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RETHINKING INFRASTRUCTURE FINANCING IN NIGERIA: A THEORETICAL ANALYSIS OF FACTORS INFLUENCING ALTERNATIVE FINANCING SELECTION *A SYSTEMATIC LITERATURE REVIEW*

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Abstract

Nigeria's infrastructure remains grossly inadequate for a population above 220 million and an economy seeking to diversify beyond oil. Public budgets cannot close a financing gap estimated well above US$3 trillion over two decades, pushing government, multilateral partners, and private capital toward innovative financing mechanisms (IFMs) such as public-private partnerships, Sukuk, infrastructure and green bonds, blended finance, and value-capture instruments. Yet little systematic, theoretically grounded understanding exists of why one IFM is chosen over another at the pre-procurement stage. This paper addresses that gap through a systematic literature review, broadly following PRISMA 2020, of peer-reviewed studies published mainly between 2020 and 2026 in Scopus, Web of Science, and major publisher databases, supplemented by seminal earlier theoretical works. Sixty-nine (69) studies met the inclusion and quality criteria and were synthesized thematically into eight determinant categories: project, financial, institutional, market, environmental, stakeholder, socio-economic, and governance factors (PFIMESSG). Five theoretical lenses (Resource Dependence Theory, Decision Theory, Agency Theory, Stakeholder Theory, and Transaction Cost Economics) are critically examined for their power to explain IFM selection in a shallow, institutionally constrained capital market like Nigeria's. The review finds that existing studies are largely

Keywords: innovative financing mechanisms; infrastructure financing; public-private partnerships; systematic literature review; Nigeria; decision support

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descriptive and project-centred rather than mechanism-centred, and seldom combine multiple theories or multi-criteria decision-making methods in one selection framework. A conceptual framework is therefore proposed, linking project, institutional, financial, and stakeholder determinants to IFM selection criteria and, ultimately, to infrastructure delivery outcomes, moderated by Nigeria's institutional environment. The paper closes with a future research agenda and policy implications for government, quantity surveyors, financial institutions, and private investors seeking a more rigorous, decision-support-oriented approach to infrastructure financing in Nigeria.

Introduction

Background of the Study

Infrastructure, both economic and social, underpins national competitiveness, yet Nigeria's provision of roads, power, water, rail, and social facilities such as health and education remains inadequate, and decades of public investment have not closed the gap (Asaju, 2023; Wasurum & Hannah, 2026). The National Integrated Infrastructure Master Plan (NIIMP) estimates that roughly US$3 trillion over twenty-three years is needed to close this gap and raise infrastructure stock toward the 70% of GDP benchmark associated with middle-income economies (Federal Ministry of Finance, Budget and National Planning, 2020). Public revenue, constrained by oil-price volatility, a narrow tax base, and rising debt-service obligations, cannot meet this need unaided. This has prompted a gradual shift toward innovative financing mechanisms (IFMs) that draw on private capital, capital-market instruments, and blended public-private structures (Oghuma & Iyoha, 2023).

Nigeria's financing approach has evolved through distinct phases. The post-independence and oil-boom decades relied on budgetary allocation and concessional multilateral loans, while structural adjustment in the 1980s and 1990s sharply curtailed capital expenditure and private participation was adopted only partially. The ICRC Act (2005), the Public Procurement Act (2007), and the National Policy on Public-Private Partnerships (2017) created the first coherent legal architecture for private participation, yet implementation has lagged (Hassan & Fatile, 2022; Ahmed & Lall, 2021). Since 2017, the range of instruments has widened. PPPs have produced contested successes such as the Lekki-Epe toll road and the Azura-Edo Independent Power Plant, alongside stalled or renegotiated concessions (Adebayo & Umeh, 2023; Edogbanya & Adekeye, 2024). The Debt Management Office issued six sovereign Sukuk between 2017 and 2023, raising ₦1.09 trillion ring-fenced for road projects across the six geopolitical zones (African Business, 2024; Daily Trust, 2025). Infrastructure funds, including InfraCredit-backed guarantees and the Nigeria Infrastructure Debt Fund, have begun channelling domestic pension assets into infrastructure-linked securities, and blended finance has supported power and off-grid renewable projects. Green and sustainability-linked instruments remain immature, with issuance in Nigeria and South Africa still a fraction of Asia-Pacific volumes, but they are attracting growing policy attention (Babon-Ayeng et al., 2022; Debrah et al., 2023; Gyamerah & Asare, 2024).

