of PPPs in the procurement of roads infrastructure in Ghana.

Key challenges to the usage of PPP's were identified from literature and respondents were asked to rank them on the basis of it being very low or very high. From the nine (9) challenges that were identified to be relevant to the usage of PPP the results indicates that Political and bureaucratic constraints (such as fragmented decision making due to the involvement of multiple public agencies) was identified as the key challenge to the usage of PPP's even though Regulatory constraints, Financial constraints, Construction risk; Design risk; Legal risk; and Methodological constraints were deemed relevant.

5.2.2 Objective 2:

To identify structural changes required to improve the success rate of PPPs.

Some changes required to improve the success rate of PPPs are that: all contracting entities shall ensure that the need to attain maximum Value for money is made paramount; every PPP arrangement should have a clear table or metrics showing the allocation of risk to the party best able to manage the risk; every contracting entity seeking to undertake PPP project shall specify the expected output of each project; and also contracting entities shall consider end-user affordability as one of the key considerations in making decisions related to the feasibility of PPP projects. Above all there should be a development, dissemination, monitoring and enforcement of a PPP Policy. Also given the low level of awareness of the PPP Policy amongst respondents, it is proposed that education on the PPP system of procurement should be integrated into the functions of one of the statutory bodies involved in the implementation of PPPs in Ghana. Finally the study showed that the Ministry of Finance had a lead role

in the identification and initiation of PPP projects. Whilst this is not wrong, it will be more helpful if more autonomous bodies were involved in the identification, initiation and implementation of PPPs.

5.3 CONCLUSION

This research work explored the constraints and challenges of Public Private Partnership model of procurement for road infrastructure in Ghana. In conclusion, the research findings seek to directly address the objectives of the study which are as follows: To identify the key challenges which affect the implementation of PPPs in the procurement of roads infrastructure in Ghana and to identify the structural changes required to improve the success rate of PPPs in Ghana.

The study identified the benefits associated with public-private partnership model of procurement for road infrastructure and it has become clear that sharing of risk by government with private sector partners and also delivery of needed infrastructure and public services on time and within budget should be accelerated. Education is needed to increase the awareness of PPP model of procurement for road infrastructure. With reference to Figure 4.5 under Chapter four, majority of the respondents are willing to use the model where necessary and if it gains more knowledge.

5.4 RECOMMENDATIONS

With reference to the above conclusion and findings from the Chapter four, the following recommendations are proposed for review and improvement.

- Education and publicity is one key factor to increase the awareness of the usage of PPP models in the procurement of road infrastructure in Ghana. From figure 4.2

of chapter four, 40% of the respondents never used PPP models of procurement while majority (47.5%) sometimes used it. There should be adequate education on PPP models of procurement in order to deepen the understanding and its relevance by all.

- Potential future political unrest which creates political constraints can be cubed when government develops long term policies that will be in support of PPP models to guide against incessant changes which usually occur anytime there is a change in leadership.
- There should be a clear policy and regulation framework for the usage of PPP models
- Government and Private Institutions involved in the usage of PPP models should ensure that procurement processes are fair, transparent and well managed.
- Private firms should work with government to ensure clear and consistent approaches to PPP across the nation
- A clear definition of value for money should be encouraged in the various road sectors in order to build up its meaning throughout the various organizations. This can motivate the usage of PPP models in procurement of road infrastructure.

5.5 LIMITATIONS OF STUDY

Time available for this research was not enough to adequately exhaust all issues available. This was so because the study was an academic study. The study is still constrained although lots of efforts have gone into planning.

