



Perceptions of Public and Private Sector Stakeholders on the Benefits and Challenges of Public-Private-Partnerships in Nigeria

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Abstract

Nigeria's infrastructure deficit has become acute because of the country's burgeoning population. The Public-Private Partnership (PPP) model, under labels such as Private-Finance Initiative (PFI) and Build-Operate-Transfer (BOT), has been touted as the solution to the funding and other challenges confronting the country with regard to infrastructure development. This research sought to examine stakeholder experiences and perceptions on the benefits, abuse and challenges of deploying PPP for infrastructure procurement. The stakeholders investigated were in Lagos and Ogun States of Nigeria, although some of the experiences transcended the two states. Copies of the questionnaire were purposively administered to 115 professionals drawn from the built environment as well as from the legal and financial sectors of the Nigerian economy; the professionals were from the private and public sectors. Eighty-six (86) copies of the questionnaire were returned, with the data subjected to descriptive and inferential statistical analyses. Ranking highest among the list of thirteen identified challenges investigated was 'political interference outside the agreed rules of running the PPP framework', while 'inability to initiate or package PPP projects' ranked least. The most significant form of abuse or disadvantage was 'embezzling of public funds and reinvesting in PPP as private-sector investor', while the least significant form of abuse was determination of the concession period. The inferential statistical analyses found no significant difference between both sectors in the assessment factors except in the matter of 'more careful approach in investing funds in infrastructure'. It is therefore recommended that there should be a continuous audit of stakeholder perceptions on various PPP issues that can form the baseline for impactful improvement and intervention in PPP projects.

Keywords: Perception; Public-Private Partnership; Public Sector; Private Sector

1.0. Introduction

Nigeria's infrastructure gap remains high in virtually every sector – be it housing, transportation (road, rail), energy, communications, etc. (Akintoye, Beck & Kumaraswamy, 2016; Dada &

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Oyediran, 2016). Nigeria is equally projected to be among the top populated nations in the world by the year 2050. As at 2022 the country was reported to be mired in debt, with 63% of its citizens living in multidimensional poverty (National Bureau of Statistics, 2022). There is also the issue of low wages, which forces many youths and professionals to emigrate to presumably more prosperous climes with better-managed economies. Moreover, the current state of transportation infrastructure prevents the smooth movement of people and goods, leading to frequent loss of agricultural produce. Despite some investment in rail infrastructure between 2015 and 2023, the infrastructure gap in the sector remains high. As evidenced by the investment within the said period, the PPP model appears to be a good option for the procurement of public infrastructure in Nigeria.

PPP involves a long-term contract where at least two different organisations, one of which must be a public-sector entity, come together to execute and run a project or render a service, with each of the parties having a clearly specified equity contribution. According to Akintoye et al. (2016), PPP is a contractual arrangement of shared ownership between a public agency and a private company wherein they pool resources and share risks and rewards. Zou and Yang (2016) define it as “a long-term contract between the public and private sectors to deliver infrastructure and related services on behalf, or in support, of their broader service responsibilities.” Each party in a PPP arrangement is a principal and must bring ‘something to the table’. In the contexts of PPP and the current study, the public sector refers to ministries, departments and agencies. A private-sector organisation would refer to any entity that is not a government agency; the private sector may imply a private business concern including private limited companies or publicly quoted ones.

Akintoye et al. (2016) identified some of the extant PPP models across the world, including the seven models used by the UK government, particularly the Private-Finance Initiative (PFI). Akintoye, Beck and Hardcastle (2003), citing HM Treasury (2000), identified the following PPP models in the UK: (1) asset sales “ the sales of surplus public assets; (2) wider markets “ introducing skills and finance from the private sector to encourage more efficient use of physical and intellectual assets in the public sector; (3) sale of business (by floatation or trade sales) “ the sale of shares in state-owned business; (4) Partnership companies “ introducing private-sector ownership into state-owned business while preserving the public interest; (5) private-finance initiative “ public-sector contracts to procure quality services from the private sector in addition to maintaining or constructing the necessary infrastructure; (6) joint ventures “ private and public sector partners pool assets, resources and expertise in a partnership to deliver value for both partners; (7) partnership investments “ the public sector contributes funds to investment projects by the private sector in anticipation of the public sector sharing in the returns generated by the investments; and (8) policy partnerships “ private-sector individuals or entities are involved in the development or implementation of public policy.

In the Nigerian context, the Infrastructure Concession and Regulatory Commission (ICRC) recognises various PPP models on the basis of degree of risk allocation and the length of contract period (Infrastructure Concession and Regulatory Commission, 2024). The ICRC highlights the following PPP variants, among others: Service Contract PPPs, Management Contract PPPs, Lease Contract PPPs, Concession Contract PPPs (which are often referred to as core PPPs) and BOTs. PPP variants would also include Rehabilitate/Build Operate Transfer, Design Build, Finance, Operate and Transfer, etc.

