Assessing the Effectiveness of Public-Private-Partnership (PPP) Procurement Models in Delivering Infrastructure Projects in Nigerian Communities

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Abstract
The study aims at examining how effective Public-Private Partnership (PPP) procurement models in Nigeria are in enhancing the delivery of infrastructures. The study examined those factors that measure the effectiveness of public-private partnership procurement model in other countries from literature. Thus study employed a survey research design with a population and sample n Abuja. Data were majorly collected from primary source using questionnaire and data analysis used regression analysis and chi-square statistics. The result of the empirical findings showed that the three most effective factors with regard to public-private partnership procurement model were „established demand", „risk apportionment to proper party" and „user fees long-term management" while the least effective factors revealed by the study were „transparent and objective selection criteria" „third party consultant involvement", „acquisition and procurement addressed by legislation", „clear and objective condition for renegotiation and positive environmental performance impact". These factors weakened the effectiveness of the public-private partnership procurement model and cemented the location of the model on the equilibrium framework in the industry"s interest quadrant; while the regression analysis test indicated significant difference in the perception of public private sector respondents as well as the various groups" perception response. However, the chi-square test revealed that extant laws and guidelines were relevant factors for effectiveness of public-private partnership model. This study therefore recommended that stakeholders sensitise the citizens on the significance of Public-private partnership arrangement in developing and delivering infrastructure especially at this period with dwindling public resources and competing demand induced by limited financial resources.

Keywords:infrastructures,delivering, model,Public-privatepartnership, effectiveness

Introduction

Basically, Public-Private Partnerships (PPPs) have been promoted in Nigeria to bridge growing infrastructure gaps amid limited public funds. This mechanism had emerged over the last two decades as a popular strategy for infrastructure development by governments worldwide; primarily to meet ever-growing aspirations of its citizens (Garvin, 2009 cited by Kpagaa, 2016; Udora, 2024; Ambrose-Agabi & Abu, 2024). Financial resources available to the government to finance its budgets are often inadequate to meet the enormous investments necessary to build the much desirable and indispensible public infrastructural resources or renovate

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the fast-decaying ones. This suggests the necessity for a stand-in source of financing capital or developmental projects. Thus developed world is increasingly using various forms of PPPs in the face of increasing limitations in capital resources (Kpagaa, 2016 citing Ahadzi & Bowles, 2004; and Ibrahim, 2007). As PPPs offer rapid and effective way of offsetting the capital costs of such projects and of meeting immediate infrastructural needs, it became imperative for Nigerian government to embrace similar funding regime, especially in this era of rising demand (Akintoye, 2010). As a result, the application of PPPs in Nigeria is becoming increasingly popular for both new projects and for the operation and management of old facilities (Ibrahim, et al, 2006). PPP involves an agreement between the public (government) and the private sector actors with a view of delivering facilities, providing services or operation of amenities traditionally considered to be provided by the government (or public sector organisation). It encompasses involving the private sector partner(s) in designing, constructing, financing, ownership and/or operation of public infrastructural projects. Furthermore, the Infrastructural Concession Regulatory Act (ICRA) 2005, upon which Infrastructural Concession Regulatory Commission (ICRC) was established in 2008, defined public-private partnerships as "the participation of the private sector in financing the construction, development, operation, or maintenance of infrastructure or development projects of the federal government through concession or contractual arrangement". Consequently, PPP is a form of collaboration between the government (federal or state) and non-government stakeholders through a contractual agreement working together towards completing a project according to agreed tasks and risks while each party maintains its identity, independence and responsibility. The National Council for Public-Private Partnership has seen the concept as a contractual agreement amongst a governmental agency and business enterprises for participation and investment in infrastructure and projects (ICRA, 2005 as amended to date; ICRC, 2024).

