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PPP Enabling Environment for Polytechnic Infrastructure Development in Nigeria

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ABSTRACT
The key elements of PPP strategy in practice according to Adamu (2016) include; the PPP policy, legal regulatory structure and the institutional structure, although WEF (2013) noted that PPP implementation can only thrive effectively under an effective enabling environment, rigorous project preparation process, adequate and reliable bankable feasibility study, and a well-structured and balanced project risk allocation. In view of this, WEF (2013) and Adamu et al. (2015) noted that in providing an effective PPP enabling environment, the public sector needs to prepare itself in the following areas; legislation institutions and capacity building through a robust legal regulatory and institutional structure alongside an independent regulatory function and a reliable dispute resolution process.
This study is aimed at assessing the roles and responsibilities of both the public and private sectors in provision of a sustainable and effective enabling environment for PPP transaction in the development of polytechnic infrastructure in Nigeria. In order to achieve this aim, the study examined the concept and adoption of PPP models for infrastructure development in Nigeria with emphasis on the Nigeria National Policy on PPP in the area of PPP enabling environment, the roles and responsibilities of both the public and private sectors in the provision of an effective PPP enabling environment, and its impact on infrastructure development in Nigerian Polytechnic. Data collection was through administration of well-structured questionnaire on the target population. Data collected were analyzed using both descriptive and inferential statistic analytical techniques.
The study revealed that there is urgent need for the Federal Government of Nigeria to review the current Nigeria National Policy on PPP most especially in the area of PPP enabling environment in order to encourage more private sector participation in the drive for provision and development of Polytechnic Infrastructure Facility.
Keywords: Public-Private Partnerships, Enabling Environment, Infrastructure, Development

I. BACKGROUND

According to Amobi (2013), infrastructure plays a vital role in the economic well-being of any nation in the world. Therefore, the provision of infrastructure facility has become very essential going by the fast growing rate of the population and rural-urban migration experience in Nigeria, but the Federal Government of Nigeria has failed in its duty in the provision of the required and adequate infrastructure within the time, cost and required quality needed for human and socio-economic development as a result of the procurement factors impacting on the development process employed for infrastructure under the traditional procurement strategy in Nigerian tertiary institutions. Akintoye (2009) therefore opined that this challenge could be overwhelming as a result of the financial constraints experienced by Federal government in Nigeria and while the demand for more infrastructure is being driven largely by both economic and population growth in Nigerian tertiary institutions, in order to address these development challenges, a development strategy different from the traditional approach seems a more optimal route in our tertiary institutions. The reason for this according to Akintoye (2009) is that the characteristics and the need for more infrastructure facilities in Nigerian Polytechnics require shifting of attention from the traditional procurement strategy to Public-Private Partnerships (PPPs) like lease contract or concession in development and maintenance of infrastructure facilities in Nigerian tertiary institutions especially in the Polytechnic sector.

Public-Private Partnerships (PPPs) according to Howes & Tah (2003) and Akintoye, (2009) involves public bodies (government) and private companies in the provision of services in

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order to sustain the social-economic development of a country. Therefore, the adoption of Public-Private Partnerships (PPPs) by both the Federal and State Government of Nigeria was aimed at accelerating infrastructure project development, delivery and operation by tapping the private sector's financial resources, technical skills and financial risk management expertise in area of designing, constructing and operating infrastructure projects effectively and efficiently on a whole life-cycle cost basis in a way that will represent the best real value for money invested in the infrastructure projects by both the public and private sectors while ensuring that the private sector performs to the agreed KPIs in the provision of the required infrastructure facilities as agreed in the PPP concession. To this end, PPPs are therefore seen as the financial and procurement model which enable the public sector to utilise the private sector's financial resources in the provision of infrastructural facilities. (World Economic Forum, 2013; Soyeju 2013).