REFERENCES

- Abawi, K (2008). Qualitative and Quantitative Research. *World Health Organization/Geneva Foundation for Medical Education. Reproductive Health Research Methodology Training at the Ministry of Public Health*, Kabul, Afghanistan, 3rd – 12th January, 2008.
- Aurelio M, (1998) Constraints and Opportunities for PPP Transport Project, Seminar “Public Transport: Private Sector Solution for Investment/ November 5-6, 1998 http://www.ppiaf.org/site/ppiaf/file/document/toolkit/6/highway/pdf/constraints_and_opportunities_for_PPP (Accessed 5th August, 2014)
- Bernard, H.R., Pelto, P.J., Werner, O., Boster, J., Ronney, A.K., Johnson, A., Ember C.R. and Kasakoff. A., (1986), the construction of primary data in cultural anthropology, *Current Anthropology*, Vol.27., pp. 382-396.
- Bennett, (1999) International Public procurement conference proceedings Vol. 21 -25
- Dixon, T, Pottinger, G and Jordan, A (2005), “Lessons from the private finance initiative in the UK: Benefits, problems and critical success factors”, *Journal of Property Investment & Finance* Vol. 23 No. 5, pp. 412-423 Emerald Group Publishing Limited
- Dowokpor W, (2013) Public Private Partnership in Ghana, Feature Article of 4 April, 2013. Available Online: [http:// www.ghanaweb.com/Ghana_Home_page/News_Archives/artikel.pdf](http://www.ghanaweb.com/Ghana_Home_page/News_Archives/artikel.pdf) (Accessed 1st August, 2014).
- Efraim, S., (2006) “Public Private Partnership – A Public Economic Perspective” Available Online: [http://www. Commonwealthgovernance.org/countries/Africa.pdf](http://www.Commonwealthgovernance.org/countries/Africa.pdf) (Accessed 2nd August, 2014)
- ESCSP (2011) “Public-Private-Partnership in infrastructure, A Guide Book. Available Online: [http://www. Ecod.org](http://www.Ecod.org). (Accessed 5th August, 2014
- Fugar, F.D.K. (2010). “*Research Methods*,” July 2010 edition [Handout]: Kwame Nkrumah University of Science and Technology.
- GNA, (2014) “Road Fund Sustain only 40% of Road Maintenance - Government look to PPP” Online:<http://www.election.peacefm.com/pages/politics/2014/202911.pdf> (Accessed 17th July, 2014)
- Grimsey D, (2002) “Evaluating the risks of public private partnerships for infrastructure projects,” *International Journal of Project Management* 20 107-118.
- Grout P, (2003) “Public and Private Sector Discount Rates in Public-Private Partnerships,” *The Economic Journal*, 113 C62-C68.

- Govt. of Ghana, (2011), National Policy on Public-private Partnership. Available Online: [http:// www.mofep.org.gh.pdf](http://www.mofep.org.gh.pdf) (Accessed 19th July, 2014)
- Haward H, (2005) The road to Ghana, A toll Road Infrastructure Case Study. Available Online: [http:// www.atrcl.com](http://www.atrcl.com) (Accessed 5th July, 2014)
- Klijn, E, (2000) “Public-private partnerships in the European Union. Available Online: [http:// www.atrcl.com](http://www.atrcl.com) (Accessed 25th July, 2014)
- Kathleen, B. (2007) “ New approach to PPP in the road sector; India’s Annuity Concession” Available Online: [http:// www.atrcl.com](http://www.atrcl.com) (Accessed 5th July, 2014)
- MRH, (2013) Accra-Tema Motoway Project Underway. Available Online: [http:// www.thebeatonline.com.pdf](http://www.thebeatonline.com.pdf) (Accessed 27th July, 2014)
- MOFEP, (2011) Ghana National Policy on Public Private Partnership, Policy Framework, June 2011.
- MOFEP, (2013) Ghana Public-private Partnership Draft Bill. Available Online: [http:// www.mofep.org.gh.pdf](http://www.mofep.org.gh.pdf) (Accessed 17th July, 2014)
- MOFEP, (2014) Public-private Partnership News Letter Issue No.1 Available Online: [http:// www.mofep.org.gh.pdf](http://www.mofep.org.gh.pdf) (Accessed 18th July, 2014)
- Mustafa, A, (1999) “Public-Private-Partnership: An Alternative Institutional Model Implementing the Private Finance Initiative in the Provision of Transport Infrastructure,” Journal of Project Finance Vol. 5, Issue 2.
- Naoum, S.G., (1998) “ Dissertation Research and Writing for Construction Students.”, Elsevier Butter worth Publications, London.
- Nell M, (2007) Key challenges to Public-private Partnership in South Africa. Available Online: [http:// www.thetradebeat.com](http://www.thetradebeat.com) (Accessed 28th July, 2014)
- Osborne, S. (2000), Public Private Partnerships Theory and practice in International Perspective, 1st Edition, Published by Routledge, London.
- PPIAF, (2009) PPP Modalities, toolkit for Public-private Partnership in road and Highways . Available Online: [http:// www.ppiaf.org](http://www.ppiaf.org) (Accessed 27th July, 2014)
- Pilot, D.F. and Hungler, B.P., (1999), Essentials of nursing research, J.S. Lippincott Company.
- Trevor A, (2007) Introducing Public-private Partnership in South Africa . Available Online: [http:// www.ppiaf.org](http://www.ppiaf.org) (Accessed 29th July, 2014)

Saunders, M. , Lewis, P. and Thornhill, A. , (2007), Students, 6th Edition. Pearson Education Limited.

