

Procurement Dynamics in Infrastructure Development: Leveraging Public-Private Partnerships (PPPS) For Sustainable Growth in Nigeria

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ABSTRACT

Procurement arrangements increasingly condition the performance, bankability, and durability of public-private partnership infrastructure projects in Nigeria. Particular attention is paid to procurement as the institutional space where contractual design, organisational behaviour, and financial structuring intersect throughout the project lifecycle. Empirical coverage spans eight major PPP infrastructure projects across transport, energy, aviation, maritime logistics, and urban mobility sectors, reflecting Nigeria's contemporary infrastructure landscape. A mixed-method, comparative case study design was adopted to capture both process-driven and performance-related dimensions of PPP procurement. The analysis combined a thematic examination of experiential and institutional evidence with systematic documentary analysis and descriptive quantitative indicators drawn from procurement and project records. Thematic analysis served as the primary analytical tool, complemented by cross-case comparison and contextual quantitative measures relating to timelines, approvals, and contractual adjustments. The results reveal recurring patterns across projects, including weak project preparation, strained bid evaluation processes, ambiguous allocation of revenue and macroeconomic risks, prolonged transitions to financial close, coordination gaps among oversight bodies, and governance pressures during implementation. These patterns demonstrate how early procurement-stage decisions reverberate through financing, contract management, and lifecycle performance. The analysis highlights the centrality of procurement governance to project bankability, institutional credibility, and long-term infrastructure value, offering insights of direct relevance to advancing sustainable infrastructure delivery through PPPs in complex institutional environments.

Keywords: Public-Private Partnerships, Infrastructure Procurement, Procurement Governance, Project Finance, Risk Allocation, Financial Close, Contract Management

Introduction

Nigeria confronts a formidable infrastructure challenge that has long undermined its promise as Africa's largest economy. The country's total infrastructure stock is estimated at only 30% of gross domestic product (GDP), a level well below the roughly 70% benchmark widely regarded as necessary for sustainable economic development (Abdulkarim, 2023; International Trade Administration, 2025). This persistent deficit pervades critical sectors, including transportation, housing, power, and water, and impedes broad-based growth, industrial expansion, and societal well-being. Demographic pressure compounds the problem, as Nigeria's population continues to grow at an annual rate exceeding 2.5%, while some projections place the population near 400 million by 2050 (International Trade Administration, 2025). Under these conditions, existing infrastructure is at risk of being overwhelmed, amplifying the urgency of large-scale, sustainable infrastructure delivery.

In view of this reality, public-private partnerships (PPPs) present themselves as a credible strategy to mobilize private capital, technical expertise, and operational efficiency to complement limited public resources. Across the world, PPPs have been used to deliver critical infrastructure with varying degrees of success. In Nigeria, PPPs have already shown their transformative potential in sectors such as telecommunications. For instance, the liberalisation and private-sector participation in telecoms led to an explosion in mobile

connectivity, with mobile subscriptions rising from negligible levels in the early 2000s to over 219 million by 2025 (Nigerian Communication Commission, 2025). This telecom success demonstrates that when private ingenuity and investment are mobilized responsibly, rapid and large-scale infrastructure outcomes are inevitable.

Institutionally, the framework for PPPs in Nigeria is anchored by the Infrastructure Concession Regulatory Commission (ICRC), established to regulate and supervise PPP engagements on behalf of the federal government (Infrastructure Concession Regulatory Commission, 2025). As of 2024, ICRC reported managing approximately 69 active PPP projects spanning sectors such as transport, housing, energy, and water infrastructure. Among the more visible successes is the development of the terminal at Murtala Muhammed Airport 2 (MMA2) in Lagos, delivered under a concession arrangement with a private operator (Ayo-Vaughan et al., 2019). This shows that PPPs can work in Nigeria, but scaling up such successes requires a deeper understanding of the procurement mechanisms that underpin them.

As of 2023, the housing deficit is at roughly 28 million units, a shortfall that continues expanding at an annual rate of about 900,000 units (Yagboyaju & Ikwuagwu, 2025). Meanwhile, estimates suggest that Nigeria requires around \$2.9 trillion over the coming thirty years to close its infrastructure gap and bring its infrastructure close to acceptable levels (Onwuka & Nwafor, 2018). In the transport sector, only about 60,000 kilometres of the nation's roughly 195,000-kilometre road network were under rehabilitation or active construction, which is a tiny fraction of what would be needed to ensure national connectivity and efficient mobility (Ishaya, 2017). On the energy front, power supply remains erratic in many parts of the country, a problem often linked not only to underinvestment but also to inadequate maintenance and weak infrastructure-management capacity (Adeshina et al., 2024). These gaps collectively hamper Nigeria's development, limit industrial capacity, hinder access to housing, reduce the quality of life, and discourage private investment.