However, in Nigeria, many of the infrastructure facilities procured through PPPs have failed in term of its effectiveness and efficiency as a result of poor PPP enabling environment resulting from the complex ownership and responsibilities of both the public and private sectors which leads to a convoluted process of funding Polytechnic infrastructure facility projects in Nigeria (Sanusi, 2012; Business Monitor, 2014; Okonjo-Iweala, 2014). Although Obozuwa (2013) noted that the Nigeria National Policy on PPP was developed to regulate and monitor relevant institutions so that private sector can play a greater role in the provision and maintenance of infrastructure facilities, whilst ministries and other public authorities will focus on planning and structuring the infrastructure projects. The expectation of the Nigerian Government is that the private sector participation in infrastructure development and maintenance through PPPs will enhance efficiency, broaden access, and improve quality and standard of the Polytechnic infrastructure facilities. However, this has not yielded much benefiting results as evidenced in many of the Nigerian Polytechnic's infrastructure development.

II. LITERATURE REVIEW

Since the inception of the fourth democratic government in Nigeria in May 1999 according to Soyeju (2013) the Federal Government of Nigeria had embarked on an extensive drive in the liberalisation and privatisation program by encouraging private sector participation in the provision of quality infrastructure facilities in Nigeria so as to move Nigeria to the status of top 20 economies by the year 2020. In the year 2007, the Federal Government of Nigeria articulated its agenda making infrastructure development and its provision through PPP a priority but the ambition was impacted by many challenges such as (i) problem of transparency in the selection of concessionaire, (ii) poor project preparation and lack of bankable feasibility studies, financial models and business plans, (iii) lack of knowledge of PPP legislation, (iv) ill experienced PPP institutions at both Federal and State levels in ensuring quality, and (v) lack of experience in concession agreement (African Development Bank, 2010). In a related development, the Infrastructure Concession Regulatory Commission (2012) also reported that the early PPP experiences in infrastructure project development in Nigeria have been both promising and sobering where some of the infrastructure projects have proven to be financially viable with social and economic benefits, while other road projects have been plagued by delays, cost overruns or renegotiations as a result an ineffective PPP framework which were attributed to inadequate PPP environment.

In recognition of these enormous challenges, the Federal Government of Nigeria made a great progress by establishing certain mechanisms that will enhance the effectiveness of PPP model implementation in Nigeria. These mechanisms include the adoption of the Infrastructure Concession Regulatory Commission (ICRC) Act 2005 and the subsequent creation of the ICRC office; the enactment of National Policy on PPP in the year 2009 and the formulation of Public-Private Partnership Regulations in 2011. These mechanisms are geared towards dealing with current and the impending challenges facing the development and management of infrastructure project under PPPs in Nigerian construction industry (Sanusi, 2012).

However, in spite of the government efforts at eliminating some of the PPP challenges in infrastructure development, Ameh et al. (2010) noted that both public and private investors in infrastructure project are becoming concerned at having many of the infrastructure projects in Nigeria being completed at very high cost, longer duration and substandard. These challenges according to Ameh et al. (2010) and Adamu et al. (2015) have been attributed to lack of a sustainable PPP enabling environment. These challenges include:

i. Poor legal regulatory structure;
ii. Inadequate institutional structure;

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iii. Access to finance for PPP transaction;
iv. Local industry development;
v. Transparency and anti-corruption strategies and rules; and
vi. Communication problem and information dissemination.

Ndubisi (2012) and Amobi (2013) further noted that ill performance of the infrastructure development process, lack of capacity and political will in enforcing the existing governance framework for Public-Private Partnerships (PPPs) in the Nigeria National Policy on PPP are key factors affecting PPP implementation in Nigeria. To this end, Ndubisi (2012) and Adamu (2016) reviewed some infrastructure projects procured under PPPs and identified issues and challenges of PPP framework which are traced to inadequate PPP enabling environment in Nigeria to include:

i. lack of national infrastructure blueprint;
ii. unclear political direction and support;
iii. weak regulatory and enforcement powers of ICRC;
iv. inadequate financial modelling to enable proper affordability and value for money assessments;
v. technical capacity gaps;
vi. lack of an institutional framework for PPP project preparation;
vii. inconsistency in the PPP project pipelines; and
viii. lack of standardisation, hindering replication etc.

Research Methodology

Drawing from the review of relevant literature in the research work which involves various epistemological paradigms leading to adoption of quantitative research strand, data collected through structured questionnaire were analysed using quantitative analytical procedures. The results from the analysed data were interpreted in the study. In the collection of data for the study, an empirical survey was conducted on the development of infrastructure under PPP in Nigeria to confirm reviewed literature in infrastructure development under PPP concession in Nigeria this provides quantitative and or numeric description of trends, attitudes and opinion of the targeted populations for the study according to Creswell, (2009). The empirical survey was carried out through the administration of a well-structured questionnaire on the target population within the study area of the research work.