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Despite this increasing portfolio of Innovative financing mechanisms (IFMs), the Nigerian literature largely describes instruments in isolation and offers little theoretical clarity on why sponsors, ministries, or agencies select one mechanism over another before procurement begins. Project sponsors, and government agencies therefore face a crowded menu of options without a rigorous, evidence-based method for choosing among them (Ismujatmika et al., 2025; Lombardi et al., 2025; Xu, 2025; Kiani et al., 2024). An inappropriate selection can lead to cost overruns, protracted negotiations, contractual failures, and an inability to attract investors, ultimately exacerbating the infrastructure deficit it seeks to solve (Sader, 2000; Gbahabo, & Samuel, 2017).

This paper responds to that gap through a systematic literature review of the factors influencing IFM selection, a synthesis of the theoretical lenses used and usable to explain that selection, and a conceptual framework to anchor future empirical work. That work includes doctoral research developing a decision support model for IFM selection at the Front-End Planning (FEP) stage of Nigerian infrastructure projects. In line with the conference sub-theme of interdisciplinary innovations for future sustainable habitats, the paper treats financing selection as an interdisciplinary problem spanning construction economics, public finance, institutional governance, and decision science.

Research Methodology

This review follows the PRISMA 2020 statement (Page et al., 2021) for reporting systematic reviews, adapted to a theory and factor synthesis purpose rather than a quantitative meta-analysis. The protocol proceeded through identification, screening, eligibility assessment, and inclusion, summarized in Table 1 and Figure 1.

Table 1 Four-Stage PRISMA 2020 Screening and Study Selection Process

Stage	N	Basis for exclusion
Identification (records located across all databases and additional records through other sources)	1548	—
After de-duplication	1,207	341 duplicate records removed (Zotero)
Title/abstract screening (excluded)	161	Record excluded (n = 1046) for off topic, not English, not related to infrastructure financing.
Full-text assessment (excluded)	69	Insufficient methodological details, inaccessible full text, withdrawn/broken repository link (92)
Included in thematic synthesis	69	—

Database Selection and Search Strategy

Literature was retrieved from Scopus, Web of Science, ScienceDirect, Taylor & Francis Online, SpringerLink, Emerald Insight, Wiley Online Library, the ASCE Library, and MDPI, with Google Scholar used only in a supplementary capacity to capture grey literature and Nigerian institutional reports not indexed elsewhere. Search strings combined three concept blocks using Boolean

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

operators: (a) financing terms; "innovative financing" or "alternative financing" or "infrastructure financing" or "public-private partnership" or "sukuk" or "green bond" or "blended finance" or "value capture"; (b) selection/decision terms: "selection criteria" or "decision support" or "determinants" or "factors influencing"; and (c) context terms: "infrastructure" and ("Nigeria" or "Africa" or "developing economy" or "emerging market").

Inclusion and Exclusion Criteria

Studies were eligible for inclusion if they:

- were published between 2020 and 2026 in a peer-reviewed journal, in conference proceedings, or as a credible institutional or government report, with seminal theoretical works predating 2020 admitted where conceptually necessary;
- address infrastructure financing mechanisms, the factors that determine their selection, or theoretical explanations of financing choice;
- focused on Nigeria, another African country, or another developing or emerging economy, or documented best practice that is transferable internationally; and
- were written in English and available in full text.

Studies were excluded where they addressed corporate (non-infrastructure) capital-structure decisions with no project-financing relevance, were purely descriptive news items without analytical content, duplicated an already-captured dataset, or fell below the minimum quality-appraisal threshold described below.