Against this backdrop, how infrastructure projects are procured, especially under PPP arrangements, becomes a matter of strategic importance. The procurement dynamics determine whether projects are awarded, financed, implemented, and maintained in a manner that ensures value for money, accountability, risk mitigation, and sustainability. In Nigeria, lessons from past and ongoing projects highlight recurring challenges, such as weak risk allocation, corruption or mismanagement, political interference, delays, poor feasibility assessments, and weak oversight (Gognaje et al., 2023; Iroha et al., 2024). These challenges often lead to stalled or failed projects, undermining public trust in PPPs and dampening private-sector willingness to participate.

The current volatile economic climate of the country, with a debt-to-GDP ratio estimated at approximately 43% in 2023, reflects that public finances are under mounting pressures, which limit the government's capacity to fund large-scale infrastructures solely through public borrowing or budgetary allocation (International Trade Administration, 2025). In response, the government and policy drivers have increasingly viewed PPPs as a strategic alternative, complemented by instruments such as tax-credit schemes, dedicated infrastructure funds, and regulatory reforms aimed at making PPPs more attractive (Hassan & Fatile, 2022; Wang et al., 2024). However, without reforms in procurement systems, the risk remains that PPPs may fall short of their potential or replicate the inefficiencies and failures of traditional public procurement.

Beyond financing, there is a growing recognition that infrastructure development in Nigeria, and globally, must align with sustainability principles. International institutions such as the World Bank and United Nations Development Programme (UNDP) have underscored the need for sustainable infrastructure financing, promoting models that incorporate

environmental resilience, social inclusivity, and long-term viability (Meng et al., 2024; Mahmood et al., 2024). In Nigeria, this means infrastructure projects must go beyond delivering roads or power plants, and be designed and managed to withstand climate risks, serve vulnerable communities, and deliver lasting socio-economic benefits. For example, planned infrastructure such as the Lagos-Calabar Coastal Highway, expected to boost trade and regional connectivity across southern Nigeria, could integrate flood-resilient designs and climate-adaptive construction methods, thereby demonstrating how PPP-based infrastructure can support broader sustainable development goals.

Even though PPPs have been widely advocated in policy and practice, there remains limited academic work that focuses specifically on the procurement dynamics that drive PPP success or failure in Nigeria. This study filled that gap by examining procurement dynamics within PPP-based infrastructure development. The study traced and analysed the lifecycle of procurement, from project conception and bid solicitation, through contract award and financing, to implementation, risk management, and project delivery. This study identified structural barriers, institutional weaknesses, and procedural inefficiencies that jeopardize project outcomes, while proposing policy-relevant actions to enhance procurement governance, strengthen transparency, align incentives, and improve long-term performance in PPP projects in the country. These are aimed at rebuilding trust, delivering value, and leveraging PPPs to build a more sustainable and connected Nigeria.

Theoretical Framework

This study is grounded in four interrelated theories that provide a conceptual structure for understanding the procurement dynamics that shape the performance of public-private partnerships in Nigeria's infrastructure sector. These theories help clarify why procurement processes succeed or fail, how incentives and institutional influence outcomes, and why PPPs exhibit varying degrees of effectiveness across different project environments.

Public Choice Theory, developed by James Buchanan and Gordon Tullock (1962), provides an initial lens for understanding how incentive structures within institutions influence procurement behaviour. Their work argues that government officials, like private individuals, respond to incentives and may pursue personal or political interests rather than collective welfare. In the Nigerian PPP context, this theory helps explain persistent procurement inefficiencies linked to rent-seeking behaviour, discretionary decision-making, political patronage, and inadequate oversight. Where institutions lack transparency or accountability, procurement decisions can be distorted by interests that undermine competitive bidding and weaken project preparation. Public Choice Theory, therefore, underscores the need to examine how incentive structures and governance arrangements influence procurement outcomes in PPP projects.

Principal-Agent Theory, advanced by Michael Jensen and William Meckling (1976), further clarifies the contractual and monitoring challenges that arise once procurement responsibilities are delegated across multiple actors. This theory focuses on the relationship between a principal, who delegates authority, and an agent, who carries out tasks on the principal's behalf. In PPP arrangements, the government acts as the principal and the private concessionaire as the agent. Principal-Agent Theory highlights challenges such as information asymmetry, moral hazard, and weak monitoring. These challenges are visible in Nigeria, where procuring authorities sometimes lack the technical capacity to design robust contracts, interpret complex financial proposals, or enforce compliance during implementation. Contractual imbalances and incomplete monitoring frameworks often result in cost overruns, delays, or disputes. This theory provides a lens for assessing how procurement systems can strengthen contract design, oversight, and performance monitoring.