In order to obtain an effective measurement tool, the proposed 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 in selecting 20 respondents who were assumed to have been involved in PPP infrastructure development 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 and different and relevant terms were used.

A total of 320 questionnaires were distributed within the study area through a convenience sampling method see Table 1.1. The highest number of questionnaires was distributed to Abuja, the Federal Capital City of Nigeria and its environs where greater numbers of PPP infrastructure projects are ongoing while quite a number of such type of projects have been completed in the same locality and a greatest proportion of valid questionnaires were also returned from the city. 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 were subsequently analysed in the research work.

The general administration of the survey questionnaire was personally carried out by the researcher with the help of other professional colleagues and past students. The personal influence of these professional colleagues within their respective place of work and organizations was of great benefit in obtaining reliable and suitable data for the research work. The questionnaires were administered on the identified respondents who have been involved in PPP infrastructure project development within the study area. Table 1.2 depicted the valid questionnaires from all the respondents from each state within the study area.

Table 1.1: Questionnaire Distribution within the Study Area

Distribution	Number Distributed	Percentage Distributed
Abuja (FCT)	122	38%

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Kogi State	50	16%
Nasarawa State	45	14%
Niger State	43	13%
Plateau State	31	10%
Kwara State	29	9%
Total	**320**	**100%**

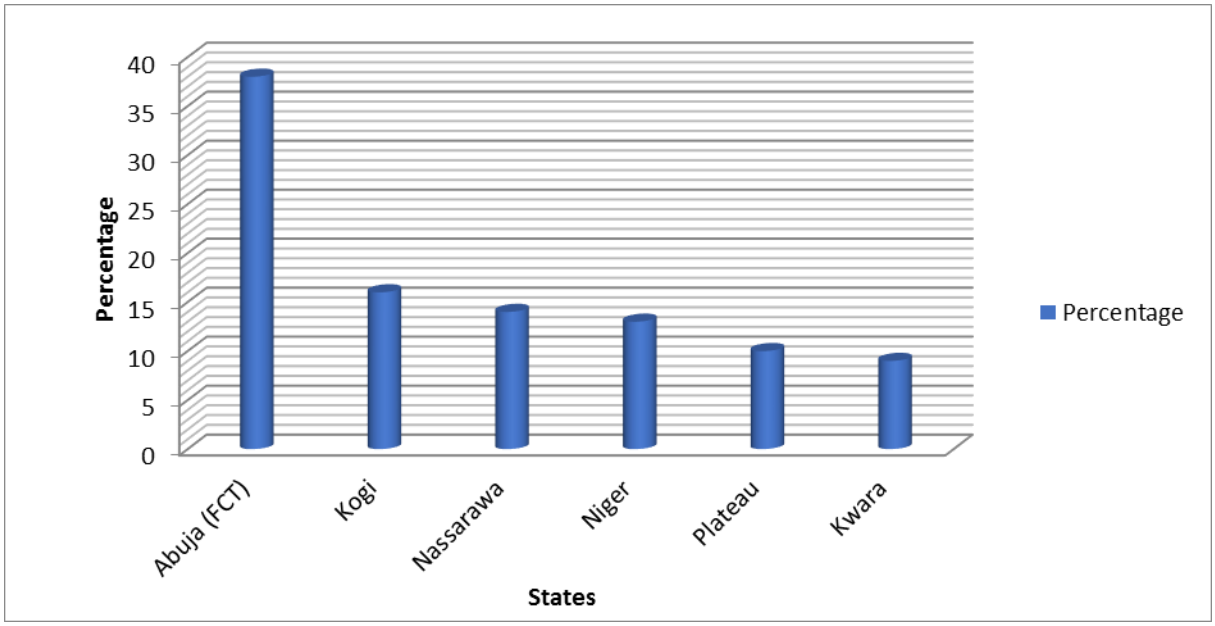

