A Critical Evaluation of Bankable Feasibility Study in A PPPs Transaction for Tertiary Institutions' Infrastructure Development in Nigeria

ADAMU MUDI

Department of Quantity Surveying, School of Environmental Studies, The Federal Polytechnic Offa, Nigeria

Abstract- ***Adequate and reliable bankable project feasibility study according to Adamu et al. (2015) determines the private sectors investment interest in a PPPs transaction which centers around project demand forecast taking into account the willingness to pay, inter and intra-model competition, ramp-up effects, and long-term macro-economic effect and population growth rate. In order to achieve this, WEF (2013) noted that public sector needs to determine the project technical specifications, and also carry out a detail cost benefit analysis so as to determine the project's commercial viability to be followed by proactive and professionalized stakeholder engagement. Efforts must also be made to mitigate the social and environmental impact of the proposed infrastructure. This is very essential in determining the bankability of any infrastructure development. This study is aimed at assessing the effectiveness of bankable feasibility study and factors affecting bankability of tertiary institutions infrastructure development under PPP concession in Nigeria. In order to achieve this aim, the study examined the concept of PPPs models for infrastructure development and bankable feasibility process in a PPP framework. Data collection was through administration of well-structured questionnaire on the target population. Data collected were analysed using both descriptive and inferential statistic analytical techniques. The study revealed that there is urgent need to review the current Nigeria National Policy on PPP, institutional structure and individual capacity building in the area of PPPs project preparation in order to encourage more private sector participation in the drive for provision and development of road infrastructure facility.***

Indexed Terms- ***Public-Private Partnership, Development, Project, Bankable, Feasibility Study***

I. INTRODUCTION

The drivers behind the global implementation of PPP strategies in infrastructure development according to Wamuziri & Jiang, (2008); and Kwak *et al*. (2009) are hinged on the need by the public sector in meeting the high infrastructure demand by the populace, improve service delivery to the public, and steer the economic growth. However, Ijigah *et al* (2012) and Amobi (2013) cited in Adamu (2016) reiterated that the most pressing infrastructure development challenges under PPPs in Nigeria are lack of effective PPPs project preparation and acceleration towards bankability, while the development investors also held substantial assets in infrastructure project under their management, for which they will be seeking attractive long-term infrastructure investment opportunities in the infrastructure project. As a result of this, many infrastructure projects became stalled in the project pipeline.

Hence the major reason for the adoption of Public-Private Partnerships for tertiary institutions infrastructure development according to Flyvbjerg *et al*. (2003) cited in WEF (2013) is that the traditional public delivery of infrastructure projects has often proved to be disappointing in many countries of the world because many of the infrastructure projects procured under the traditional models regularly experience cost and time overruns, as well as disregarding the resulting life-cycle costs of the infrastructure project. Examples of such challenges of the traditional delivery model was shown in a survey of major rail and road projects in Europe and North-America in the year between 1927-1998 where an average overruns of 28% of the contract sum was experienced.

II. PPPs CONCEPTS FOR INFRASTRUCTURE DEVELOPMENT

Globally, the Public-Private Partnerships (PPPs) approach to infrastructure development and maintenance has continued to grow tremendously as a result of the financial constraints being experienced by public sectors in the provision of required infrastructure facilities. In practice according to Lubi & Majid (2013), most governments adopt PPPs principles as a matter of ideological persuasion and need by implementing and utilizing private sector expertise to lever greater efficiency and change management in infrastructure provision thereby boosting social-economic growth and development. Because according to Muralidhar & Koteswaea (2013), Public-Private Partnerships provides opportunity for private sector participation in financing, designing, construction, operating and maintenance of public sector services, programmes and projects. Hence the creation of a structure that is bankable and to minimize the stakeholder's risk by allocating certain risks to parties that can better manage the risks in the infrastructure development.