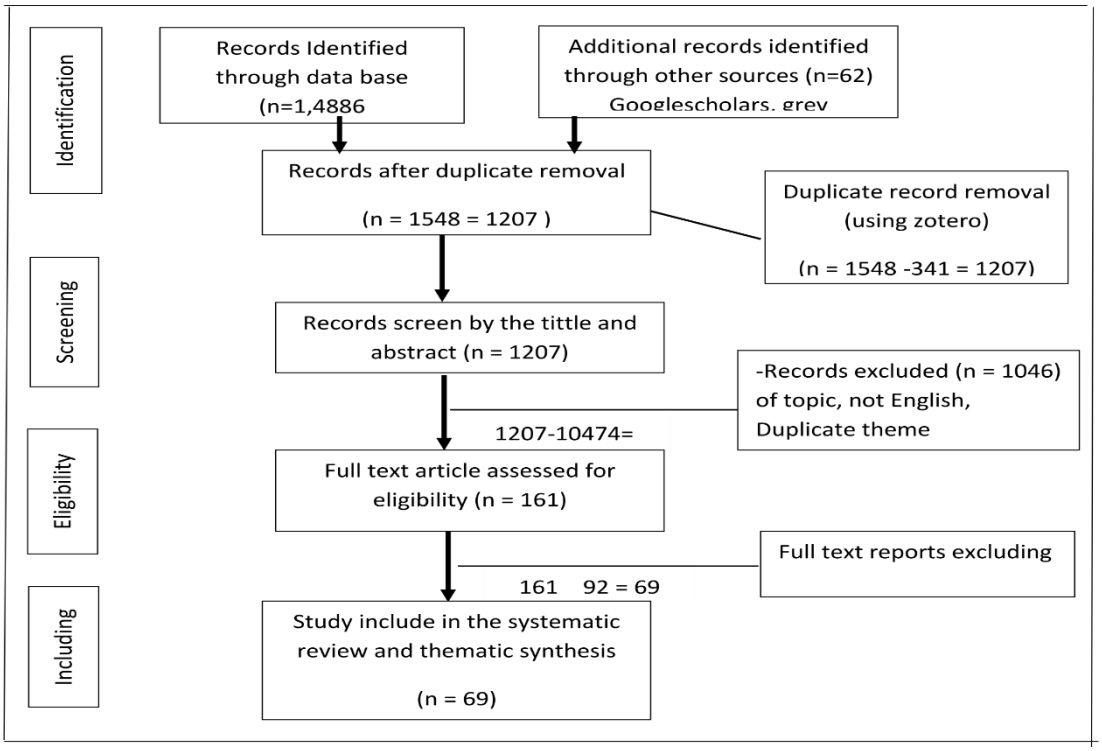


Figure 1. PRISMA 2020 flow diagram of the study selection process.

Search window 2020 to 2026

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Justification for Database Selection

The systematic literature search covered seven databases: Scopus, Web of Science, ScienceDirect, SpringerLink, Emerald Insight, Taylor & Francis Online. Additional records were identified through other sources, namely Google Scholar and grey literature to capture non-indexed reports, policy documents, and practitioner literature that is relevant to infrastructure financing in Nigeria. The databases were selected purposively for their broad coverage of peer-reviewed studies at the intersection of construction economics, public infrastructure finance, and alternative infrastructure financing. They are also among the most widely cited indexing platforms available for multidisciplinary research.

Justification for the Search Time Frame (January 2020 to June 2026):

The search window was set to capture recent developments in the factors influencing the selection of innovative financing mechanisms (IFMs) for infrastructure, ensuring that the most current evidence available up to the study period was reviewed. The six-and-a-half-year span is also sufficiently broad to achieve thematic saturation across the literature on the factors that shape the selection of alternative infrastructure financing.

Quality Assessment and Data Extraction

Each shortlisted full-text article was appraised against four criteria: clarity of research aim, methodological transparency, relevance of findings to financing-selection determinants, and citation credibility (peer-reviewed status or institutional authority). Articles scoring below a minimum threshold on this four-point rubric were excluded at the eligibility stage. Data extraction captured author(s), year, geographic scope, financing mechanism(s) examined, theoretical lens (where applicable), methodology, and key determinants or findings, tabulated in a literature matrix that underpins the thematic synthesis.

Thematic Analysis and Narrative Synthesis

Extracted determinants were coded inductively and then grouped into eight a priori categories drawn from the wider construction-economics and public-finance literature: project characteristics, financial factors, institutional factors, market factors, environmental factors, stakeholder factors, socio-economic factors, and governance factors. A narrative synthesis approach was adopted in preference to meta-analysis, given the heterogeneity of methods, contexts, and outcome measures across the included studies, consistent with the qualitative, theory-building purpose of the review.

Overview of Included Studies

Sixty-nine studies met the inclusion and quality-appraisal criteria: twenty-four focused directly on Nigeria, nineteen on other African countries, eighteen on other developing or emerging economies, and eight synthesized international best practice with cross-country relevance. Table 1 summarizes the distribution of the reviewed literature by financing mechanism and geographic focus.