By the early 21st century, there was no provision of a regulatory framework to guide PPP in Nigeria until the introduction of the ICRA in 2005, in a bid to encourage private sector collaborations, partnership and investment in development projects in the Nigerian communities. The Act (ICRA) confers on Ministries, Departments and Agencies (MDAs) of the government the authority to enter a PPP contract with or grant concession to any private sector entity for the financing, construction, and maintenance of federal infrastructure (Berkeley, 2024).

According to the Nigeria"s Ministry of Interior (2025), the assigned PPP unit of the MDA is expected to perform the following functions:

a. To identify, prioritise, select ad develop a framework for Public Private Partnerships Projects;
b. To assess the current status and performance of key infrastructural facilities in the all sectors of the economy;
c. To assess the policy, legal and institutional environment for involving the private sector in the provision of infrastructural projects;
d. To evaluate projects in the capital budget and suggest those that can be undertaken through PPP arrangements;
e. To ensure that all PPP projects are duly evaluated and included in the Medium Term Expenditure Framework (MTEF) for continuity;
f. To undertake financial and credit risk assessments in all PPP transactions
g. To assess, evaluate and manage post-contract activities;
h. To assist policy-makers in developing the required strategies for increased private sector participation in infrastructural

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services, including contract monitoring; and

i. To undertake any other assignment relevant to the functions of the unit assigned by the management

Blackwell (2004) cited in Kpagaa (2016) had maintained that the main aim of PPP/PFI (private finance initiative) is to deliver public services of high quality which are more cost-effective. Then Kpagaa (2016) citing Garvin (2009) asserted that PPP is a long-term contractual arrangement between the public and private sectors where mutual benefits are sought and where the private sector provides operating services and/or puts private finance at risk. The author further quoted British Broadcasting Corporation, (BBC), (2011) of viewing PPP as a way of financing capital projects without an immediate recourse to public treasury. If properly formulated and managed, PPP can provide a number of benefits to the public sectors such as alleviating the financial burden on the public sector due to rising infrastructure development cost, allowing risk to be transferred from the public to the private sector; and increasing the „value for money" spent for the infrastructure service by providing more efficient, lower cost and reliable services (Kwak, et al, 2009). Efficient project delivery under PPP is, however, complex due to presence of uncertainty and risks affecting virtually all aspects of project life cycle; complex project composition and associated functional integration; complex network of relationship among various stakeholders; multi-project operation and increased public participation (Akintoye, 2010; 2011; Zarewa, 2016).

The increasing complexity, duration and multitude of parties involved in a typical PPP procurement process have made several studies to be conducted on the PPP procurement process with a view to increasing its effectiveness such as Zarewa (2016, 2019, 2023), Ibrahim (2007) in Kpagaa (2016); Cuttaree (2008) cited in Wang, et al (2016); Alinaitwe, et al (2012); and have identified variety of success factors and ranked them in order of priority through survey of industry, personnel, and academics. Akintoye, et al (2003) cited in Kpagaa (2016) used interviews to determine how best to achieve success in PFI projects in the UK; further identified how to properly allocate resources eliminating risk, curtailing cost escalation, improving project completion times, introducing innovation and reducing maintenance costs can help lead to successful project as well as the several challenges to achieving best value such as the high cost of management, lengthy negotiation and complex contractual negotiations. Zarewa, et al (2018) identified that PPP failures can be linked to governance problem and therefore established that governance impacts Large Infrastructure Projects (LIPs) delivery both positively and negatively depending on how the governance is approached, signifying four LIPs that were successful due to proper initiation, setting aside funds for the projects at the onset, proactive risk management, top management support, and simple governance policies and structures. They further contended that value for money objective could only be attained if private sector expertise, innovation, competitive efficiency and risk transfer can overcome the increased transaction contracting and negotiation costs (Zarewa, et al 2018). Ibrahim, et al (2006) in Zarewa, et al (2018); Falchetta, et al (2022) and Cuttaree and Mandri-Perrott (2011) identified the private and public risks in PPP arrangement and suggested how best to mitigate them. According to Kpagaa (2016), Garvin (2009) had looked at PPP procurement process from a different dimension; and developed a PPP equilibrium framework and divided the main stakeholders in PPP arrangement into four categories: the State, Society, the Market and the Industry; each with a corresponding quadrant. The basis for the Quadrant Equilibrium framework