Insights from Transaction Cost Economics (TCE), introduced by Ronald Coase (1937) and later expanded by Oliver Williamson (1975, 1985), illuminate how procurement design choices condition negotiation costs, contract completeness, and post-award adjustments. TCE argues that the costs of negotiation, monitoring, enforcement, and adaptation shape economic exchanges. Infrastructure PPPs are long-term contracts that entail high transaction costs when procurement systems are weak, risk allocation is unclear, or regulatory uncertainty complicates contract execution. In Nigeria, long procurement cycles, weak feasibility assessments, delays in achieving financial close, and frequent renegotiations raise transaction costs significantly. TCE therefore provides a framework for examining how procurement quality, risk allocation, and contract completeness influence the economic efficiency of PPP projects.

Institutional Theory, rooted in the works of John Meyer and Brian Rowan (1977) and later Paul DiMaggio and Walter Powell (1983), situates procurement outcomes within the wider regulatory, political, and organizational environment in which PPPs are executed. It emphasises the role of laws, norms, organizational structures, and political environments in shaping behaviour and outcomes. Institutional Theory is particularly relevant to Nigeria, where procurement effectiveness depends heavily on regulatory consistency, bureaucratic capacity, political stability, and institutional credibility. Weak enforcement of procurement rules, fragmented regulatory oversight, and shifting policy priorities often undermine PPP implementation. This theory shows how institutional weaknesses can limit the effectiveness of even well-designed procurement frameworks.

These theories offer an integrated explanation of Nigeria's PPP procurement landscape and provide a comprehensive basis for analyzing how procurement dynamics influence transparency, competitive bidding, risk management, lifecycle governance, and long-term project sustainability. Nigeria's infrastructure gap persists partly because procurement systems remain inconsistent, weakly enforced, or poorly structured. Understanding procurement through these theoretical lenses makes it possible to identify the underlying causes of PPP failures and propose reforms that strengthen governance, improve accountability, and promote sustainable infrastructure development.

Empirical Literature

The contemporary literature on public-private partnerships offers a rich but uneven picture of how PPPs shape infrastructure delivery, sustainable development and the governance of procurement in developing economies. A first strand of work situates PPPs within the broader financing architecture for Sustainable Development Goals (SDGs). Obasa and Oluyomi (2024) show, through a qualitative synthesis of multilateral policy documents and secondary sources, how the United Nations and the World Bank have promoted PPPs as a mechanism for closing financing gaps in developing countries. Their analysis goes beyond the rhetoric of resource mobilization and stresses that partnerships which do not embed accountability, people-centred design, risk sharing and equitable revenue distribution tend to underperform. Similarly, Akomea-Frimpong et al. (2021), in a structured review of sixty Ghanaian PPP studies using content analysis, find that the PPP-SDG discourse has been strong around poverty, urban services and waste management, yet relatively weak on climate action, resilience, sustainable finance and clean energy. Both procurement and contractual arrangements are explicitly designed to internalize social and environmental objectives.

Related empirical work has also documented more direct empirical evidence on PPP impacts in specific infrastructure domains. Eleje et al. (2025) carry out a questionnaire survey of 351 residents across five South East Nigerian cities and test the hypothesis using chi-square statistics. They report that PPPs have contributed significantly to road infrastructure, water and waste management, educational facilities and health care in the study areas. In contrast,

Edogbanya and Adekeye (2024), using qualitative content analysis of ministry and regulatory documents for the transport sector during Nigeria's Fourth Republic, conclude that the impact of PPPs on road, rail and water transport has been less than impressive. They attribute this underperformance to poor maintenance culture, chronic underfunding, weak accountability and evasion of due process in contract awards. At a different scale, Chen (2021) employs stochastic frontier analysis and a spatial Durbin model on provincial panel data in China to show that PPPs can improve infrastructure input-output efficiency and generate positive spatial spillovers, particularly in transport. Dagaonkar (2025), using case studies of Indian smart city, metro and water projects, similarly finds that PPPs can support sustainable urban infrastructure where environmental and social objectives are built into project design. The contrast between the optimistic results of Eleje et al (2025) and the more cautious conclusions of Edogbanya and Adekeye (2024) underscores the importance of local institutional and procurement conditions in mediating PPP outcomes.

An expanding body of empirical research has concentrated on governance and institutional challenges that intersect with procurement dynamics. Itu and Kenigua (2021), drawing on qualitative secondary data, argue that Nigeria's adoption of PPPs is driven both by physical constraints and by the diversion of public funds into private pockets. They highlight the absence of a robust legal framework as a key factor behind project abandonment and weak contract continuity when political leadership changes. Nwangwu (2021) takes a largely doctrinal and analytical approach to argue that PPPs have been oversold as a costless panacea for Nigeria's infrastructure deficit. He emphasizes that PPPs are not free, and that poorly structured contracts can create significant contingent liabilities for the government. Both studies caution against conflating the PPP label with good procurement practice and call for more rigorous assessment of fiscal risks, contract design and long-term commitments.

The literature on cost engineering and financial oversight brings the procurement lens into sharper focus. Ibim and Dimkpa (2025) conduct a systematic review of Nigerian construction and procurement studies to examine the evolving role of cost engineering functions in sustainable infrastructure. They show that the shift from purely public provision to PPP-driven models has expanded the need for cost engineers and quantity surveyors to engage in contract administration, risk mitigation, financial planning and life-cycle cost optimization. Their analysis suggests that without strong cost engineering capacity embedded in procurement teams, PPPs are unlikely to deliver value for money or long-term financial sustainability.