In Nigeria, as in other countries, there are a number of reasons for resorting to PPP arrangements, including lack of adequate funding provision in the budgets of nations or subnational entities and relative inefficiency in the public sector with respect to the procurement and management of public infrastructure. While these reasons may appear to be genuine, it is equally important to understand the peculiar challenges of specific jurisdictions. Cultural issues, environmental characteristics and peculiarities of nations can affect the success or otherwise of policies and

intervention efforts. The failure of some past intervention efforts in developing countries has been attributed partly to the failure to carry key stakeholders along or to understand their perceptions on relevant issues (Dada & Oyediran, 2016). Accordingly, this study aims to generate an audit and assessment of the perceptions of critical stakeholders on the benefits, abuse and challenges associated with PPPs that could form a baseline for decision-making and future intervention efforts on PPP projects. Generally, the study should be of benefit to public- and private-sector actors and investors in infrastructure projects.

In essence, while appreciating the potential or advantages of PPP, it is also important to understand the challenges in the Nigerian environment so that investors and other stakeholders can be appropriately guided when taking critical decisions. Thus, with a view to helping stakeholders secure their investment when executing and managing PPP projects, this study assesses the perceptions of key stakeholders on the benefits, disadvantages and challenges of PPP and its variants in the procurement of infrastructure. The specific objectives of the study are to: (1) investigate the perceived advantages or benefits of PPP or its variants; (2) assess the disadvantages or abuse of PPP; and (3) investigate the challenges of PPPs.

2.0. PPP and its Use in Nigeria

A distinguishing characteristic of PPP is that there must be at least a public-sector organisation and at least one private-sector organisation involved in the project execution from design to operation before the facility reverts to the government or its agency. Additionally, from the project procurement paradigm perspective, PPP exhibits the concept of integration of design with construction. However, from the financial and investment perspective, both parties have equity contribution in the financing or funding of the project. In recent times discourse, research and experience on the use of PPP have gained ascendancy and attention in various parts of the world (Roehrich & Lewis & George, 2014; Akintoye et al., 2016; Garg & Garg, 2017; Shi, Duan, Wu, Zhang & Feng, 2020), with authors addressing different country perspectives and experiences. While the commonality in PPP is that the public and private-sector entities cooperate in infrastructure provision and/or service provision, the experience and scope of application of the use of PPP vary across nations.

The use of PPP in Nigeria started with the establishment of a legal and regulatory environment for it, when in 2004 the country's Infrastructure Concession and Regulatory Commission Act was passed, with the Commission inaugurated in 2008 (Akpoghene & Nwano, 2019). Thereafter, the Nigerian Public Private-Partnership Network was established for PPP heads at the federal and state levels to interact and share ideas on PPP. Some states in Nigeria either created their PPP office or embarked on projects through the use of PPP. Lagos State, for example, established its own PPP office through which it executed PPP projects. Adjoining Lagos is Ogun State, which has more landmass and has emerged as a destination for new housing development and population migration. Dada and Oyediran (2016) examined the experiences and challenges of, as well as the prospects for, PPP projects in Nigeria, citing some ongoing PPP projects and stressing the necessity of stakeholder consultation and engagement in the development and successful execution of PPP projects.

Akpoghene and Nwano (2019) explored the history and types of PPP in Nigeria, writing from the perspective of the institutional and regulatory framework for PPP in Nigeria. However, the authors failed to examine the perceptions and experiences of stakeholders, actors or users of the PPP in both the private and public sectors. Other studies on PPP in Nigeria, especially those on critical success factors for PPP projects such as Dada, Oyediran and Okikiolu (2006), Dada and Oladokun (2010) and Dada and Oladokun (2013), did not specifically address stakeholder perceptions on the benefits and abuse of PPP and its variants in project implementation. Yet, the perception and views of stakeholders matter significantly when it comes to project matters. Clearly, stakeholder consultation, engagement and management remain key to the success of many projects and

programmes. Therefore, this study assesses the views and experiences of some stakeholders in the PPP chain, given that their perceptions have the potential to affect objective reality.

One significant issue with PPP and its variants or models is the collaboration between at least one public-sector organisation and at least one private-sector organisation in the execution and management of a public-sector project. Another distinguishing characteristic is the integration of design with construction. Each partner in a PPP arrangement is a principal and must make specific contributions in the PPP arrangement (Kurniawan, Ogunlana, Motawa & Dada, 2013). The undergirding principle is private-sector efficiency optimisation combined with the expected accountability of the public sector. It should be noted that, in some instances, accountability involves being able to explain every amount spent on a project but does not necessarily translate into economic use of resources. Thus, while the public sector often emphasises due process in the procurement of goods and services, due process may not necessarily mean procuring the cheapest good or service. Thus, procuring ‘cheap’ goods or services while circumventing procedures and due process will amount to an infraction according to the Nigerian Public Procurement Act 2007. Keeping to established procedures is therefore of prime importance in public-sector procurement. This may be understandable because every government has political goals or inclinations, one of which is the idea of accountability and responsibility to the electorate or citizens. Private-sector entities owe no such political responsibility and are accountable to their shareholders, who are interested in the bottom line. As such, the private sector is only interested in profitability, economy and the bottom line. Accountability does not necessarily translate to economy value for money. However, one of the key requirements for PPP is value for money. The PPP project may be a physical, tangible infrastructure project or a service such as collecting of tolls.