Figure 1.1: Percentage Distribution of Questionnaires

Table 1.2: 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**

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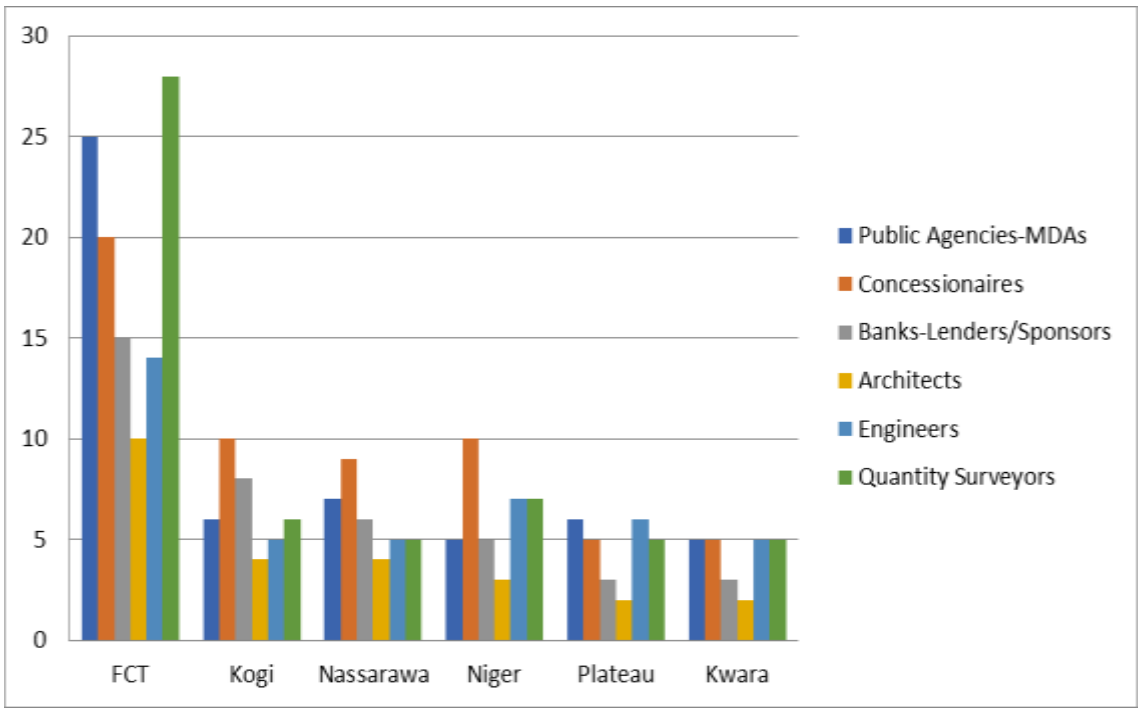

Figure 1.2: Valid Questionnaire for Analysis

Data Presentation, Analysis and Interpretation

Data collected from the quantitative research approach 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 which were used in analysing professional competency of the respondents and the general expert opinion of the respondents on the implementation of PPP for road infrastructure development while the inferential statistics was carried out using Mean Score (MS).

The application of means score (MS) in this study 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 factor are then calculated from the equation bellow;

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

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.

Table 1.3 and 1.4 depicts 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 the professional competency of the respondents in the subject area of the research work. The summary of the survey in the table shows that a total of 82 out of the 276 respondents has between 21-25 years of professional working experience which stands at 29.7% of the total respondents, while 77 respondents has 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 road infrastructure development under PPP concession. In a related development, table 1.4 indicate that a total of 82 and 86 respondents have handled between 21 and 25; and above 30 road infrastructure development under PPP concession respectively under survey. These also indicate that reasonable number of the respondents have been involved in sufficient number of road infrastructure development under

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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.