Cui *et al*. (2010), described Public-Private Partnerships as an agreement between a public agency (Federal, State and Local Governments) and a private sector in a contractual manner. Furthermore Cui *et al.* (2010) stated that the PPP arrangement involves bringing in creative skills and management efficiency from business practice and by reducing government risk involvement in the development and provision of public services by using private companies for effective approach in enhancing project delivery. For example by providing a right-of-way and the right to collect user fees by the public sector while the private partner also provides financing, technological innovation, and on-going services or infrastructure. Similarly, Lubis & Majid, (2013) stated that the World Bank also gave a broad definition of Public-Private Partnerships as a procurement strategy covering management and operating contracts, lease/*affermage*, concessions and joint ventures as well as partial divesture of public assets. Bult-Spiering & Dewulf (2006) and Ibrahim *et al*. (2006) stated that practices such as Joint Venture (JVs) and Build-Own-Transfer (BOT) strategies and its several variants, which hitherto do not qualify as Public-Private Partnerships have evolved to involve some of the core features of partnerships such as shared authority and responsibility, joint investment, sharing liability/risk-taking and mutual benefits, and are now accordingly considered as such. The partnership variants are commonly used in the global construction industry in procuring infrastructure facilities which are classified as: Develop and Construct; Package Deal; Turn-Key; Management Contracting; Construction Management; Design-Build-Operate; Build-Own-Operate; Build-Own-Operate-Transfer; Lease and Operate Contract; Buy-Build-Operate; Build-Own-Operate-Transfer; and Design-Build-Operate-Finance (Akintoye & Beck, 2009; Babatunde *et al*., 2010; Ojo *et al*., 2011; Adamu *et al.*, 2015). Meanwhile, the primary objective of PPPs is to facilitate the economic delivery of high-quality public facilities and services by the private sector over an extended period of time at a cost that represents value for money, whilst at the same time transferring an appropriate level of risk to the private sector (Lane & Gardiner, 2003; Ibrahim *et al*., 2006; Haran *et al.*, 2013).

On the implementation of PPPs, Cui *et al.* (2010) noted that PPP has a long history in many countries of the world, but became more popular worldwide in the 1980s. Furthermore Cui & Lindly (2010) cited in Cui *et al.* (2010) opined that United Kingdom and Australia are widely recognized as forerunners in the implementation of PFI in the world having been employing PFI strategies in various sectors of facility development and maintenance since the 1980s. In a related development according to Cui & Lindly (2010), in the United State of America due to an increasing funding shortfall in the transportation sector, more states have started to embrace PPPs in the development and maintenance of transportation infrastructure.

According to BPD (2009), Public-Private Partnerships (PPPs) has four key characteristics which includes;

- Involvement in an efficacious sharing of risks between public and private sector;
- Providing public services;
- Offering value for money; and
- Long term partnership over many years.

The PPPs arrangements involve competitive tendering while successful bidder (or franchisee) is selected on the basis of the value for money (VfM) outcome from the investment for public sector. VfM

is determined using both quantitative and qualitative criteria (Smyth & Edkins, 2007). Quantitative analysis involves the comparison of private investor's bids with a risk-weighted model often referred to as "public sector comparator" (PSC) after adjustment for competitive neutrality, risk transfer, and retention (European Commission, 2003). Similarly, the qualitative test examines or assess the bidding consortium's capabilities and track record, the innovation and new technology brought in for delivery solution, and a comprehensive public interest test.

III. PROJECT BANKABLE FEASIBILITY STUDY

According to WEF (2013) and Omisore (2014), in conducting a PPPs project's feasibility study, the public sector needs a clear picture of the technical scope, commercial attractiveness and the project prerequisites in area of social, economic, financial, technical, environmental and administrative factors by forecasting the demand that the feasibility will attract which requires a robust and unbiased approach, ensuring that the technical specifications are innovation-friendly, realistic and cost-conscious. Furthermore WEF (2013) opined that for a PPP infrastructure to be bankable user charges and other funding sources of the road project need to be a major focus in the feasibility study and the subsequent testing of the infrastructure project's bankability through internal business-case analysis and external market sounding. Figure 1.1 depicts the features of PPPs bankable feasibility study.