Many Nigerian PPP projects have not quite been assessed critically because they are still within their concession period. Assessments based on the traditional criteria of time, cost and quality in relation to design and construction may not necessarily reflect the complete picture, as a PPP project continues to run operation costs in its useful life. Despite this limitation, however, it is important to consider the perceptions of PPP stakeholders at any stage of project development. Two examples of PPP projects in Nigeria are the Lekki Toll Gate and the Murtala Muhammed Airport Terminal 2 (MMA 2) among others. The Infrastructure Concession and Regulatory Commission (ICRC) is the agency responsible for federal PPP projects in Nigeria. In 2012, the ICRC published information on PPP projects showing the name of the client, the description of the project, the preferred PPP model and the revenue model. Dada and Oyediran (2016) reported a sector analysis of PPP projects on the basis of number and monetary value and also along World Bank categorisation. Between 1990 and 2012, the telecommunications sector had the highest value of 25.12 billion US dollars, followed by the transportation sector with 3.359 billion dollars.

More recently, the ICRC has shown listings of PPP projects at various stages, such as ‘PPP project development and preparation phase’, ‘PPP procurement phase’ and ‘PPP implementation phase’ (ICRC, 2024). Towards the close of the first quarter of 2024 there were 92 projects in all, with two of them being under ‘development’, 20 under ‘procurement’ and 70 at ‘implementation’ stage. The projects spanned various sectors including energy, transport, social life/health, industry and telecommunications, each being sponsored by one federal government agency or another. An example of a project under the development phase is ‘rehabilitation and concession of the Western Eastern Rail Lines’. An example of a project under implementation stage is the Tin Can Island Multi-Services Container Terminal, Lagos, sponsored by the Nigerian Ports Authority. Table 1 is an edited extract from the PPP Project Disclosure Portal of the ICRC and other sources showing some PPP projects and their status. As earlier indicated the PPP model, along with its variants, is used not only for infrastructure provision but also for tolling and service provision. The Lagos Bus Rapid Transport (BRT) is an example of a PPP model in transport provision, as executed by Lagos State, a subnational entity in Nigeria.

Table 1: Some PPP projects in Nigeria and their status

Item	Project Name	Sector	State	Stage	Sponsoring Agency	Start Date or Date of reported start milestone	Specific milestones reported and updates
1	MMA2 Terminal	Transport (aviation)	Lagos	Implementation	Federal Airports Authority of Nigeria (FAAN)	Commercial close; consensus agreement between parties was signed	Initial agreement was for 12 years. Ministerial approval for extension to 36 years was obtained by operator which is still being contested by FAAN. Last update on November 15, 2018
2	Dagbolu Inland Container Depot	Transport	Osun	Procurement	Nigerian Shippers Council	Transaction Advisors appointed December 19, 2016	Outline business case issued November 23, 2017; last status update November 15, 2023
3	Omi-Kampe Dam	Energy	Kogi	Procurement	Federal Ministry of Power, Works and Housing	Project proposal enters list of published projects pipeline on January 13, 2013	Request for proposal made April 20, 2017; last status update November 15, 2023
4	Gurara 30MW Hydropower Dam, Kaduna	Energy	Kaduna	Procurement	Federal Ministry of Water Resources	Project proposal received March 3, 2016	Full Business Case (FBC) Compliance Certificate issued on March 18, 2019
5	Rehabilitation and Concession of the Western Eastern Rail Lines	Transport	Abia, Rivers, Lagos, Oyo, Kwara, Niger, Yobe, Kaduna, Faguu, Bauchi, Gombe, Plateau, Borno, Kano	Development	Nigeria Railway Corporation	Project proposal received by ICIRC January 1, 2017	Selection of preferred bidder May 25, 2017
6	Tin Can Island Multi-Services Container Terminal	Transport	Lagos	Implementation	Nigerian Ports Authority	RFP done November 11, 2004	Expiry of contract agreement set for 9 February, 2030

Source: Infrastructure, Concession and Regulatory Commission (2024)

Stakeholder engagement, consultation and overall management remains a key issue in the success of intervention projects. PPP arrangements may involve long-term engagement and organisation for delivering and running projects from conception to the project life cycle with the use of an SPV. The organisations, operating individually outside a PPP model, may have varying organisational goals, objectives and metrics of project success. In a PPP arrangement, however, the organisations form a single entity, i.e. an SPV, to execute and run the project. Stakeholder perceptions on PPP projects can affect market behaviour, patronage and consumer response (Weaver, 1981; Lutz et al., 2013). In that regard, this study investigates stakeholder perceptions in the two sectors with respect to the advantages, abuse and institutional/capacity building challenges of PPP projects and their transactions. It should be noted that public perception matters with regard to policy choices and their implementation, even as the private sector commits immense financial and other resources to PPP projects. A study of the perceptions of stakeholders about PPP for infrastructure development or service provision remains a necessary step for stakeholder buy-in or engagement. As already noted, this study focuses on stakeholder perceptions on the benefits, abuse and challenges of PPPs.