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relies on the proposition that in order for PPP Procurement process to be effective, it must balance the interests of the aforementioned parties (Garvin, 2009 cited in Kpagaa, 2016). This, in line with Cuttaree and Mandri-Perrott (2011) and Zarewa, et al (2018), requires the development of a governance framework containing guidelines, including sanctions for violators, to guide the governance of the projects as failures of many large infrastructure projects had been as a result of governance problems by previous studies because governance impacts projects‟ performance.

This study is designed to adapt Garvin‟s PPP equilibrium framework and its appraisal templates as a tool for evaluating the effectiveness of PPP procurement models in Nigerian community. This study, however, differs from Garvin‟s study (2009) as it intends to apply the assessment tools to the Nigerian PPP environment.

The following questions are put forward to be answered through this study: Is PPP procurement model practised by Nigerian states? Is there adequate awareness of Public-Private Partnerships to Nigerians (both individuals and public servants)? Is Public-Private Partnership procurement model necessary in delivering infrastructural project in Nigeria and if yes, which of them are mostly used? Will legal frameworks and activities of Infrastructure Concession Regulatory Commission contribute to the effectiveness of PPPs in Nigeria?

This study would examine the effectiveness of Public-Private Partnerships procurement models, how they operate and the benefits of the initiative in delivering capital projects in Nigerian society. It also assesses the advantages and challenges of using the PPP procurement model in delivering infrastructural projects in the country.

The hypotheses to guide the study are as follows:

H_o 1: Public private partnership will not significantly impact infrastructural project in Nigerian communities

H_0 2: Public private partnership does not play a significant role in the provision of infrastructure projects in rural settlements in Nigeria

H_0 3: The absence of extant laws and guidelines will not have significant influence on infrastructural project delivery in Nigerian communities.

This study assumes that sample respondents‟ location would not have any significant influence on their views concerning the success of Public-Private Partnership initiatives in delivering infrastructural projects.

Review of Related Literature

The concept of Public-Private Partnership (PPP) models are constantly being developed in recent years to enhance collaboration between government and private firms and individuals for procurement and provision of public services and/or infrastructure with a view to sharing the benefits and risks associated with such partnership (Kpagaa, 2016). The joint approach tends to accelerate investment in public infrastructures with value generated through collaborating production while both public and private sector partners are able to blend their special skills and attain an outcome that neither party could achieve alone. PPPs help to encourage private financing by increasing funding sources and reducing financial risk (Akintoye, et al, 2015; Ambrose-Agali & Abu, 2024; Billing, et al, 2024; Udora, 2024). PPPs can be described as a procurement method that the government collaborates with private sector operators to share risks and resources in delivering a facility and this has the primary objective of facilitating provision and delivery of public facilities and services. The government transfers appropriate level of risks and costs to the private investing partners. In short, it is a strategic method to address the

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infrastructural gap in Nigeria (Dada, et al, 2012 in Ambrose-Agali & Abu, 2024).

Akintoye, et al (2015) had quoted Her Majesty‟s Treasury (1998; 2007) of defining PPP as an arrangement between two or more entities that enables them work cooperatively towards shared compatible objectives and in which there is some degree of shared authority and responsibility, joint investment of shared resources, shared risk taking and mutual benefits while Kpagaa (2016) quoted the Canadian Council on PPP (2004) of describing PPP as an arrangement between the public and private sectors with clear agreement on shared objectives for the delivery of public infrastructure and/or public services by the private sector that would otherwise have been provided through traditional public sector procurement. Kwak, et al (2009), however. gave a general definition of PPP as "a cooperative arrangement between the public and private sectors that involve the sharing of resources, risks, responsibilities and rewards with others for the achievement of joint objectives". Inderst (2016) asserted that a public–private partnership (PPP) is an arrangement between the public sector and the private sector for the purpose of delivering a project or a service traditionally provided by the public sector. Typically, a private sector consortium forms the special project vehicle that develops, builds, maintains, and operates the asset for the stated period under contractual arrangement while the risk sharing is usually dependent on the definite contract. On this premise, therefore, PPP would be seen as the association that exists between the governmental authorities and private sector operators that involves procurement and provision of communal utilities and services with shared risks, responsibilities, funds, interests, benefits and rewards.