Stakeholder perception, risk allocation and contract abuse are foregrounded in several empirical studies. Dada, Ogunlana and Anakor (2024) use a questionnaire survey of 115 built environment, legal and financial professionals in Lagos and Ogun States, with descriptive and inferential statistics, to rank PPP challenges and abuses. Political interferences outside agreed frameworks emerge as the most significant challenge, while embezzlement of public funds later reinvested into PPPs as private capital is identified as the most serious abuse. Their results reveal deep concerns about misaligned incentives and weak safeguards within PPP procurement and concessioning processes. Jayasena et al. (2022), based on qualitative interviews with experts in Hong Kong, identify transparency, citizen centricity and stakeholder management as decisive factors for successful PPP delivery of smart infrastructure. Their indicative framework highlights how regulatory, social and political factors interact with procurement arrangements to shape outcomes, reinforcing the relevance of the institutional landscape.

Comparative evidence from other jurisdictions similarly indicates the centrality of institutional capacity and risk frameworks. Das et al. (2025) develop a comparative analysis of PPP frameworks in developed and developing countries, focusing on risk management,

financing and sustainability. They find that stable legal systems and robust risk-sharing instruments in advanced economies tend to attract private investment on better terms, whereas weak regulation and limited institutional capacity in many developing countries heighten project risks and deter investors. Farooqi (2025), analysing Saudi Arabia's Vision 2030, shows how integrating green finance into PPPs can support climate-aligned infrastructure while leveraging private innovation. Dagaonkar's (2025) Indian cases and Chen's (2021) Chinese evidence similarly demonstrate that PPPs are more effective where procurement systems are predictable, technical capacity is strong, and sustainability criteria formalized. Akomea-Frimpong et al. (2021) and Obasa and Oluyomi (2024) provide African perspectives that point to similar institutional demands, while still noting substandard gaps in climate resilience and sustainable finance integration.

Across these bodies of work, several convergences and tensions emerge. There is broad agreement that PPPs can contribute to infrastructure development and economic growth when they are supported by clear legal frameworks, accountable procurement systems, credible risk allocation and strong technical capacity. Yet the Nigerian evidence, especially from Itu and Kenigwa (2021), Edogbanya and Adekeye (2024), Dada et al. (2024), and Nwangwu (2021), points repeatedly to political interference, weak enforcement of procurement rules, corruption, incomplete contracts and poor due diligence. These factors create cost overruns, project delays and, in some cases, outright failure. International studies, particularly Chen (2021), Das et al. (2025), Jayasena et al. (2022), Dagaonkar (2025) and Farooqi (2025), show that where institutions are stronger and procurement systems more disciplined, PPPs are better able to deliver efficient, sustainable and climate-responsive infrastructure.

What the literature failed to provide is a comprehensive, empirically grounded analysis of procurement dynamics as a distinct explanatory variable in Nigerian PPP performance. Existing Nigerian studies tend to focus on general PPP impacts, broad governance challenges or stakeholder perceptions, rather than on the detailed processes of project identification, bid evaluation, contract structuring, risk allocation and life-cycle monitoring that define procurement practice. There is limited integration of sustainability concerns, cost engineering functions and formal risk-sharing instruments into the analysis of PPP procurement. This study, therefore, addresses a clear gap by bringing procurement dynamics to the center of the investigation and by examining how governance mechanisms, institutional capacity and financial oversight interact within PPP procurement to shape infrastructure outcomes and sustainable growth in Nigeria.

Methodology

Research Design and Analytical Strategy

This study employed a mixed-methods, comparative case study design to examine procurement dynamics within public-private partnership infrastructure projects in Nigeria. This design reflected the nature of the research problem. Procurement in PPPs is not a purely technical exercise but an institutional and process-driven phenomenon shaped by governance structures, contractual negotiations, and organizational behaviour across the project lifecycle. A qualitatively dominant strategy was therefore adopted to interrogate these dynamics in depth, while descriptive quantitative indicators were used to ground the analysis in observable project performance. This analytical strategy aligned with the study's emphasis on explaining processes and outcomes rather than modelling latent perceptions.

Case Selection and Study Context

Eight PPP infrastructure projects were purposively selected for analysis based on the availability of procurement documentation, clarity of concession structures, and national relevance. The projects examined were Murtala Muhammed Airport Terminal 2 (MMA2),

Lekki Deep Sea Port, Lagos-Ibadan Expressway PPP sections, Azura-Edo Independent Power Project, Lagos Bus Rapid Transit (BRT) System, Zungeru Hydropower Project, Second Niger Bridge PPP components, and the Lagos-Badagry Expressway redevelopment. These cases span aviation, maritime logistics, road transport, energy generation, and urban mobility. Their sectoral diversity enabled cross-sector and cross-institutional comparison of procurement practices under differing technical, regulatory, and political conditions.