3.0. Research Methods

The research involved the administration of a questionnaire and subsequent analysis of collected data. Copies of the questionnaire were purposively administered on some professionals in the built environment, as well as in the legal and financial sectors of Lagos and Ogun States. (Lagos, Nigeria's former capital, hosts some completed or ongoing PPP projects. Ogun State adjoins Lagos and has recently emerged as a site for large developmental projects, given its much larger land mass). Each professional had made some contribution to a PPP project in either the public or private sector, hence the resort to them. As there was no directory of such professionals during the data collection stage, the researchers adopted purposive sampling to determine those to be consulted. A total of 115 hard copies of the questionnaire were administered, with 86 of them retrieved.

This work is part of a larger investigation of stakeholder perceptions on PPP projects in Nigeria. The questionnaire was in two broad parts: the first part elicited biographical information and the second part sought information on the challenges of PPP projects, the advantages or pay-offs of PPPs, and the disadvantages or the rip-offs. Specifically, the questionnaire sought to know the profession of respondents and the states of the federation where they had gained PPP experience. Respondents were requested to indicate their sector (public or private) and when they acquired their PPP experience. Respondents were also requested to indicate the locations or states where they had PPP experience or any of its variants (e.g., Build-Operate-Transfer [BOT]). They were also requested to indicate the type of projects on which they had gained PPP experience as well as their level of experience. Information was also sought on years of experience of respondents in any area of PPP transaction or of its variants. Questions required respondents to express their views on particular issues with 'PPP and its variant BOT'. PPP and BOT were the two models mentioned in the questionnaire. Moreover, information on the major focus of respondents' organisations in PPP projects was also requested either as public-sector client/ promoter or as private-sector entity (consultant, trainer, researcher, contractor or operator). The focus here refers to the mandate of the government ministry, department or agency or the business focus of the private-sector organisation involved in the PPP or its variant.

Also requested was the area of experience by the respondent or his organisation in the PPP value chain. The phases of projects on which respondents had PPP experience were also investigated. Respondents were requested to indicate as appropriate their experience or the experience of their organisations on PPP projects using the scale comprising 1 = no experience, 2 = low experience, 3 = high experience, and 4 = very high experience. The frequency of some challenges on PPP projects was sought on an ordinal scale of 1, 2, 3, and 4 respectively standing for 'Never',

'Sometimes', 'Often' and 'Always'. Respondents were also requested to rate to what extent they agreed with some factors as benefits for PPP (or its variants) on projects they had been involved in, using the key ranging from 1 = strongly disagree and 2 = disagree to 3 = agree and 4 = strongly disagree. The dominance of some factors as rip-offs or abuses in the execution of PPP projects was also investigated on an ordinal scale calibrated as 1 = non-existent, 2 = not dominant, 3 = fairly dominant, 4 = dominant and 5 = very dominant. The data obtained were subjected to both descriptive and inferential statistical analyses.

4.0. Analysis, Results and Discussion

4.1 Descriptive Statistical Analyses

Table 2 shows the questionnaire response rate.

Table 2: Questionnaire response rate

State	Number distributed	Number returned	Response Rate
Lagos	90	64	
Ogun	25	22	
Total/aggregated	115	86	75%

A total of 115 copies of the questionnaire was administered and 86 of them were returned, making it an aggregated response rate of 75%. This response rate is fairly high with respect to research in the construction management and procurement fields.

Table 3 shows some characteristics of the respondents

Table 3: Characteristics of respondents

Details	Frequency	Percentage
States in Nigeria where respondents had their PPP experience		
Lagos	60	73.2
Ogun	11	13.4
Abuja	4	4.9
Oyo	4	4.9
Kaduna	2	2.4
Kano	1	1.2
Total	82	100.0
Profession of respondents		
Accounting and finance related	26	31.0
Engineering	18	21.4
Quantity Surveying	16	19.0
Transport analyst/ manager	8	9.5
Building	6	7.1
Architecture	4	4.8
Law	2	2.4
Information technologist/ ICT	2	2.4
Town planning	1	1.2
Surveying	1	1.2
Sector of respondents when they had PPP experience		
Public	62	72.1
Private	24	27.9
Total	86	100.0
If Private sector, indicate where		
For profit organization	61	91.0
For non-profit organization	6	9.0
Total	67	100.0
Years of experience of respondents in any area of PPI transaction or that of its variants such as BOT etc		
1 - 2 years	31	36.5
3 - 5 years	22	25.9
6 - 8 years	19	22.4
above 8 years	13	15.3
Total	85	100.0
Major business focus or mandate of respondents' organisation in PPP		
Public sector client or promoter	38	44.2
Private sector- consultants, trainer, researcher	18	20.9
private sector operator	17	19.8
Private sector contractor	13	15.1
Total	86	100.0

With respect to the states where the respondents had their PPP experience, Table 2 shows that Lagos ranked highest with 73.2%, followed by Ogun State with 13.4% of respondents. Kano ranked least. The ranking of Lagos on the PPP experience is understandable, since the state remains the country's economic nerve centre. The presence of some developmental projects such as the Lekki Toll Gate and associated highways, as well as some housing projects being executed with PPP projects, also gives Lagos the edge in PPP experience. Even the Lagos Bus Rapid Transport (BRT) incorporated some form of PPP.