Various types of PPP arrangements which vary in terms of the degree of private sector involvement have been used to procure projects depending on the project objectives and requirements (Kwak et al, 2009). The arrangements can also differ in purpose, service scope, legal structure, risk sharing, finance sources and ownership of properties, Kwak et al (2009) added. Udora (2024) and Ambrose-Agali, et al (2024) cited Kopp (1997) espousing the Build-Operate-Transfer (BOT), Build-Transfer-Operate (BTO) and Build-Own-Operate (BOO) as the three main models of PPP being used, also a range of other terms as suggested by David, et al (2003) cited in Berkeley (2024) are used to describe variations of BOT, PFI concession types of PPP being used worldwide as follows:

Build-Operate-Transfer (BOT): The private partner builds a facility to the specifications agreed to by the public agency, operates the facility for a specified time period under a contract or franchise agreement with the agency, and then transfers the facility to the agency at the end of the specified period of time. In most cases, the private partner will also provide some, or all, of the financing for the facility, so the length of the contract or franchise must be sufficient to enable the private partner to realise a reasonable return on its investments through user-charges (Kopp, 1997 in Kpagaa, 2016). The public partner takes over and assumes operating responsibility of the facility as soon as the franchise period elapsed.

Build-Own-Operate (BOO) Model: Under this model, the private partner undertakes constructing and operating the facility without transferring ownership to the government. The private sector partner retains the legal title to the facility as in the case of Nagode Enterprises to Green Zones in Nyanya and Asokoro Districts of the Federal Capital Territory, and public sector agency has no obligation to purchase the facility or take title. A BOO transaction may qualify for tax-exempt status as a service contract if all Internal Revenue Code requirements are satisfied (Kpagaa, 2016; Inderst, 2016; Agali & Abu, 2024).

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Buy-Build-Operate (BBO) Model: A model that includes a rehabilitating or expanding of a subsisting facility. The government sells the asset to the private sector entity, which then makes the improvements necessary to operate the facility in a profitable manner (David, et al, 2003 in Kpagaa, 2016; Agali & Abu, 2024).

Contract Services Operations and Maintenance: A public partner (Federal, State or Local Government Agency or Authority) contracts with a private partner to provide and/or maintain a specific service. Under the private operation and maintenance option, the public partner retains ownership and overall management of the public facility or system (David, et al, 2003 cited in Kpagaa, 2016; Udora, 2024).

Operations, Maintenance and Management: A public partner (Federal, State or Local Government agency or authority) contracts with a private partner to operate, maintain and manage a facility or system providing a service. This option allows the government to retain ownership whereas the private partner whereas the private partner would invest his own capital fund and recoup his investment and as well earn a fair return over a period of time. Many local governments use this contractual partnership arrangement to provide waste water treatment services (Kpagaa, 2016).

Design-Build (DB) Model: A DP option, according to David, et al (2003), is when the private partner provides both design and construction of a project to the public agency thereby saving both time and money and making a single entity accountable to the public agency or owner for the design and construction. It is however worth noting that the model allocates more project risk while stronger guarantees are provided to the private sector partner. The public sector entity retains the asset ownership and responsibility for its operation and maintenance.

Design-Build-and-Maintain(DBM) Model: The model is similar to a DB except that the private sector partner would be responsible for the maintenance of the property for an agreed period of time. This model offers similar benefits to those of DB with maintenance risk pushed to the private sector partner and the guarantee enlarged to incorporate facility maintenance. The public sector partner owns and operates the asset (David, et al, 2003 cited in Kpagaa, 2016; Berkeley, 2025).