Data Sources and Data Generations

Primary data were generated through completed semi-structured interviews with 25 expert participants. These interviews enabled participants to reflect on procurement design, bid evaluation, contract negotiation, risk allocation, and implementation oversight, drawing on their direct professional experience. Participants were purposively selected from the ICRC, BPP, Federal Ministry of Works, Transport, Power, Aviation, and Housing, Lagos State PPP unit, private concessionaires, transaction advisers, project financiers, PPP legal practitioners, resident engineers, and cost engineers. Their positions within the PPP ecosystem made them essential sources of informed evidence.

Secondary data were obtained through a systematic document analysis, including feasibility studies, procurement audit reports, bid evaluation records, concession agreements, ICRC project pipelines, BPP contextual and quantitative evidence on procurement timelines, financial close delays, risk allocation structures, and cost deviations.

Data Analysis and Comparative Logic

Thematic analysis served as the primary analytical tool. Interview transcripts and documentary materials were coded iteratively to identify recurring patterns relating to procurement governance, institutional weaknesses, incentive structures, and lifecycle risk management. This was complemented by cross-case comparative analysis to examine similarities and divergences across the eight projects and to trace causal mechanisms shaping procurement outcomes. Descriptive quantitative indicators, such as procurement duration, financial close timelines, and cost deviations, were used selectively to contextualize and reinforce qualitative findings rather than to drive inference.

Research Quality, Trustworthiness, and Ethics

Analytical rigour was strengthened through triangulation of interviews and documentary evidence, corroboration of claims across data sources, and member-checking of interview summaries. Ethical approval was obtained prior to data collection. All participants provided informed consent, confidentiality was maintained throughout the study, and sensitive procurement documents were handled and stored securely.

The analytical structure ensures that observed procurement dynamics are examined as process-driven institutional phenomena rather than isolated project outcomes.

Empirical Findings

Results of Thematic Analysis

The empirical material yielded a set of recurring procurement-related patterns observed across the eight PPP infrastructure projects examined. These patterns emerged through iterative comparison of evidence across procurement stages and institutional settings. Table 4.1 provides a compact summary of the dominant themes, their empirical manifestations, and their spread across projects.

Table 4.1: Summary of Dominant Procurement Themes Across PPP Projects

Theme	Key Empirical Manifestations	Procurement Stage Affected	Spread Across Projects
Project preparation	Reactive project prioritization;	Identification and preparation	Widespread

weaknesses	variable feasibility depth		
		Bid solicitation and evaluation	Widespread
Bid evaluation strain	Extended evaluation timelines; repeated clarifications		
		Contract structuring	Frequent
Risk allocation ambiguity	Unclear revenue and macroeconomic risk treatment		
		Post-award / financial close	Frequent
Financial close delays	Prolonged negotiations; revised financing terms		
		Pre-award and approval	Widespread
Institutional coordination gaps	Overlapping approvals; sequencing delays		
		Implementation	Selective but recurring
Lifecycle governance strain	Renegotiations; monitoring challenges		

Source: Field Data, 2025

The themes reported below capture how procurement arrangements manifested and evolved across successive stages of the project lifecycle.

Project Identification and Preparation Weaknesses

Project identification and prioritization practices consistently reflected limited strategic sequencing across the PPP projects reviewed. Projects were frequently advanced in response to perceived urgency or visibility rather than through a harmonized, sector-wide screening framework. Early-stage preparation was characterized by uneven depth, with notable variation in how demand, affordability, and implementation constraints were anticipated. Limited institutional capacity within implementing agencies emerged repeatedly as a defining feature of early procurement stages. As a result, early procurement decisions were often taken with incomplete appreciation of downstream constraints. As a result, early procurement decisions were often taken under conditions of incomplete information.

Bid Solicitation and Evaluation Practices

Procurement strategies adopted across cases were formally aligned with prevailing PPP frameworks, yet their operationalization varied significantly. Bid evaluation periods are frequently prolonged, particularly in projects characterized by technical complexity. This tension between formal compliance and practical execution shaped the pace and stability of evaluation outcomes. The role of advisory input emerged as a differentiating factor in bid evaluation experiences. Where advisory engagement was continuous and integrated, evaluation processes displayed greater procedural coherence. Conversely, fragmented engagement coincided with prolonged evaluation timelines and heightened contestation, suggesting variability in how evaluation mechanisms functioned in practice despite similar formal rules.

Contract Structuring and Risk Allocation Gaps

One of the most persistent procurement patterns concerned the handling of revenue-related and macroeconomic risks during contract negotiation. While construction and operational risks were generally delineated with relative clarity, ambiguity persisted around demand certainty, exchange rate exposure, and termination provisions. This pattern translated into contracts that entered financial close with unresolved exposure to key external risks. Across cases, contract completeness at financial close varied, with recurring indications that time pressures during procurement constrained the resolution of foreseeable contingencies. This

resulted in contracts that were operationally functional but structurally open-ended, leaving scope for post-award adjustment.