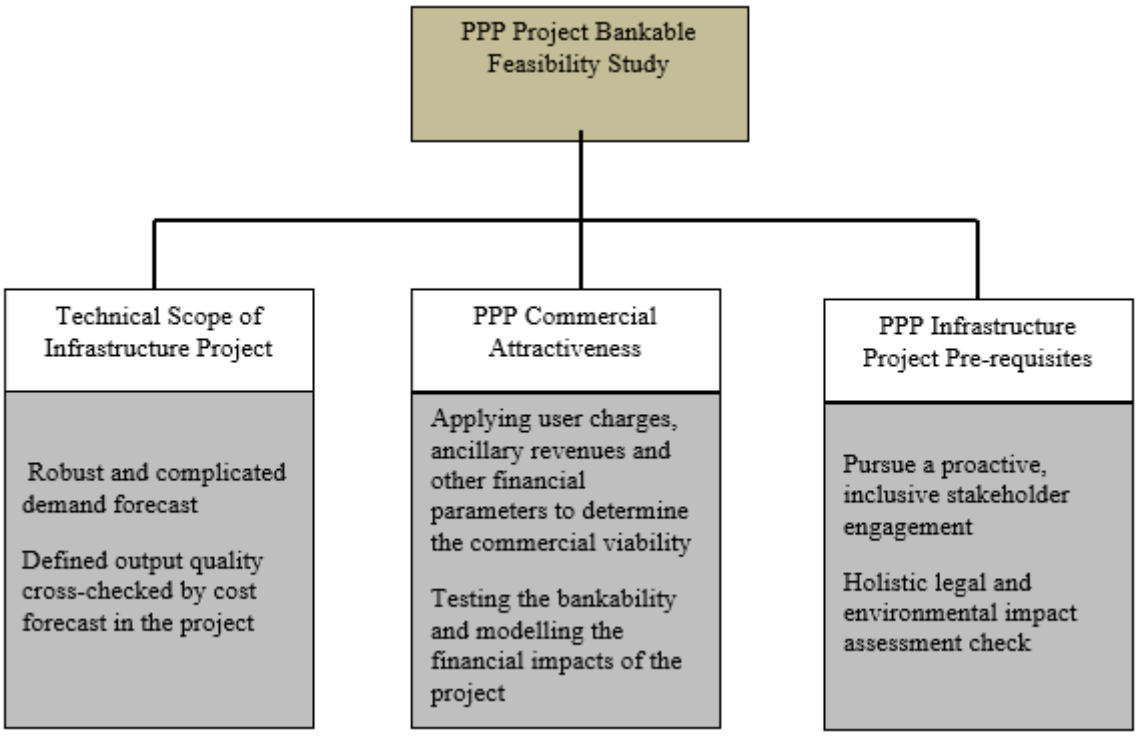

Figure 1.1: Bankable PPP Infrastructure Project Feasibility Study

IV. FACTORS AFFECTING BANKABILITY OF INFRASTRUCTURE PROJECT DEVELOPMENT

In a related development, Omisore (2014) in a study on bankable PPPs infrastructure projects in Nigeria enumerated the major factors affecting bankability of infrastructure projects in Nigeria to include; (i) legal and regulatory framework; (ii) political risk; (iii) macro-economic factors,; (iv) tariff sustainability; (v) size and location of the infrastructure projects; and (vi) fiscal space. These factors clearly explained the reasons why the private sectors are not keen on investing in PPP projects in Nigeria see figure 1.2. In view of this, Okonjo-Iweala (2014) and Omisore (2014) reiterated that the current PPPs framework for infrastructure development in Nigeria needs to be reviewed in order to enhance the effectiveness and efficiency of

the existing PPPs framework in the development of infrastructure in Nigeria.