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APPENDIX

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF ARCHITECTURE AND PLANNING

DEPARTMENT OF BUILDING TECHNOLOGY KUMASI

MSc PROCUREMENT MANAGEMENT

RESEARCH TOPIC: EXPLORING THE CHALLENGES AND STRUCTURAL CHANGES FOR EFFECTIVE IMPLEMENTATION OF PPP IN THE ROAD SECTOR.

Introduction

This questionnaire will be used by the researcher to solicit data aimed at exploring the constraints and opportunities of public-private partnership model of procurement for road infrastructure in Ghana. In essence this questionnaire will allow the researcher to quickly and realistically identify the key challenges of PPPs and establish the need for PPPs in the road sector. Averagely 10-12 minutes of your precious time would be required to fill in the questionnaire. The research is strictly for academic purposes and information given will be kept confidential.

INSTRUCTIONS: *You are please required to tick (✓) the appropriate options.*

(SECTION A) - GENERAL QUESTIONS

1. Which of the following sectors do you belong to?

Urban Roads ☐ Feeder Roads ☐ Ministry of Roads & Highways
☐
Ghana Highway Authority ☐ Consultant ☐ Contractor ☐
Others, please specify.....

2. How long have you been with the organization?

Less than 5 years ☐ 6 – 10 years ☐ 11 – 15 years ☐ above
15years ☐

3. What is your professional background?

Civil Engineer ☐ Structural Engineer ☐ Quantity Surveyor
☐
Project Manager ☐ Contract Manager ☐
Others, please specify.....

4. What major type of road construction do you manage?

Highway ☐ Urban Road ☐ Feeder Road ☐ others (please others specify).....

SECTION B - THE NEED FOR USING PUBLIC-PRIVATE PARTNERSHIP IN THE ROAD SECTOR

5. To what extent does your outfit use the Public-private partnership (PPP) model in the Procurement of road infrastructure?

Never ☐ Sometimes ☐ Often ☐ Very Often ☐

6. The following have been identified as the benefits associated with public-private partnership model of procurement for road infrastructure.

What level of importance to your organization is the perceived benefit of PPPs listed below? Please ranking from 1-5, where: 1 - Not Important, 2 - Least Important, 3 - Averagely Important, 4 -Very Important, 5 - Highly Important.

Please use the spaces below the table to add any other benefits.

Assessment factors	1	2	3	4	5
Accelerated delivery of needed infrastructure and public services on time and within budget.					
Encouraging the private sector to provide innovative design, technology and financing structures.					
Increased international and domestic investment.					
Risk sharing by government with private sector partners.					
Ensuring good quality public services and their wider availability.					
Real financial benefits reflected in reduction in the initial public capital outlay, and a better utilization and allocation of public funds.					
Economic growth and Increased and wider employment possibilities.					
Others(please specify)					

7. To what extent will you assess the benefits of the PPP, in the procurement of road infrastructure projects in Ghana?

No practical benefit [] Very little benefit [] Moderate benefit []
Beneficial [] Very beneficial []

8. How effective is the PPP to procurement of road infrastructure in Ghana?

Not effective at all [] Little effective [] Moderately effective []
Effective [] Very effective []

9. What improvements in your opinion do you think should be made to make the existing structures of PPP more useful to the Ghanaian road sector?

Requires no modification [] Requires some modification []
Requires quite a bit of modification [] Requires significant review []

]

(SECTION C) - CONSTRAINTS THAT AFFECT IMPLEMENTATION OF PUBLIC PRIVATE PARTNERSHIP (PPP) IN THE ROAD SECTOR

10. How would you rate the public-private partnership model of procurement for road projects as to whether they meet the following project requirements? Key : 1 = Very Low 2 = Low 3 = Moderately High 4 = High 5 = Very High

Requirements	1	2	3	4	5
Life cycle cost to deliver, operate and maintain the road over a long period					
Value for money and service delivery level					
Meeting Government and public expectation					

11. How would you rank the following in the terms of constraints to the usage of PPP? Key: 1= Very low 2= low 3= moderately high 4=high 5 =Very high.