Design-Build-Operate (DBO) Model: This involves a single contractual arrangement for the private sector partner to undertake the design, construction and operation of a capital improvement, while the public sector retain the title to the facility except under a design-build-operate-transfer (DBOT) or design-build-own-operate (DBOO) project model. The DBO method of contracting is contrary to the separated and sequential approach ordinarily used in the United States by both the private and public sectors (David, et al, 2003 in Kpagaa, 2016). This model had been used by the Lagos State of Nigeria since 2017 for some of its PPP-based projects (Ambrose-Agali and Abu, 2024; Berkeley, 2024).

Developer Finance: Furthermore, Kpagaa (2016) cited David, et al (2003), asserted that the private party finances the construction or expansion of a public facility in exchange for the right to build residential housing, commercial stores, and/or industrial facilities at the site.

PPP Procurement Method

PPPs take many forms and depend on the sector, financing and ownership. Such arrangements are complex comprising many agreements between three different types of organisations namely the public sector client, the private sector provider of the required infrastructure and/or services and the financiers or investors (Udora, 2024; Ambrose-Agali & Abu, 2024; Robinson et al, 2010). PPP transactions

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are often seen as a three-way relationship between the public sector clients, the private sector provider of the service generally referred to as Special Purpose Vehicle (SPV) or Special Purpose Company (SPC) and the financiers or investors who provide funding for the project (Robinson, et al, 2010; Falchetta,G. et. al. 2022). The contributions of the public sector client in PPP projects vary widely according to the circumstances of each project but they mostly fall within administrative, economic and political spheres (Akintoye, et al, 2015; Zarewa, 2016; 2023).

The SPV/SPC, on the other hand, procures expertise for the design and construction of the project as well as the maintenance and operations of the completed project in addition to sourcing the funds required to execute the project from interested financiers/investors thus introducing the third organisation into the project (Robinson, et al, 2010). The financiers and investors provide the funds required to execute the project in anticipation of repayment plus interest and/or dividends in the case of shareholders to the project (Robinson, et al, 2010). Since the success of the project influence their returns, the financiers and the investors may shape the design, maintenance and operation strategies. The success of a PPP project depends on the selection of the most suitable SPV/SPC which requires a well-structured tendering process, an appropriate concessionaire evaluation method, and a set of evaluation criteria (Kwak, et al, 2009).

The complexity in contractual relationship between participants and the long concession periods have made PPPs distinct from a traditional infrastructure development routes due to broad range of uncertainties and risks associated with it, assumption of far more responsibilities and much more and deeper risks by the concessionaire than a traditional contract; much more complicated financial issues and difficulty in the allocation of risks and rewards among participants (Kwak, et al, 2009). The complex nature of PPP project has according to Robinson, et al (2010) made the use of appropriate management structure vital for their successful implementation and this should reflect the diversity of professionals and team-components, the nature of agreement and relationship involved.

Empirical Review

As a result of lack of adequate funds and revenue to meet infrastructural needs of her citizens, government of different countries over the past three decades devised the Public Private Partnership (PPP) models as an alternative procurement route for infrastructure development. According to Zarewa (2016), it involves the private sector partners in the design, financing, construction, ownership and/or operation of public infrastructure. In a related development, Zarewa (2023) conducted a study using purposive sampling in the selection of both the sample LIPs and key role players in their governance who provided information for the study. The samples were selected from LIPs executed by state and federal governments, educational institutions, and private organisations, in the country in order to assess the Project Governance Structures (PGSs) used by the various PAs in governing their projects with a view to determining how the respective features of the PAs influenced their PGSs. In an earlier study, he evaluated lessons learned practices (LLPs) in Public Private Partnerships projects in Nigeria through the use of semi-structured interviews with people from two client organisations and two concessionaires who have participated in nineteen (19) PPP projects and case studies of two PPP projects, which revealed that all the project participants considered LLPs in PPP projects as desirable and useful, the project participants‟ knowledge in LLPs needed to be improved, but since the conduct of LLPs was neither formalised nor

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conducted in accordance with best practice or requirements of the LLP concept; with no framework and/or standard template for the conduct of LLPs, etc the study suggested the correct conduct of further LLPs in the procurement of PPP projects (Zarewa, 2023).