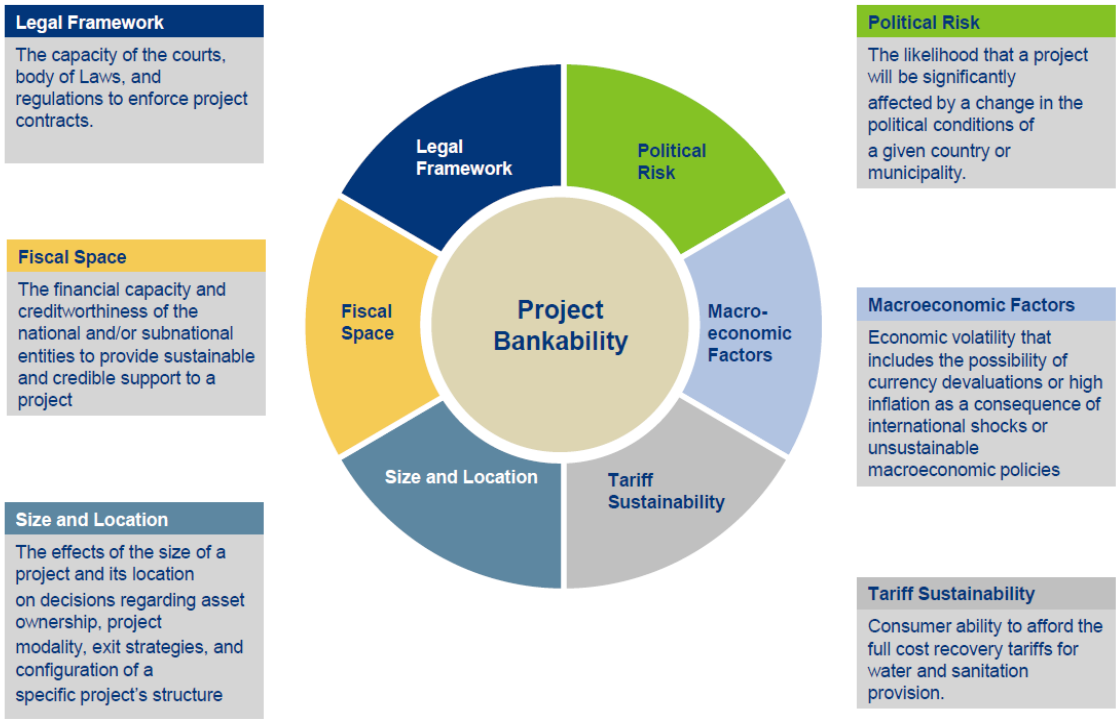

Figure 1.2: Factors Affecting Bankability of Infrastructure Development in Nigeria

V. RESEARCH METHODOLOGY

Drawing from review of relevant literature which involves various epistemological paradigms leading to adoption of quantitative research approach, data collected through structured questionnaire were analysed using quantitative analytical procedures. The results from the analysed data were interpreted in the study.

In order to obtain an effective measurement tool, the questionnaire was revised in two stages i.e. pre-test and pilot study for a better understanding of various questions therein by the respondents. The pre-test process utilized a convenience sampling method by selecting 20 respondents who were assumed to have been involved in infrastructure development through PPPs in Nigeria for an in-depth interview. The result of these interviews revealed that the meaning and interpretation of some questions in the proposed questionnaire was unclear. Sentences and wordings of the questions were therefore rephrased while different relevant terms were used.

A total of 320 questionnaires were distributed through a convenience sampling method, after eliminating all the invalid questionnaires, a total of 276 valid questionnaires representing a return rate of 86% of the distributed questionnaires were found suitable and considered sufficient for the study which was subsequently analysed (see table 1.1).

Table 1.1: Valid Questionnaires from Respondents

Respondents	FCT	Kogi	Nasarawa	Niger	Plateau	Kwara	Total
Public Agencies-MDAs	25	6	7	5	6	5	54
Concessionaires	20	10	9	10	5	5	59
Banks-Lenders/Sponsors	15	8	6	5	3	3	40
Architects	10	4	4	3	2	2	25
Engineers	14	5	5	7	6	5	42
Quantity Surveyors	28	6	5	7	5	5	56
Total	112	39	36	37	27	25	276

VI. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Data collected from the empirical survey was analysed using both descriptive and inferential statistic analytical techniques. In the descriptive statistics, data were analysed as uni-variants inform of measures of central tendency, percentiles, and bar-charts, were used in analysing professional competency of the respondents and the general expert opinion of the respondents on the implementation of PPPs for infrastructure development while the inferential statistics was carried out using Mean Score (MS).