ASSESSMENT FACTORS	1	2	3	4	5
Political and bureaucratic constraints (such as fragmented decision making due to the involvement of multiple public agencies).					
Regulatory constraints (unclear regulatory procedures, and the lack of, or deficient, framework for the resolution of disputes)					
Financial constraints (public budgetary limits and hesitant users' charges policies).					
Methodological constraints (limited knowledge of inter-relationships between variables which prevent the clear definition of performance indicators).					
Others(please specify)					

12. To what extent would you rate the following challenges associated with the public –private partnership model of procurement for road infrastructure? Key:1= Not Severe 2 = Less Severe 3 = Moderately Severe 4 = Severe 5 = Very Severe
Please use the spaces below to add any more challenges.

Challenges	1	2	3	4	5
There are no financially viable existing major Toll Roads in West Africa					
Restrictions placed on Concession financing by the IMF					
Effect of any potential future political unrest					
PPP and Concession Agreements are new to Ghana with no previous experience for Government to rely on					
Others(please specify)					

13. Which of the Public-private partnership types have you used in executing road works within the last 10 years? Please indicate as many as you have used

Build Operate Transfer (BOT) []
 Build Transfer (BT) []
 Build Own Operate Transfer (BOOT) []
 Build Own Operate (BOO) []
 Rehabilitate Own Operate Transfer (ROOT) []
 Others, please specify.....

SECTION D – POLICIES AND STRUCTURES ASSESSMENT

14. How do you assess your knowledge, awareness and use of the National Policy on Public-private partnership?

Never heard of it [] I know it exists but have not seen it [] Seen a copy but never read or used it [] Used it before [] Used it many times []

15. How would you assess the following in the terms of Institutional performance in implementation of PPP for the road sector? Key: 1= Very active 2= active 3= moderately high 4=high 5 =Very high.

ASSESSMENT FACTORS	1	2	3	4	5
Ministry of Finance					
National Development Planning Commission (NDPC)					
Ministry of Roads and Highways.					
Public Procurement Authority					
Cabinet					
Parliament					
Metropolitans, Municipalities and District Assemblies					
PPP Approval Committees					

16. The following have been identified as the policies associated with public-private partnership model of procurement for road infrastructure. What level of importance to your organization is the perceived policies of PPPs listed below? Please ranking from 1-5, where: 1 - Not Important, 2 - Least Important, 3 - Averagely Important, 4 -Very Important, 5 - Highly Important.

Assessment factors	1	2	3	4	5
Value for Money (All contracting entities shall ensure that the need to attain maximum Value for Money is made paramount)					
Risk Allocation (Every PPP arrangement shall have a clear table or metrics showing the allocation of risk to the party best able to manage the risk)					
Affordability (Contracting Entities shall consider end-user affordability as one of the key considerations in making decisions related to the feasibility of PPP Projects.)					
Local Content and Technology Transfer (In structuring PPP projects Contracting Entities shall comply with prevailing Government's policies on local content).					
Safeguarding public interest and stakeholder rights					
Clear objectives and output requirements (Every Contracting Entity seeking to undertake PPP Project shall specified the expected output of each project).					
Stakeholder consultation (Contracting Entities shall ensure that adequate stakeholder consultation is carried out).					
Project duration					
Risk/Responsibility avoidance					
Others(please specify)					

17. Which of the following do you perceive as non-beneficial with the public-private partnership model of procurement for road sector?

Please rank them on the scale 1-5, where: 1= No practical benefit, 2= Little beneficial, 3=Moderately beneficial, 4= Very beneficial, 5= extremely beneficial.

Assessment factors	1	2	3	4	5
PPP Policy development, dissemination, monitoring and enforcement					
Individual project sponsorship, design, preparation and execution					
Financial Management of funded and contingent obligations					
Gate keeping and approval functions					
PPP Project advice, support and promotion.					

18. How prepared are you to consider public-private partnership model of procurement for road infrastructure in your future project?

- No plans to use it []
- Willing to try it []
- May use it if it gains more knowledge []
- Use it where necessary []
- Use all the time []

THANK YOU