With respect to professions of respondents with PPP experience in any of the stages of PPP transaction and execution, accountants ranked highest at 31.0%, followed by engineering and quantity surveying, transport and logistics professionals, and then building professionals. The profession with the least frequency were surveying and town planning, which tied. Understandably, the wide array of professional respondents extended beyond the regular built environment professionals because PPP transactions in some parts go beyond the traditional procurement paradigms of mere designing and construction but extends to financial, investment analysis, marketing and legal aspects, etc., hence the inclusion of other legal, financial, accounting, banking and economy professionals, etc. Forty-two percent (42%) of respondents had PPP experience of not greater than 5 years, while 10.2% had PPP experience of more than 10 years. Over seventy-two percent (72.1%) of PPP experience was obtained in the public sector, while 27.9% of PPP experience was obtained from the private sector. Ninety-one (91%) of respondents in the private sector indicated that their organisations were for profit-making and 9% described theirs as non-profits.

Table 3 reveals respondents' years of experience in any area of PPP transaction, with 36.5% having between 1 and 2 years of experience, 25.9% having between 3- and 5-years' experience, 22.4% having between 6 and 8 years of experience and 15.3% having above 8 years' experience in PPP transactions.

A total of 44.2% of respondents indicated that the core or most important role of their organisation in PPP transactions was as client or project promoter. This was followed by 23.9% of respondents whose organisations focused on PPP transactions as private-sector PPP consultant, trainer or researcher. Some 19.8% of the respondents had their organisations in the private sector as PPP operators, while the remaining 15.1% were in the private sector as contractor organisations.

Table 4 indicates the ranking of the phases or stages of PPP projects on which respondents had PPP experience.

Table 4: Ranking of phases of projects on which respondents had PPP experience

Stages in PPP procurement	N	Mean score	Rank
PPP construction phases	86	2.60	1
PPP facility operation phase	86	2.57	2
PPP contract documentation	86	2.51	3
PPP closure phase	85	2.48	4
PPP negotiation	86	2.45	5
PPP proposal writing	86	2.31	6

Table 4 indicates that the respondents had their highest experience in the construction phase. In other words, the construction phase is the phase where respondents had the highest experience, followed by the facility operation phase and the PPP contract documentation phase. The phase with the least experience of participants was the PPP proposal writing phase.

Table 5 reveals the mean scores, rankings and advantages of PPP and its variants.

Table 5: Advantages of PPP or its variants

Underlisted factors as advantages	N	Mean score	Rank
Private sector initiating projects that can benefit the society	86	3.16	1
Getting the private sector involved in national development	85	3.09	2
Accelerated infrastructure upgrade and development in Nigeria	86	3.03	3
Unlocking the entrepreneurial ability of the private sector	85	2.96	4
More careful approach in investing funds in infrastructure	86	2.95	5
Changing attitude of citizens to protect common good or infrastructure	84	2.90	6
Citizens jettisoning the sole provider perception they have about government with respect to infrastructure provision	85	2.89	7
Creating a new set of PPP professionals or workforce	86	2.70	8

According to Table 5, what is perceived as the highest advantage or pay-off of PPP is the 'private sector initiating projects that can benefit the society'. This suggests that the private sector can take the initiative to propose a project to a government agency, thereby making the public and private sectors partners in project initiation and development. This situation translates into involving the private sector in national development – a factor ranked second. The least disadvantage is 'creating a new set of PPP professionals or workforce'. It should be noted that all the mean scores hover around the 3.00 value, thus aligning with the 'Agree' position by respondents. This further indicates that all the perceived advantages elicit an average response indicating agreement with all the perceived advantages and pay-offs of PPP.

Below is the descriptive statistical table (Table 6) showing the mean scores and rankings of the frequency of the challenges of PPP and its variants.

Table 6: Frequency of institutional/capacity-building challenges on PPP projects and its variants

Challenges	N	Mean score	Rank
Political interference outside the agreed rules of running the PPP framework	86	2.43	1
Opacity in the PPP projects	85	2.31	2
Challenges of managing interfaces and overlaps	86	2.26	3
Lack of political commitment from the public sector	84	2.24	4
Ambitious projects without adequate financial, viability or investment analysis	85	2.22	5
Challenge of securing commitment of project sponsors	85	2.22	6
Unscientific determination of concession period	84	2.21	7
Personality, relationship problems among participants	86	2.14	8
Lack of knowledge for regulatory framework for PPP	86	2.05	9
Unclear definition of ownership structure	85	2.02	10
Unclear definition of project objectives and other variables	86	1.99	11
Inability to design functional facility required by client	86	1.93	12
Inability to initiate or package PPP projects	85	1.92	13