The application of means score (MS) involves allocating numerical values to respondents' variables ranking for example; highly significant, highly important, highly frequent, highly effective, and excellent at 5 point, very significant, very important, very frequent, very effective, good at 4 point, significant, important, frequent, effective, and average at 3 point, slightly significant, slightly important, slightly frequent, slightly effective, and fair at 2 point, and not significant, not important, not frequent, not effective, and poor at 1 point. The mean score (MS) for each ranked factors are then calculated from the equation bellow;

$$MS = \sum \frac{(fxs)}{N} \qquad 1 \leq MS \leq 5 \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1.1$$

Where s stands for the given score of each factor as ranked by the respondents while the ranges depend on the ordinal scale in use for the ranking i.e. 1-5; similarly, f is the frequency of responses to each ranking of 1-5 values for each variables and N stands for the total number of responses relating the variables.

Figures 1.3 and 1.4 depict the professional working experience of the respondents and also the numbers of road projects handled within their respective years of professional experience. The aim is to assess professional competency of the respondents in the subject area of the research work. The summary of the survey in the figure shows that a total of 82 out of the 276 respondents have between 21-25 years of professional working experience which stands at 29.7% of the total respondents, while 77 respondents have between 26-30 years of professional working experience which also stands at 27.9%. This clearly indicates that over 57.6% of the respondents have acquired reasonable and adequate years of professional working experience in infrastructure development under PPP concession. In a related development, figure 1.4 indicate that a total of 82 and 86 respondents have handled between 21 and 25; and above 30 infrastructure development under PPP concession respectively under survey. These also indicate that reasonable number of the respondents have been involved in sufficient number of infrastructure development under PPP concession thereby acquiring adequate knowledge in PPP transactions. In view of this, the above information therefore clearly confirms that the respondents have adequate and or sufficient knowledge and experience in PPP transaction whilst the data provided by the respondents are adjudged to be suitable and reliable for the purposes of analysis in this research work.