Financial Close Constraints

Delays between contract award and financial close emerged as a consistent procurement outcome. Evidence indicated that unresolved risk allocation and evolving financing conditions exerted a material influence on financial closure timelines. Procurement-stage decisions appeared to shape financing trajectories by influencing lender confidence, particularly in relation to revenue mechanisms and public support undertakings. The scale and persistence of these delays are further illustrated by the timing patterns reported later in Figure 4.1.

Institutional Coordination and Political Interface

Institutional coordination emerged as a persistent theme across cases. Overlapping mandates and unclear approval sequencing between regulatory bodies and implementing agencies generated procedural friction. These coordination challenges were amplified during periods of administrative transition, with procurement continuity frequently disrupted by leadership changes or policy reorientation. Evidence pointed to recurrent duplication of review processes and renewed documentation requests, indicating that procurement progression was sensitive to institutional alignment and stability.

Implementation and Lifecycle Management Effects

Procurement-stage ambiguities were observed to carry forward into implementation. Contract management capacity varied across cases, particularly in monitoring compliance and managing variations. Where early procurement stages left material issues unresolved, implementation phases displayed greater reliance on renegotiation and informal adjustment mechanisms. Dispute resolution processes were activated more frequently in such contexts, reflecting the downstream manifestation of procurement-stage gaps rather than isolated implementation failures.

While the thematic findings reported above capture recurring patterns in procurement practice as they unfold across the selected PPP cases, these patterns were examined further through a systematic analysis of formal procurement and project documents. The following presents documentary evidence as an independent empirical layer, detailing how official records, contractual instruments, and institutional approvals reflected, qualified, or constrained the procurement dynamics observed across the project lifecycle.

Documentary Analysis

This section examines formal procurement records, contractual instruments, and approval documentation to trace how institutional procedures and contractual choices were recorded and operationalized across the procurement lifecycle. Table 4.3 cross-maps key document types against procurement stages and observed issues.

Table 4.2: Documentary Evidence and Procurement Insights

Document Type	Procurement Stage	Observed Issue	Empirical Insight
Feasibility studies	Preparation	Optimistic assumptions	Early risk deferral
Procurement audit report	Evaluation	Timeline slippage	Procedural bottlenecks
Bid evaluation summaries	Evaluation	Scoring inconsistencies	Competitive strain
Concession agreements	Contracting	Ambiguous risk clauses	Contract incompleteness

ICRC pipeline records	Pre-award	Approval overlap	Coordination gaps
BPP compliance reports	Approval	Due-process delays	Regulatory sequencing
Lender assessments	Financial close	Bankability constraints	Procurement-finance interface

Source: Project documents

Formal records reveal how procedural design and contractual formulation constrained decision-making at successive procurement stages. Feasibility studies revealed optimistic demand and revenue assumptions in several projects, which were subsequently adjusted during the procurement of financing stages. Procurement audit reports consistently recorded evaluation delays linked to iterative clarification requests and extended internal reviews. Bid evaluation summaries showed procedural compliance alongside scoring inconsistencies in complex projects, particularly those involving multiple technical interfaces. Concession agreements demonstrated uneven treatment of macroeconomic and termination risks, with several risks deferred to post-award amendments. Lender and transaction adviser assessments highlighted bankability constraints arising from procurement-stage ambiguities, particularly in revenue assurance and government support provisions.

Descriptive Quantitative Indicators

Descriptive quantitative indicators were extracted from procurement records, approval logs, and project monitoring documents to illustrate the magnitude, dispersion, and recurrence of procurement-related outcomes across the eight PPP projects. These indicators were applied comparatively across sectors to contextualize empirically observed patterns and to make visible the temporal and structural dimensions of procurement performance. Table 4.3 presents the descriptive procurement indicators across selected PPP projects.

Table 4.3: Descriptive Procurement Indicators Across Selected PPP Projects

Indicator	Minimum	Maximum	Median	Sectoral Concentration
Duration from project conception to contract award (months)	18	48	31	Transport, Energy
Time from contract award to financial close (months)	12	36	22	Energy, Transport
Approval sequencing gaps between agencies (months)	3	12	7	Multi-sector
Number of procurement revisions or rebidding episodes	1	3	2	Transport
Number of post-award contract amendments	2	6	4	Energy, Transport
Indicative cost deviation from initial estimates (%)	10	35	22	Transport, Power

Source: Project records

To further illustrate these pattern, Figure 4.1 presents the median values of the selected procurement indicators across the eight PPP projects.