Table 1.3: Respondents Year of Experience

Respondents	**1-5**	**6-10**	**11-15**	**16-20**	**21-25**	**26-30**	**Above 31**	**Total**
Public Agencies-MDAs	-	1	6	6	20	15	6	54
Concessionaires	2	3	5	7	17	20	5	59
Bankers	4	3	6	4	10	10	3	40
Architects	1	1	1	2	12	6	2	25
Engineers	-	5	5	8	10	13	1	42
Quantity Surveyors	-	6	9	8	15	13	5	56
Total	**7**	**20**	**33**	**35**	**82**	**77**	**22**	**276**

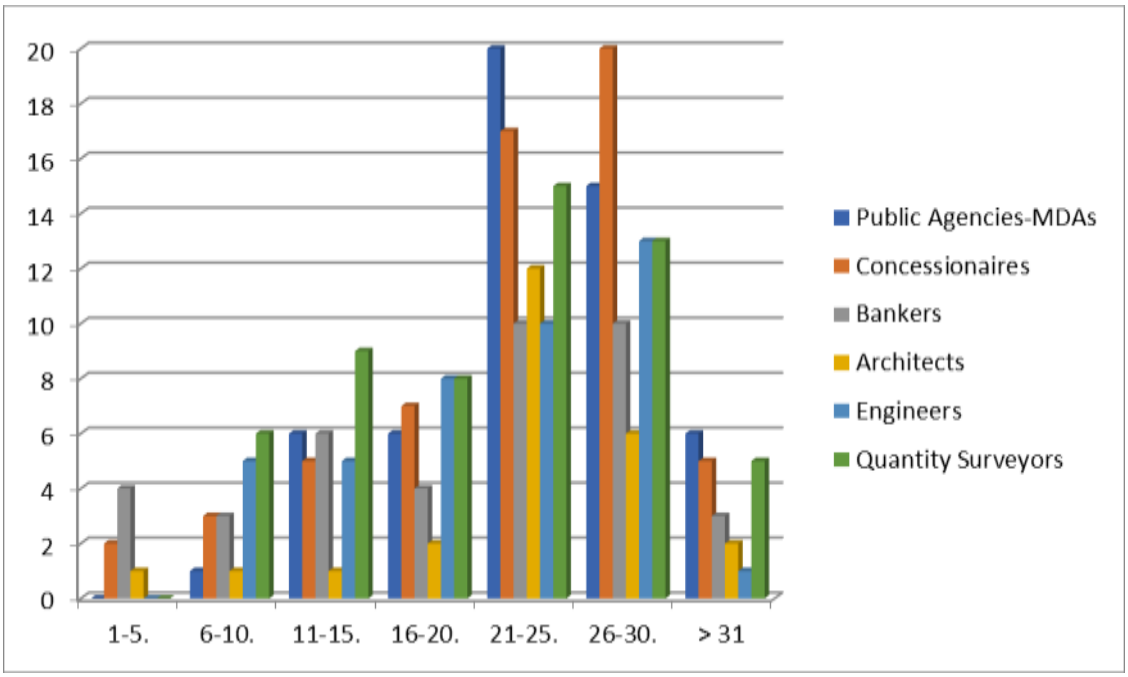

Fig 1.3: Respondents Years of Experience

Table 1.4: Number of Infrastructure Projects Handled

Respondents	**1-5**	**6-10**	**11-15**	**16-20**	**21-25**	**Above 26**	**Total**
Public Agencies-MDAs	6	4	6	6	17	15	54
Concessionaires	2	3	5	7	17	25	59
Bankers	4	3	6	4	13	10	40
Architects	1	2	2	2	12	6	25
Engineers	2	5	5	8	8	14	42
Quantity Surveyors	2	6	9	8	15	16	56
Total	**17**	**23**	**33**	**35**	**82**	**86**	**276**