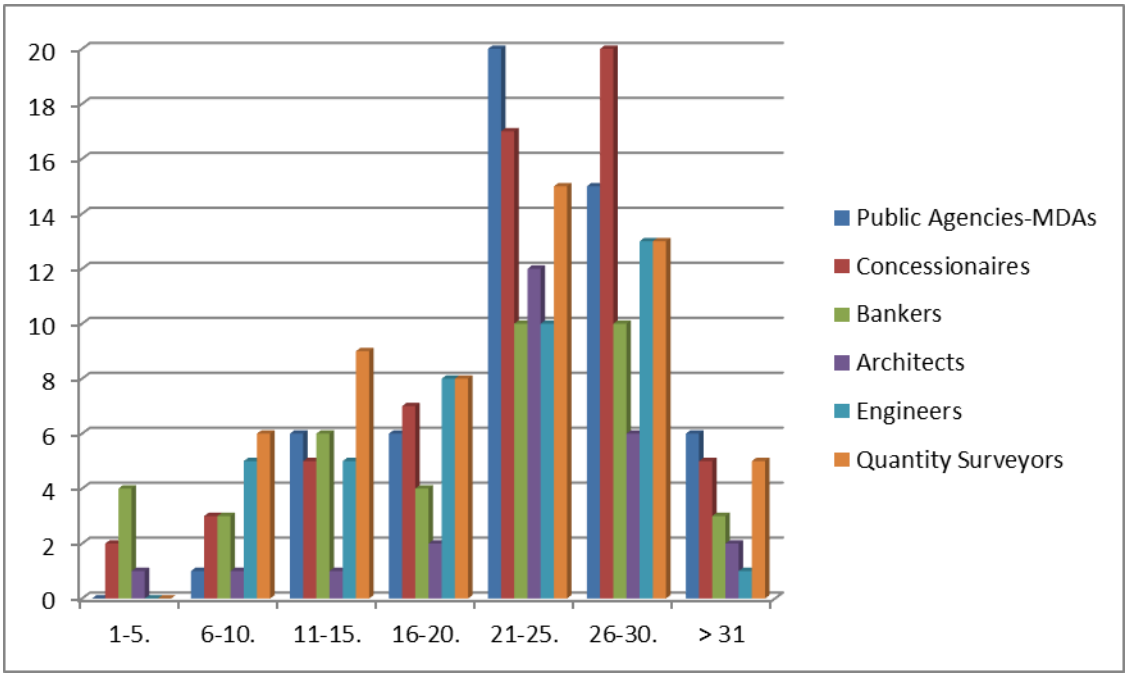

Fig 1.3: Respondents Years of Experience

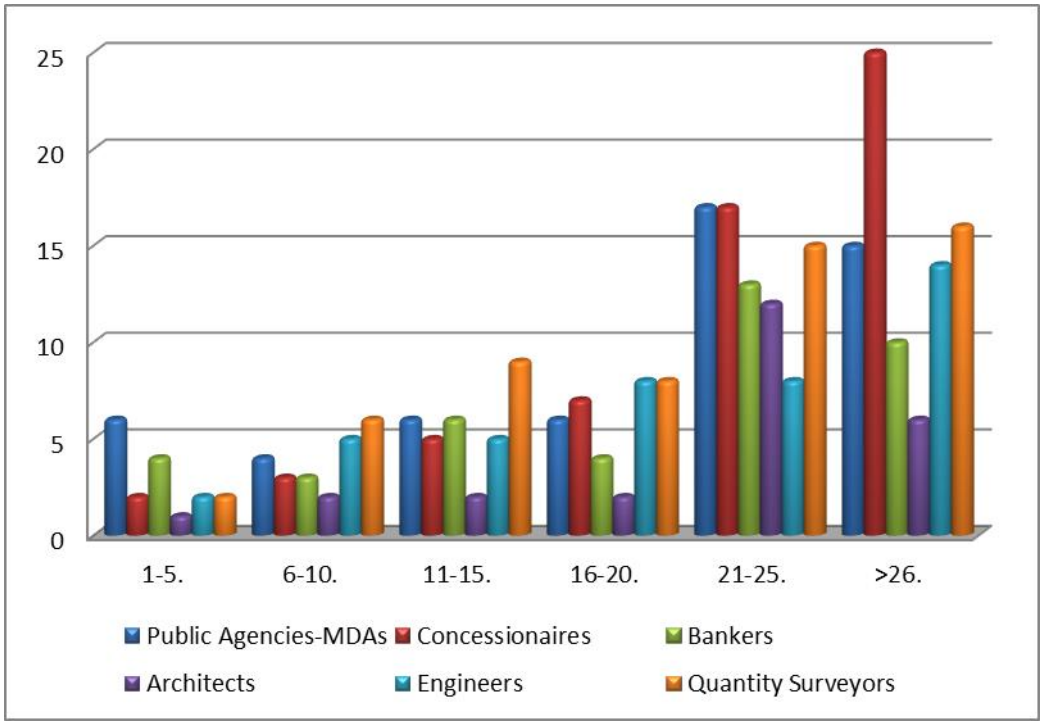

Figure 1.4: PPP Infrastructure Project Handled by Respondents

Table 1.2 depicts the expert opinion on the assessment of the effectiveness of bankable feasibility study for infrastructure development in Nigeria. It is evidenced from the table that bankability study for road infrastructure development in the study area is just slightly above average. The first five variables were having a MS of 2.00; 2.05; 2.23; and 2.28, while the lowest rated variable has a MS of 1.90.

However, it is evidenced from review of literature that bankable feasibility study stands to be very important element under PPP concession since the result of the study determines the funding status of any infrastructure development. To this end, the respondents believed that bankable feasibility studies for road infrastructure development under survey need to be improved upon in order to achieve the road project objective as well as PPP objectives

in the road development. This assertion is supported by the view of Omisore (2014) where the researcher noted the ineffectiveness of bankable feasibility study is the major reason why private investors are not keen in investing in most infrastructure development in Nigeria.