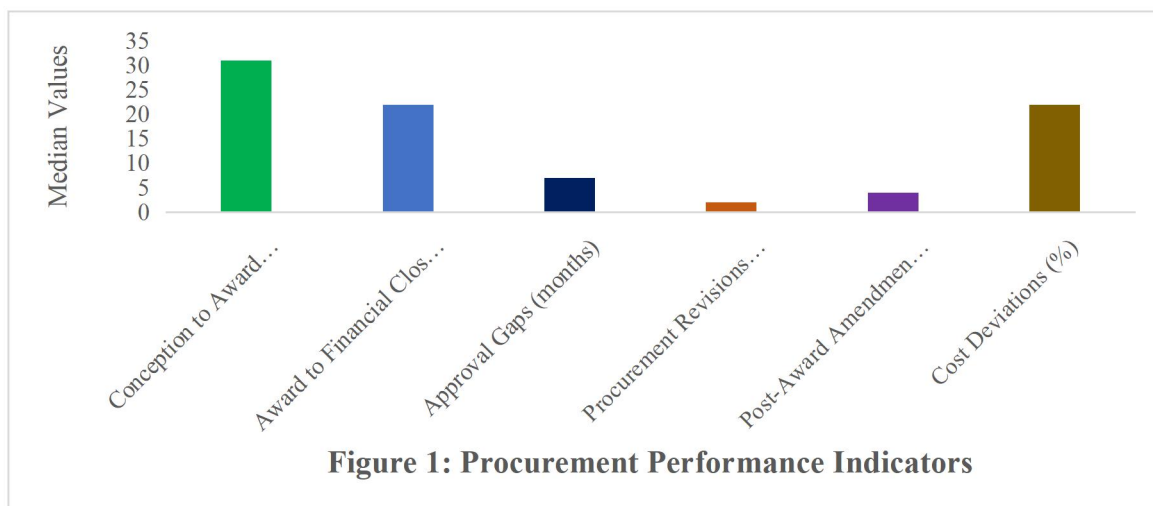


Figure 4.1 shows that the longest median duration occurs at the early procurement stage, with conception-to-award timelines exceeding 30 months, followed by extended periods to financial close. Approval sequencing gaps and procurement revisions, although lower in absolute magnitude, recur consistently across projects, indicating persistent procedural frictions rather than isolated anomalies. Post-award contract amendments appear with notable frequency, reinforcing the prevalence of contractual adjustments after award. Cost deviations exhibit relatively high median values, reflecting the cumulative effect of extended procurement timelines, approval delays, and subsequent contractual modifications.

Taken together, these thematic, documentary, and descriptive patterns establish a coherent empirical basis for interpreting procurement behaviour as a lifecycle governance process rather than a discrete administrative stage.

Discussion of Findings

The patterns observed illuminate procurement as the principal mechanism through which PPP outcomes are shaped within Nigeria's infrastructure environment. Rather than operating as discrete procedural steps, procurement processes across the PPP lifecycle interact cumulatively, shaping financial, contractual, and implementation trajectories. The recurring weaknesses observed in project preparations, bid evaluation, risk allocation, financial close, institutional coordination, and lifecycle governance, therefore, reflect interlinked dynamics embedded within the procurement system itself, consistent with earlier empirical observations in PPP research (Jayasuriya et al., 2019; Dewulf & Garvin, 2020).

Evidence on project identification and preparation aligns closely with findings in the infrastructure planning literature that highlight the decisive influence of early-stage decisions on project outcomes. Studies by Mirhosseini et al. (2022) and Lv et al. (2021) demonstrate that inadequate feasibility depth and reactive project prioritisation significantly increase the likelihood of downstream renegotiation and cost escalation. The Nigerian cases reflect this pattern, with preparation-stage limitations re-emerging during later procurement and financing phases. This reinforces arguments by Liu et al. (2018) that PPP procurement effectiveness must be understood as a lifecycle phenomenon rather than a tender-stage event.

The strain observed in bid solicitation and evaluation resonates with comparative evidence from developing and emerging economies. Empirical studies in Asia and Sub-Saharan Africa document how formal compliance with PPP frameworks often coexists with extended evaluation timelines due to institutional coordination challenges and capacity constraints (Zulu et al., 2023; Das et al., 2025). The Nigerian evidence aligns with several strands of the existing literature, while also revealing context-specific institutional constraints. At the same

time, the findings nuance existing work by showing that advisory quality and continuity, rather than mere presence, materially shape evaluation outcomes.

Risk allocation and contract structuring outcomes observed in this study strongly reflect the literature on contract incompleteness and transaction costs in PPPs. Domingues and Zlatković (2015) and Zhu et al. (2020) argue that infrastructure contracts are inherently incomplete due to uncertainty and asset specificity. Empirical PPP studies, however, caution that excessive deferral of critical risk decisions increases renegotiation frequency and undermines value for money (Zhu et al. 2020; Mazher, 2025). The Nigerian evidence supports this latter view, showing that unresolved revenue and macroeconomic risks at award are not neutral omissions but active contributors to post-award adjustment and negotiation.