On the surface, Table 6 indicates that of all the challenges identified, 'political interference outside the agreed rules of running the PPP framework', with a mean score of 2.43, is the highest-ranked institutional and capacity building challenge in PPP projects. Opacity in the PPP projects came second while challenges of managing interfaces and overlaps ranked third. Inability to initiate or package PPP projects ranked least. However, it should be noted that the study investigated and assessed the frequency of the occurrence of challenges in PPP procurement. The frequency was measured on an ordinal scale of 1, 2, 3 and 4, standing for 'Never', 'Sometimes', 'Often' and 'Always'. A closer examination of Table 6 reveals that all the mean scores approximate to '2', thus implying that those challenges 'sometimes' occurred. Even though the mean scores of those challenges indicate a low aggregate assessment of 'sometimes' in occurrence, the low frequency may not necessarily translate to low impact. This research does not investigate the perceived impact of the occurrence of these challenges. The existence of these

challenges even though with average frequency of 'sometimes' has implications. The existence of one or more of these challenges aligns with Dada and Oyediran (2016) who identified the need for capacity to prepare PPP business cases to meet, among others, bankability requirements, as a critical challenge in PPP projects in Nigeria.

Table 7 indicates the disadvantages and abuses with appropriate rankings, associated with the execution of projects through PPP or its variants.

Table 7: Ranking of disadvantages and abuse in execution of PPP projects

Disadvantages or abuse	N	Mean score	Rank
Embezzling public fund and reinvesting in PPP as private-sector investor	85	3.56	1
Corrupt enrichment and stripping of public assets in the name of PPP	86	3.48	2
Politicians executing projects in the name of government and later transferring it to themselves on leaving power	86	3.42	3
Exploiting loopholes in the contract documentation	86	3.38	4
Tailoring the contract condition to unduly favour a party	84	3.31	5
Ambiguous clauses in contract conditions that make settlement of disputes difficult	86	3.29	6
Putting untrained or unqualified staff in the transaction chain	85	3.22	8
Creating loopholes in the contract documentation	86	3.17	9
There is abuse at the calculation of concession period	86	2.94	10

Table 7 indicates that the most critical form of abuse is the embezzlement of public funds (with a mean of 3.56) and its subsequent reinvestment in PPP as a supposed private-sector investor. The second most critical form of abuse is corrupt enrichment and stripping of public assets in the name of PPP. (Even though these abuses are deviations, they can be real in project execution, irrespective of procurement method (at least in the perception of respondents) and are therefore worth investigating). Either party could be involved in such abuse, which occurs where projects or endeavours are embarked upon in the guise of PPP. The Ajaokuta Steel Project in Nigeria is an example of a project dogged with challenges, controversies and failures. Even though no less than \$8 billion had been spent on the project so far, the Ajaokuta Steel Company had not produced a single sheet of steel by December 2017. The light mills were finally put into operation in 2018 for small-scale fabrication, with 75% of the plant abandoned (Adejuge, 2024). It should be noted, however, that the Ajaokuta project was not a PPP arrangement from inception, until the federal government resorted to that arrangement following decades of setback. Nevertheless, the project remains moribund despite government efforts at involving private investors in it and committing \$496 million to contractors between 2008 and 2022. Additionally, some of its assets have been reportedly stripped (*Premium Times*, 2024). The third most critical abuse is 'politicians executing projects in the name of government and later transferring it to themselves on leaving power'. Public officials convert the assets through some 'paperwork' to private assets at the end of their tenure or public life. This occurrence is obviously abuse of office and a threat to the successful use of PPP. Where these abuses occur, there is a threat to the success of the PPP project no matter the noble intentions about the project. Corruption and underhand dealings, often unreported or under-reported, threatens the national commonwealth. Professionals and other stakeholders must not shy away from tackling this problem. Ranking least with a mean score of 2.94 was 'abuse at the calculation of concession period'; this mean score points to 'fairly dominant' in assessment. Considering the scale used for responses (1 = non-existent, 2 = not dominant, 3 = fairly dominant, 4 = dominant and 5 = very dominant) Table 6 suggests that all mean responses hover around the 'fairly dominant' and 'dominant response'. Investors may be interested in this response; the public sector or government and all stakeholders can take action to sanitise the business environment of these challenges to attract investors. It should be noted that all responses were nearly 3.00 and above. The range of mean scores aligned with the 'fairly dominant' and 'dominant' abuse or disadvantage.

4.2. Inferential Statistical Analysis

Further to the descriptive analyses done on the data obtained, some hypotheses were formulated for testing.

Hypothesis One: There is no significant difference between the private sector and public sector with respect to benefits of PPP and its variants.

Table 8 shows the results of differences between the private sector and the public sector on the benefits of PPP and its variants.