Table 1.2: Bankable Feasibility Study for Infrastructure Development in Nigeria

Bankable Feasibility Study Criterial	Respondents Mean Score on Bankable Feasibility Study						Rank
	1	2	3	4	5	MS	
• Demand forecasting	15	14	9	0	2	2.00	4
• Technical specification	7	21	9	2	1	2.23	2
• User's and other charges	15	19	3	1	2	1.90	5
• Bankability Test	7	20	9	3	1	2.28	1
• Stakeholders engagement	10	20	8	2	0	2.05	3
• Legal diligent due and permits	11	13	12	2	2	2.28	1

Table 1.3 depicts expert opinion on major factors affecting bankability of infrastructure development in Nigeria. It is evidenced from the table that the first five factors that affects bankability of infrastructure development in the research work includes unsustainable macro-economic policies, government legislation, government priority, credit worthiness of government, regulatory mechanism, financial capacity of government, and affordability of full cost tariff. These variables have the following as their MS 4.53, 4.40, 4.40, 4.40, 4.35, 4.30, and 4.28.

Review of literature revealed that funding of PPP project depends solely on the bankability of the said infrastructure project by meeting certain criterial or conditions, it is therefore very clear from the respondents' assessment in table 1.3 that many factors affects the bankability of infrastructure development in Nigeria as indicated in the respondents assessment having ranked the variables very high above average. It is clearly evidenced that the unsustainable macro-economic policy of the Federal Government of is a major setback in funding infrastructure development, the second group of factors affecting bankability of infrastructure development are government legislation this is very poor and weak in its implementation; government priority, the inability of the government or public sector setting their priority is another major challenge in this direction, credit worthiness and regulatory mechanisms of the public sector is also a source of major impediment to source of finance for infrastructure development. The other two major factors affecting bankability of infrastructure development in the study area based on the respondent assessment are financial capacity of the public sector and affordability of full cost tariff.

Table 1.3: Factors affecting Bankability of Infrastructure Development in Nigeria

Bankability Effects	Respondents Mean Score on Factors Affecting Bankability of Infrastructure Development						Rank
	1	2	3	4	5	MS	
Government legislation	0	1	3	15	21	4.40	2
Regulatory Mechanism	0	1	4	15	20	4.35	3
Change in Government	0	2	1	23	14	4.23	6
Government Priority	1	2	1	12	24	4.40	2
Fiscal Capacity of Government							
Credit worthiness of Government							

Economic Volatility of the nation							
Unstable Macroeconomic Policies	0	0	3	22	15	4.30	4
Project Sizes	1	0	5	10	24	4.40	2
Project Location							
End User's Satisfaction	0	1	2	26	11	4.18	7
Affordability of full Cost Tariff	0	1	4	8	27	4.53	1
	0	3	5	25	7	3.90	10
	0	2	13	9	16	3.98	8
	0	3	4	26	7	3.93	9
	0	0	10	9	21	4.28	5

CONCLUSION AND RECOMMENDATION

This study has explored the concept and implementation of PPP models in the provision and development of infrastructure facilities as an alternative procurement method to traditional procurement method in an attempt to measure up with the demand for more infrastructures by the teeming Nigeria populace. However, in spite of the efforts of Nigerian government at encouraging private sector participation in the development and provision of infrastructure facilities, the ambition was impacted by many challenges of ineffective bankable feasibility studies and certain inhibiting factors affecting the bankability of infrastructure project development as evidenced in the empirical survey conducted in the course of the study.

In order to achieve the aim of the research work, the study started with the review of relevant literature on concept and adoption of PPP models for infrastructure development in Nigeria with emphasis on assessing the effectiveness of bankable feasibility study process and factors affecting the bankability of road infrastructure development. Quantitative research method was employed in the study; data collection was through administration of well-structured questionnaire on the target population. Data collected was analysed using both descriptive and inferential statistic analytical techniques.

The study revealed that there is urgent need for the Federal Government of Nigeria to enhance the current bankable feasibility study process in line with Nigeria National Policy on PPP gear toward eliminating the inhibiting factors affecting bankability of infrastructure development in order to encourage more private sector participation in the drive for provision and development of infrastructure facilities in Nigeria.

The study therefore recommends that the Federal Government of Nigeria should take a giant step in reviewing the current National Policy on PPP and development or formulation of a sustainable and robust PPP framework in order to enhance the provision of infrastructure facilities which serves as the bedrock to national economic growth.

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