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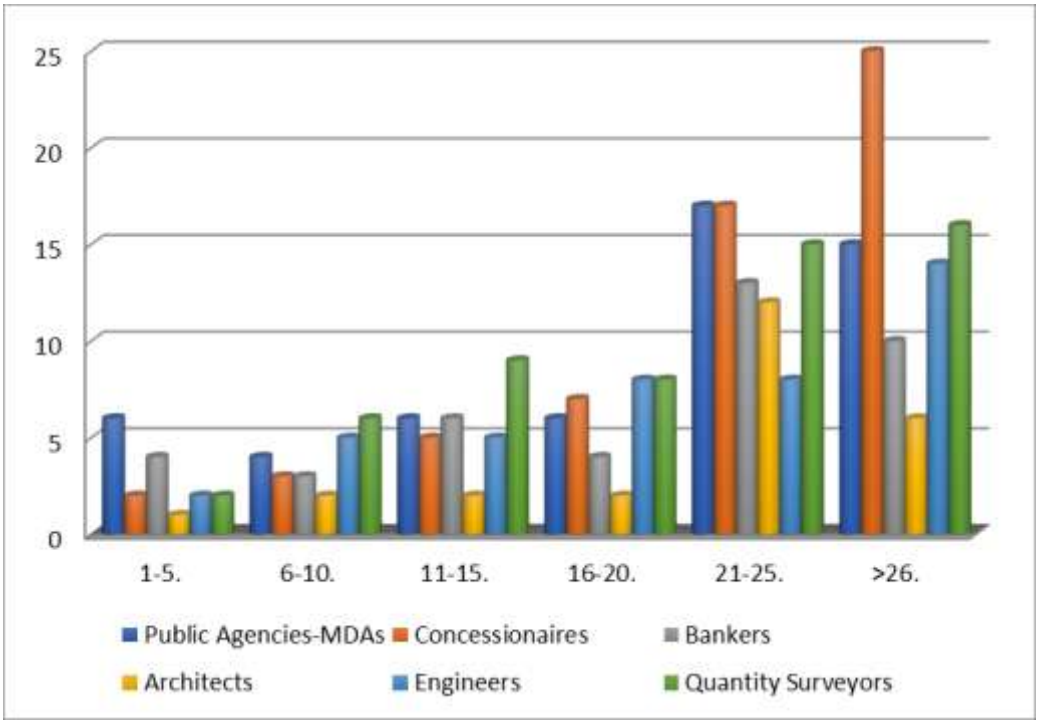

Figure 1.4: PPP Infrastructure Project Handled by Respondents

Table 1.5 depicts the respondents' opinion on the effectiveness and various responsibilities of both the public and private investors in the provision of an enabling PPP environment for infrastructure development and provision in Nigeria. Review of literature reveals that adequate and sustainable environment is a critical success factor for any PPP transaction in the provision of infrastructure facility this is supported by the view of Adamu et al. (2015) in the assessment of the conceptual PPP framework in north-central region of Nigeria. It is clearly evidenced from table 1.5 as indicated in the overall MS low rating that the provision of sustainable PPP enabling environment for infrastructure development in Nigeria is grossly inadequate as evidenced in the MS overall average which is below 2.00 averages.

However, the result from the table shows that only two variables out the thirteen variables under study proved to be slightly effective, the respondent believed that these two variables were motivated by political and personal gain in order to win the citizen's mind for political ambitions in the area. The slightly effective variables are publication of PPP projects and country level capacity building; their MS are 2.83, and 2.20 respectively.

Table 1.5: PPP Enabling Environment for Infrastructure Development

PPP Enabling Environment	Respondents Scoring for PPP Enabling Environment					Mean Score (MS)	Rank
	1	2	3	4	5		
• Formulation of comprehensive PPP policy	32	14	7	0	0	1.53	7
• Robust and stable legal and regulatory framework	23	26	5	0	0	1.67	5
• Effective institutional framework	32	19	3	0	0	1.46	5
• Efficient and reliable dispute resolution options	28	19	7	0	0	1.61	2
• Individual capacity building	30	21	3	0	0	1.50	8
	19	22	13	0	0	1.89	4
	16	18	13	7	0	2.20	2
	41	10	3	0	0	1.30	10

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• Institutional capacity building	41	12	1	0	0	1.26	11
• Country-level capacity building	12	21	10	0	3	1.96	3
• Transparent and competitive procurement • Anti-corruption measures • Proactive communication of PPP value • Publication of PPP project information	7	14	16	13	3	2.83	1

III. CONCLUSION AND RECOMMENDATION

This study has explored the concept and implementation of PPP models in the provision and development of infrastructure facilities in Nigerian tertiary institutions with emphasis on Polytechnic infrastructure 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 in the Polytechnic sector. However, in spite of the efforts of Nigerian government at encouraging private sector participation in the provision of infrastructure facilities, the ambition was impacted by many challenges which were attributed to inadequate environment for PPP transaction in Nigeria especially the north-central region of the country. In recognition of these challenges, the Federal Government of Nigeria made a great progress by establishing certain mechanisms to enhance the effectiveness of PPP implementation in Nigeria. These mechanisms are geared towards dealing with current and the impending challenges facing the development and management of infrastructure under PPPs in Nigerian construction industry especially in the education sector.