Table 8: Test of differences between the private sector and public sector on benefits of PPP and its variants

Advantages		N	Mean	t-value	p-value	Decision
Unlocking the entrepreneurial ability of the private sector	Public	61	2.89	-1.276	.205	Accept
	Private	24	3.17			
Creating a new set of PPP professionals or workforce	Public	62	2.65	-1.103	.275	Accept
	Private	24	2.83			
Getting the private sector involved in national development	Public	61	3.11	.342	.733	Accept
	Private	24	3.04			
Accelerated infrastructure upgrade and development in Nigeria	Public	62	2.98	-.883	.380	Accept
	Private	24	3.17			
Changing attitude of citizens to protect common good or infrastructure	Public	60	2.82	-1.675	.098	Accept
	Private	24	3.13			
More careful approach in investing funds in infrastructure	Public	62	2.85	-2.196	.031	Reject
	Private	24	3.21			
Citizens jettisoning the sole provider perception they have about government with respect to infrastructure provision	Public	61	2.85	-.710	.479	Accept
	Private	24	3.00			
Private sector initiating projects that can benefit the society	Public	62	3.10	-1.197	.235	Accept
	Private	24	3.33			

Table 8 shows the p-values of the respective tests of differences between the public and public sector on the advantages or benefits of the use of PPP or its variants. The p-values for the t-test for all but one of the variables or benefits of PPP are all higher than 0.05, implying that there are no significant differences between the public and private sectors on all but one the variables. The homogeneity of perceptions on all benefits but one throws up the possibility of intervention efforts by parties on PPP meeting with less resistance or divergence of opinions on those issues. However, there was a significant difference between the public and private sectors on the perceived benefits of 'a more careful approach in investing funds in infrastructure'. The two sectors differ significantly in their perceptions – a fact that may require further investigation. Additionally, reports of corruption and abuse of office emanating from media outlets and other organisations raise doubts about transparent investment of public funds. Some of the respondents might have privileged information that can only be revealed through whistleblowing. As their responses were anonymous, the respondents might have felt some freedom in their assessment. Oftentimes, corruption does not leave a trail; however, those who have knowledge of corruption transactions manifesting in wrong investments may fill the questionnaire where anonymity is guaranteed.

To investigate the existence or otherwise of a significant difference between the private and public sectors on the perceived challenges of PPP and its variants, hypothesis two was postulated as indicated below.

Hypothesis Two: There is no significant difference between the private sector and the public sector with respect to challenges on PPP projects.

Table 9 shows the report of the test of the hypothesis.

Table 9: Test of difference between the private sector and public sector on challenges in PPP projects

Challenges		N	Mean score	t-value	Sign	Decision
Inability to initiate or package PPP projects	Public	61	1.85	-1.266	.209	Accept
	Private	24	2.08			
Inability to design functional facility required by client	Public	62	1.84	-1.646	.104	Accept
	Private	24	2.17			
Lack of knowledge for regulatory framework for PPP	Public	62	1.98	2.21	-.964	.342
	Private	24	2.21			
Lack of political commitment from the public sector	Public	61	2.15	-1.389	.174	Accept
	Private	23	2.48			
Challenge of securing commitment of project sponsors	Public	61	2.15	-1.219	.231	Accept
	Private	24	2.42			
Unclear definition of project objectives and other variables	Public	62	1.85	-2.182	.036	Reject
	Private	24	2.33			
Challenges of managing interfaces and overlaps	Public	62	2.15	-1.797	.081	Accept
	Private	24	2.54			
Personality, relationship problems among participants	Public	62	2.03	-1.995	.053	Accept
	Private	24	2.42			
Ambitious projects without adequate financial, viability or investment analysis	Public	61	2.13	-1.734	.087	Accept
	Private	24	2.46			
Unclear definition of ownership structure	Public	61	1.98	-.660	.511	Accept
	Private	24	2.13			
Unscientific determination of concession period	Public	61	2.20	-.301	.764	Accept
	Private	23	2.26			
Political interference outside the agreed rules of running the PPP framework	Public	62	2.34	-1.548	.125	Accept
	Private	24	2.67			
Opacity in the PPP projects	Public	61	2.33	.374	.709	Accept
	Private	24	2.25			

The results from Table 9 indicate that no significant differences exist between the private and public sectors with regard to all the challenges except that of 'challenges of managing interfaces and overlaps'. This decision is taken because the p-value for each of the challenges except 'challenges of managing interfaces and overlaps' was greater than 0.05. In essence, it is only in the 'challenges of managing interfaces and overlaps' that significant differences exist between the private and public sectors. While personality and relationship issues have been found to affect project outcome as reflected in Dada (2014), warranting further investigation is the fact that the two sectors (public and private) differ in their assessment of this challenge of 'managing interfaces and overlaps'.

Hypothesis Three: There is no significant difference between the private sector and the public sector with respect to the disadvantages of PPP.

Table 10 shows the results of the test of difference between the private and public sectors about disadvantages of PPP or its variants.