Zarewa (2019) conducted a study on Effective Stakeholder Management (ESM) identified as one of the key requirements for successful project delivery by several scholars with the aim of improving the chances of achieving successful Multifarious Infrastructure Projects' (MIPs) delivery in Nigeria, conducted through questionnaire survey and Relative Importance Index (RII) method of data analysis. He identified 39 barriers to ESM in the delivery of MIPs in Nigeria, evaluated their respective impacts on projects' delivery and ranked the barriers in ascending order of their respective impact levels. He also pointed ten top barriers in descending order, with highest levels of impact against ESM in MIPs delivery to include failure to understand stakeholders' needs and expectations, uncooperative attitude of stakeholders, failure to identify key stakeholders, failure to identify potential conflict areas, project manager's poor knowledge of stakeholder management (SM), late identification of stakeholders, etc. In a similar study, Ambrose-Agali and Abu (2024) conducted a study to assess the effectiveness, challenges, and opportunities of collaborative ventures between the public and private sectors. This study evaluated the effectiveness of public-private partnerships (PPPs) in Nigeria's construction industry, focusing on road and building construction; using an analytic cross-sectional design and a Likert scale for measurement, the study targeted infrastructure stakeholders, with data collected via questionnaires and analysed using IBM SPSS version 27. The study highlighted the importance of demographics, qualifications, and professional experience in determining the degree of public-private partnerships (PPPs) effectiveness in Nigeria's construction industry and their varying levels of experience and exposure to PPP initiatives, providing valuable insights for workforce development and strategic planning within the sector and concluded that utilising diverse expertise and collaborating between the government and private sector actors can improve infrastructural projects under PPP arrangements.

Materials and Methods

This study employed combined survey and exploratory design. The population and sample were selected from Abuja metropolis, specifically the judgemental method of sampling in selecting a sample size of 100 respondents selected from five organisations in Abuja, Nigeria. The choice of Abuja was based on its being the administrative seat of Nigerian government.

We used both primary and secondary data collection methods with questionnaire as the primary instrument while published works were mainly for literature purpose.

100 copies of questionnaire were distributed but of the 100 copies administered, only 78 copies were retrieved. The 78% retrieval rate at a 5% margin of error signifies a reasonable level of consistency, upon which valid conclusion and inferences can be easily drawn. Data collected shall be analysed using logistic regression analysis and chi-square test statistics. Results shall be analysed and interpreted, drawing inferences that would help in proffering constructive recommendations.

Results of Data Analysis and Discuss of Findings

The data collected from field study using questionnaire were presented and analysed using tabular presentations as follows:

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Table 1: Testing Hypothesis One

H_o 1: Public-private partnership will not significantly impact infrastructure project in Nigerian communities

	A	*I*	*DA*	*Predictor X=0*
1 (constant)	**1.0**	**0.5**	**0.0**	**Logit(p) β0= 2.42**
PPP model is effective model for infrastructure project in Nigeria	**0.84**	**0.19**	**0.07**	**Z=score = 7.35**
PPP designs and sensitisation are insufficient to enhance joint participation of public - private stakeholders.	**0.82**	**0.12**	**0.06**	**Std. error = 0.2**
Public-private partnership will not bring about increase in the providing and delivering social infrastructural projects in Nigeria	**0.78**	**0.13**	**0.09**	**Logit(p) β1 = 1.47**
	2.44	**0.34**	**0.22**	**Marginal error = 0.05**
p	**0.813**	**0.113**	**0.0733**	