Financial close delays further illustrate how procurement-stage decisions shape downstream outcomes. International evidence consistently shows that lenders respond to clarity in risk allocation, government support undertakings, and revenue certainty (Demirel et al. 2021; Mazher, 2025). The findings from Nigeria align with this evidence, indicating that procurement ambiguity translates directly into prolonged financial negotiations. Similar patterns have been reported in PPP power and transport projects in India and Latin America, where weak procurement preparation amplified financing challenges under volatile macroeconomic conditions (Sinha & Jha, 2021; Das et al., 2025).

Institutional coordination challenges observed across the cases reflect broader insights from institutional theory and PPP governance research. Studies by Almeile et al. (2024) and Aboobacker and Tony (2024) emphasize that fragmented authority and unclear approval sequencing undermine procurement efficiency even where formal frameworks exist. The Nigerian findings reinforce this perspective, particularly in showing how administrative transitions disrupt procurement continuity. This sensitivity to political and bureaucratic change aligns with evidence from other decentralised PPP systems, although it appears more pronounced in an environment with overlapping regulatory mandates.

Finally, the persistence of procurement-stage ambiguities into implementation and lifecycle management is consistent with global PPP evidence linking early contractual weaknesses to operational strain (Love et al. 2021; Adjorlolo et al., 2025). Rather than interpreting renegotiation and monitoring challenges as implementation failures, the findings support a growing body of work that locates these outcomes within procurement design and contract structuring choices made earlier in the project lifecycle.

Conclusion

Procurement arrangements in Nigeria's PPP landscape operate as an interlinked system of decisions whose effects accumulate across preparation, contracting, financing, and delivery. When procurement is viewed not as a discrete procedural gateway but as a continuous governance process, the interconnected nature of preparation, tendering, contracting, financing, and implementation becomes clear. Decisions taken at the earliest stages of project identification and feasibility framing were shown to shape later outcomes in subtle but persistent ways, influencing the pace of bid evaluation, the clarity of contractual obligations, the timing of financial closure, and the stability of implementation arrangements.

Rather than isolated project-level shortcomings, the observed patterns reflect recurring dynamics embedded within procurement practice. Insufficient interrogation of assumptions during project preparation consistently re-emerged as strain during tender evaluation and negotiation. Similarly, contractual arrangements that left key risks partially unresolved at award were associated with extended post-award negotiations and subsequent delivery-stage adjustments. These interdependencies illustrate how procurement choices accumulate across

stages, progressively shaping the range of options available to public and private actors as actors.

The relationship between procurement design and financing outcomes further reinforces the central role of procurement dynamics. Prolonged timelines to financial close were closely linked to uncertainties originating earlier in the procurement process, particularly in relation to revenue mechanism, risk sharing, and institutional assurances. Once embedded, such uncertainties prove difficult to unwind, underscoring the inseparability of procurement effectiveness from financial and contractual performance. In this context, procurement functions as a key critical arena in which confidence, credibility, and adaptability are negotiated rather than a neutral administrative process.

By adopting a lifecycle perspective and drawing insights across multiple infrastructure sectors, this work deepens understanding of how procurement systems operate within complex institutional environments. The emphasis on process interaction, sequencing, and governance behaviour offers a lens through which PPP performance can be understood beyond surface indicators of success or delay. In doing so, it provides a coherent basis for reflecting on how procurement arrangements can be aligned more closely with the long-term objectives of infrastructure delivery, while setting the stage for further consideration of practical and institutional implications.

Recommendations

The following recommendations derive directly from observed procurement patterns and institutional practices documented across the project lifecycle:

1. The ICRC should enforce mandatory feasibility gatekeeping thresholds before project approval to prevent premature procurement of inadequately prepared PPP proposals.
2. The BPP should institutionalize fixed bid evaluation timelines and require continuous engagement of transaction advisers throughout evaluation stages.
3. Contracting authorities should standardize ex-ante risk allocation matrices within concession agreements, explicitly resolving revenue, currency, and termination risks before contract award.
4. Federal and state implementing agencies should align procurement milestones with lender due diligence requirements to minimize post-award financing delays.
5. The coordinating bodies should formally rationalize approval sequencing across agencies to eliminate overlapping mandates and repeated procurement laws.
6. Implementing authorities should strengthen in-house contract management units with specialist financial, legal, and engineering capacity to reduce reliance on renegotiation during implementation.

While institutionally grounded, these actions reflect procurement functions common to PPP systems in comparable governance environments.

Policy and Practical Implications

Procurement practice operates as a central signal shaping credibility, coordination, and financial confidence within infrastructure partnerships. The quality and sequencing of procurement processes influence bankability, risk pricing, and stakeholder alignment well beyond contract award. Where procurement governance is coherent, projects attract more stable private participation and sustain implementation momentum. Within the broader pursuit of sustainable infrastructure delivery, procurement governance functions as a key mechanism reinforcing resilience, accountability, and long-term lifecycle value.

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