In order to achieve the aim of the research work, the study start with the review of relevant literature on the concept and adoption of PPP models for infrastructure development in Nigeria with emphasis on the Nigeria National Policy on PPP in the area of PPP enabling environment, the roles and responsibilities of both the public and private sectors in the provision of a sustainable PPP enabling environment, and finally the many challenges and the impact of sustainable environment on infrastructure development in north-central region of Nigeria. Quantitative research method was employed in the study; data collection was through administration of well-structured questionnaire on target population. Data collected 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 while the inferential statistics was carried out using Mean Score (MS).

The study revealed that there is urgent need for the Federal Government of Nigeria to review the current Nigeria National Policy on PPP most especially in the area of PPP enabling environment in order to encourage more private sector participation in the drive for provision and development of infrastructure facility in Nigerian tertiary institutions. The study is of the view that the lingering problems affecting PPP implementation in infrastructure development is as a result of poor and inadequate PPP enabling environment.

From the study, it was evidenced that the provision of sustainable PPP enabling environment for infrastructure development in Nigeria is grossly inadequate as evidenced in the MS overall average which is below 2.00 averages, this which clearly indicate and adverse effect on the development and delivery of infrastructure facilities within the study area.

The study therefore recommends that the Federal Government of Nigeria should take a giant step in calling for the review of 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 with more emphasis on the PPP Enabling Environment of the framework. This will serve as the bedrock of national economic growth of the country.

REFERENCES

[1]. Adamu, M., Lowe, J. & Manase, D. (2015) "Public-Private Financed Road Infrastructure Development in North-Central Region of Nigeria" Journal of Management and Sustainability, 5(4), pp.58-67.

[2]. Adamu, M. (2016) "Infrastructure Development: A Public-Private Partnership Option in the Attainment of Value for Money, Journal of Mechanical and Civil Engineering, 13(2) pp. 05-13.
[3]. Akintoye, A. (2009). PPPs for Physical Infrastructure in Developing Countries: RICS Research, Policy, Finance and Management for Public-Private Partnerships, ed. West Sussex, Blackwell.
[4]. Ameh, O.J., Soyingbe, A.A., &Odusami, K.T. (2010) "Significant Factors Causing Cost Overruns in Telecommunication Projects in Nigeria". Journal of Construction in Developing Countries.15(2), pp.49-56.
[5]. Amobi, I.C. (2013) "Public-Private Partnership as a Model for Infrastructural Development in Nigerian Universities" A paper presented at the Maiden Lecture of the Annual Lecture Series of the Department of Economics, NnamdiAzikiwe University, Akwa Nigeria, African Heritage Institution, pp.1-10
[6]. Business Monitor (2014) "Road PPPs to Drive Growth in Nigeria's Road Sector". BMI, South Africa.
[7]. Howes, R. & Tah, R.H. (2007) "Strategic Management Applied to International Construction" London: Thomas Telford Publishing, 1 Heron Quay.
[8]. Ndubisi, C. (2012) "Public Private Partnership: The Nigerian Experience" Paper presented at the Capacity Building Programme for PPP in Infrastructure, ICRC Mbamene, Swaziland July 2012.
[9]. Obozuwa, D.E. (2013) "PPP as a Tool for Development in Nigeria" FPPPN Admin.
[10]. Okonjo-Iweala, N. (2014) "Nigeria's Infrastructure Spending at US$6 Billion" This Day, News Paper November Edition. http://www.icrc.gov/news_details.ppp
[11]. Sanusi, L.S (2012) "The Role of Development Finance Institutions in Infrastructure Development: What Nigeria can learn from BNDES and the Indian Infrastructure Finance Company, Keynote Address; 3rd ICRC PPP Stakeholders Forum.
[12]. Soyeju, O. (2013) "Legal Framework for Public-Private Partnership in Nigeria". De jure pp.814-832.
[13]. World Economic Forum (2013) "Strategic Infrastructure: Steps to Prepare and Accelerate Public-Private Partnerships" May Edition, Boston Consulting Group.