Source: Field Survey (2025); result of Regression analysis

From the Table 1 above, it was revealed that majority have been in support of the PPP model. The logit(p) of 1.47 indicates a positive coefficient or strong relationship between PPP models and infrastructural developments. This implies that PPP models have a significant and positive impact on infrastructural development in Nigerian communities. Based on this outcome, we reject the null hypothesis (H_0): Public-private partnership will not significantly impact infrastructure project in Nigerian communities and accept the alternate hypothesis (H_1), Public-private partnership will significantly impact infrastructure project in Nigerian communities suggesting that PPP models have significant positive impact on infrastructural developments. Furthermore, intercept term of β0 = 2.24 representing the log-odds of agreeing with the statement when there are no predictor variable (i.e. X = 0), then the result implies a strong baseline log-odds of agreeing that PPP procurement models play a significant role in infrastructural development. Based on this outcomes, from Table 1 above, it can be concluded that PPP is a relevant model in infrastructure project in the face of the trying economy with limited resources. This finding is in line with Kpagaa (2016) which found that while PPP model is an essential model for infrastructural development, it has not actually been fully tapped by the government, as organised private sector are not duly engaged.. The analysis therefore supports the stance that PPP procurement models are effective vehicle in driving infrastructural growth in Nigerian community in the face of economic crunch and limited public finances.

Table 2: Testing Hypothesis Two

H_0 2: Public private partnership does not play a significant role in the provision of infrastructure projects in rural settlements in Nigeria

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	Agreed	Ind.	DA	Value
Constant	**1**	**0.5**	**0**	
Private stakeholders easily identified needs of rural settlers and demand public partnership for project delivery	**0.72**	**0.12**	**0.16**	
Public sector does provide projects based on needs, risks and other factors of necessities in a transparent and objective manner without private partnership	**0.67**	**0.13**	**0.20**	
Public sectors alone cannot provide adequate resources to the people in rural settlements without private participation	**0.78**	**0.11**	**0.11**	
Total	**0.217**	**0.36**	**0.47**	
Mean score (p)	**0.72**	**0.12**	**0.16**	
Marginal error				**0.05**
z-score				**4.89**
Std. error				**0.045**
p-value				**0.00001**

***Source**: Field Survey (2025); result of Regression analysis*

The results from the above table revealed p-value of 0.000001, which is less than 0.05; thus null hypothesis that Public private partnership does not play a significant role in the provision of infrastructure projects in rural settlements in Nigeria is hereby rejected while the alternate hypothesis is accepted. By this result, it is implied PPP model does play a significant role in the provision and delivery of infrastructural projects in the Nigerian rural settlements in a more effective and efficient manner. This, in line with Berkeley (2024), has been seen in the case of Lagos and Rivers State projects like in the case of the Deep-water Port built in the Ijebu Lekki area of Lagos Free Trade Zone and the development and maintenance of Tafawa Balewa Square (TBS) in Lagos State and the Rivers Blue Line Rail projects (Berkeley, 2024). Thus the study revealed a high proportion of "Accepted" responses implies that most of the respondents believe PPP procurement models would help in increased provisions of development projects and amenities in the Nigerian community.

Table 3A: Testing Hypothesis Three

H_0 3: The absence of extant laws and guidelines will not have significant influence on the delivery of infrastructure project in Nigeria.

Item/Description	D	SD	A	SA
Existed PPP procurement guidelines and laws are adequate to enhance effective infrastructure project delivery	4	12	24	38
PPP procurement implementation is transparent and objective	30	31	11	6
The following factors influence PPP model positively:				
(i) Well-known and confirmed demand	2	3	28	45
(ii) Apportionment of identified Risks to property party	5	11	26	36
(iii) Management of long term user-fees	6	4	26	32
(iv) Criteria of transparent and objective selection	26	31	16	5
(v) Involvement of Third-party consultant	28	45	3	2
(vi) legislation-addressed Acquisition and procurement model	30	26	13	9
(vii) Conditions for objective re-negotiation	36	26	10	6
(viii) Definite environment performance impact	38	24	12	4
TOTAL	171	170	134	139