Table 10: Test of difference between the private sector and public sector about disadvantages of PPP or its variants

Disadvantages /Abuses		N	Mean	t-value	Sign	Decision
There is abuse at the calculation of concession period	Public	62	2.84	-1.189	.238	Accept
	Private	24	3.21			
Tailoring the contract condition to unduly favour a party	Public	60	3.23	-.925	.357	Accept
	Private	24	3.50			
Ambiguous clauses in contract conditions that make settlement of disputes difficult	Public	62	3.11	-2.608	.011	Reject
Corrupt enrichment and stripping of public assets in the name of PPP	Public	62	3.32	-1.954	.054	Accept
	Private	24	3.88			
Embezzling public fund and reinvesting in PPP as private sector investor	Public	61	3.34	-2.713	.008	Reject
	Private	24	4.13			
Politicians executing projects in the name of government and later transferring it to themselves on leaving power	Public	62	3.29	-1.496	.138	Accept
	Private	24	3.75			
Putting untrained or unqualified staff in the transaction chain	Public	61	3.13	-1.312	.193	Accept
	Private	24	3.46			
Creating loopholes in the contract documentation	Public	62	3.08	-1.318	.191	Accept
	Private	24	3.42			
Exploiting loopholes in the contract documentation	Public	62	3.29	-1.357	.178	Accept
	Private	24	3.63			

Table 10 shows a significant difference (where $p < 0.05$) for embezzling public fund and reinvesting in PPP as private-sector investor, where $p = 0.008$. Equally, there is a significant difference in the perception of the public and private sectors on the challenge of 'ambiguous clauses in contract conditions that make settlement of disputes difficult'.

The result of the descriptive analyses of this study shows that most of the respondents had their PPP experience in Lagos State, with more than half of the respondents (52.3%) being professionals in the construction industry. Some 37.7% of the respondents had between six years and above in PPP, thus indicating the relative novelty of the PPP model in the national economy, especially in the area of construction projects. Some 72.1% of respondents had their PPP experience in the public sector. Public sector clients accounted for 44.2% of respondents' organisations in the study. The major area of consultancy in the value chain of PPP project transactions is in the built environment consultancy, at 68.8%. This implies that more consultants on the PPP transactions are built environment professionals. There are other consultants from other sectors such as finance and law. Analysis of the advantages of PPP or its variants posted high mean scores, with none being below a 2.0 mean score; this suggests that respondents' perceptions of the advantages accruing to PPP and its variant were high. However, PPP models also had disadvantages that rank higher than the mean scores of the advantages. The inferential statistical analyses indicate that in virtually all parameters used for test of differences between the public sector and the private sector, there were no significant differences between the public sector and the private sector on virtually all items used to assess the benefit, abuse and challenges of PPP.

5.0. Conclusion

The top two advantages of PPP and its variants were as follows: (i) private sector initiating projects that can benefit the society, and (ii) getting the private sector involved in national development. Furthermore, there was a significant difference between the public and private sectors on just one issue: the perceived benefits of 'a more careful approach in investing funds in infrastructure'. The two sectors differed significantly in their perceptions, hence the need for further investigation.

The most critical disadvantage or abuse of PPP is the embezzlement of public fund and its subsequent reinvestment in PPP as a supposed private-sector investor. The second most critical abuse is corrupt enrichment and stripping of public assets in the name of PPP. Furthermore, there is a significant difference in the perception of the public and private sectors on the challenge of 'ambiguous clauses in contract conditions that make settlement of disputes difficult' and also 'embezzling public fund and reinvesting in PPP as private-sector investor'.

With respect to the frequency of occurrence of institutional or capacity building challenges on PPP projects, the study reveals that all the 13 challenges 'sometimes' occurred amidst other options such as 'never', 'often' and 'always'. The two most critical challenges were political interference outside the agreed rules of running the PPP framework and opacity in PPP projects. The study further reveals that no significant differences exist between the private and public sectors regarding all the challenges except that of 'managing interfaces and overlaps'.

In all, the study analysed stakeholder perceptions with respect to advantages, disadvantages, abuse and challenges in the use of PPP or its variants. There is congruency or homogeneity of perceptions in all but one issue of advantages of PPP, all but two issues under the disadvantages and all but one issue under challenges. While this study acknowledges that this work is part of a larger one, the authors equally acknowledge the limitation of number of states and stakeholders investigated.

In view of the fact that perceptions, whether right or wrong, can affect objective reality and marketing preferences, the authors recommend a continuous and systematic audit of views and the perceptions of stakeholders, including those of the host communities and others who would be impacted by PPP projects. There should also be a closer investigation of those factors wherein the private and public sectors posted significant differences, with a view to investigating underlying phenomena regarding the use of PPP and its various models.

This work has contributed to knowledge by determining the role of subjective reality, i.e. perception, in objective behaviour and acceptance or patronage of procurement or development concepts and paradigms. In terms of policy and practice implications, therefore, the parties or partners involved in PPP projects are advised against discountenancing the perceptions of stakeholders, since such perceptions can affect their buy-in. No doubt, stakeholder engagement is key in PPP projects as a way to reduce challenges in the multi-staged long-term PPP arrangement that spans design, construction and facility operation.

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