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Source: Field Survey, 2025

Table 3B: Computation of Chi-square from Data in Table 3A

Item	A	B	T_C	O-E	$(O-E)^2$	$O-E)^2/E$	t
1	16 (42.34)	62 (35.7)	78	-26.34	693.95	16.39 19.46	
2	61 (42.34)	17 (35.7)	78	348.09	348.09	8.22 9.76	
3	341 (333.34)	273 (280.7)	614	7.69	59.07	0.18 0.21	
TOTAL (T_R)	418	352	770			X^2 =54.2209	9.488

* Expected frequencies in parentheses (Formula: (TR)(TC)/(TΣ) e.g. 78*418/770).

Source: Ms Excel output of Chi-square computation, 2025

Decision: If the computed chi-square (x^2) value is above the table value of x^2, then the null hypothesis is rejected and the alternate hypothesis, accepted. From the above Table 3b, data analysis is subject to 0.05 marginal error and 4 degree of freedom (computed as (n-1)(r-1) where n = no of columns and r= no of rows. From the above, the calculated chi-square value is **54.221** which is less than the table value of x^2 at 0.05 and 4 df [(2-1)(5-1)] which is **9.488, hence the study rejects the null hypothesis that** absence of extant laws and guidelines will not have significant influence on the delivery of infrastructure project in Nigeria **while the alternate hypothesis** absence of extant laws and guidelines will have significant influence on the delivery of infrastructure project in Nigeria **is hereby accepted**. This therefore informed the conclusion that extant laws and guidelines and other related factors are relevant for effectiveness of PPP procurement model.

Conclusionand Recommendations

Public-Private Partnership (PPP) performs a significant role in the provision and delivery of infrastructure projects in Nigeria, especially in this period of economic recession, when government is struggling with meeting its enormous economic demands with limited available resources. This is clear following the fact that recession and economic crunch has affected government efforts and ability to adequately provide and evenly distribute infrastructure projects across the various constituencies. In the light of the study hypotheses, the following findings were revealed:

a. ThatPublic-privatepartnerships significantly influenced infrastructural project developments in Nigeria. The relevance of PPP model is growing worldwide following the need to meet the ever-increasing aspirations of the citizenry and the consequent insufficient public financial resources to meet the gargantuan investment required in public amenities, projects and services
b. Secondly, it appears that PPP procurement models were perceive to have significant role in infrastructural development in Nigeria. The data supports effectiveness of the PPP procurement models in driving economic growth and improving capital projects and public service delivery in the country.
c. Thirdly, Public-private partnership does play a role in provision of infrastructure projects in th3 Nigerian rural settlements. Ideally, the private sector stakeholders are at the grassroots and so they are closer to

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the people in the rural settlements and can easily identify their needs. The most effective models of PPP model include „established demand", „risk apportionment to proper party" as well as „user fees long-term management" but such factors as „transparent and objective selection criteria" „third party consultant involvement", „acquisition and procurement addressed by legislation", „clear and objective condition for renegotiation and positive environmental performance impact" were found to be the least effective ones. Finally, inadequate sensitisation of the people and poor implementation of extant laws and guidelines in a transparent and objective manner leads to failure to effectiveness in PPP procurement models. Besides, effectiveness of PPP procurement model has been weakened by such factors as transparency, objective selection criteria, third party industry"s interest quadrant. Hence, the study revealed that extant laws would significantly influence public-private partnership project provisions and implementation in Nigeria.

It is therefore recommended as follows:

a. In an economy, such as Nigeria with a dwindling economic circumstance, PPP is needed so that the competing demands of the citizens amidst scarce public resources could be met.
b. Government should increase effort to educate the citizens and private firms and investors on the importance of collaborations and public-private partnership initiatives.
c. The extant laws and guidelines must be properly and objectively implemented while enabling environments should be created to encourage interest and participation of domestic and foreign individual and corporate persons.
d. Finally, following the limitations of this study, some areas of PPP procurement could be covered, hence it is suggested that future studies should expand the areas and population.

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