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Table 2. Summary of reviewed studies by financing mechanism focus and geographic scope.

Financing Mechanism Focus	Nigeria	Other Africa	Other Developing/Emerging Economies	International Best Practice	Total
Public-Private Partnerships (PPP)	9	5	4	2	20
Sukuk / Islamic financing	6	2	1	1	10
Green/blue/climate bonds & climate finance	3	5	5	2	15
Blended finance & DFI-backed structures	2	3	3	1	9
Value capture, TIF & asset recycling	1	1	2	1	5
MCDM/decision-support applications	3	3	3	1	10
Total	24	19	18	8	69

Systematic Literature Review: Alternative Financing Mechanisms

"Innovative financing" is used inconsistently across the reviewed literature sometimes denoting any instrument beyond direct budgetary allocation, sometimes reserved for genuinely novel structures such as land value capture or diaspora bonds. For the purposes of this review, an innovative or alternative financing mechanism (IFM) is defined as any financing arrangement, public, private or hybrid that mobilizes capital for infrastructure delivery through a structure other than conventional sovereign budgetary allocation or untargeted concessional lending. Table 3 classifies twenty-two mechanisms identified in the review brief into five broad categories.

Table 3. Categories of alternative financing mechanisms and their status in Nigeria.

Category	Representative Mechanisms	Nigerian Application Status
Equity / risk-sharing	PPP, SPVs, infrastructure funds, InvIT/REIT structures	Active but uneven; concentrated in toll roads, ports, power
Debt-based	Infrastructure bonds, municipal bonds, diaspora bonds	Limited sub-national issuance; diaspora bonds largely untested
Islamic / asset-backed	Sukuk (Ijarah, Murabahah)	Established at federal level; sub-national and corporate Sukuk emerging
Sustainability-linked	Green bonds, blue bonds, climate/carbon finance	Early-stage; SEC Green Bond Principles issued but market thin
Value-capture & hybrid	Land value capture, tax increment financing, asset recycling, blended finance	Largely pilot or conceptual; blended structures used in power/off-grid

Public-Private Partnerships

PPPs remain the most extensively studied IFM in the Nigerian literature, reflecting both their longer history under the ICRC Act and their visibility in flagship projects. Reviewed case evidence

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

on the Lagos-Ibadan Expressway and comparable road concessions points consistently to transparent governance, credible risk allocation, and institutional continuity as preconditions for successful delivery, while political discontinuity, weak contract enforcement, and limited local technical capacity recur as the principal impediments (Adebayo & Umeh, 2023; Edogbanya & Adekeye, 2024). Sector-specific studies on education and maritime infrastructure echo the same pattern: PPPs can measurably improve delivery timelines and asset quality, but only where regulatory clarity and stakeholder alignment are actively managed rather than assumed (Hassan & Fatile, 2022).

Sukuk and Islamic Financing Instruments

Sovereign Sukuk has grown from a maiden ₦100 billion issuance in 2017 to a cumulative ₦1.09 trillion by the end of 2023, financing over 4,100 kilometres of road and nine bridges across the federation (Daily Trust, 2025). Its appeal lies in the asset-backed, profit-sharing structure that avoids conventional interest, broadening the investor base to include both faith-motivated and yield-motivated subscribers. However, Nigeria's local Sukuk market remains small relative to the global market and continues to face legal harmonisation, Shariah-compliance, and secondary-market liquidity constraints common to emerging Sukuk jurisdictions (African Business, 2024).

Green, Blue, and Climate-Aligned Instruments

Sustainability-linked instruments are the fastest-growing but least mature category in the Nigerian context. Continent-wide, Africa has raised approximately US$9.6 billion through roughly seventy-six green bond issuances since 2013, a figure dwarfed by Asia-Pacific and European volumes, with average deal sizes actually shrinking as smaller corporate issuers enter the market (Gyamerah & Asare, 2024). Ghanaian evidence on the socio-political determinants of green bond adoption, institutional readiness, investor confidence, and policy coordination offers a transferable diagnostic for Nigeria, where the Securities and Exchange Commission's Green Bond Principles exist on paper but have yet to translate into a deep issuance pipeline (Babon-Ayeng et al., 2022; Akomea-Frimpong et al., 2022).

Blended Finance and Value-Capture Instruments

Blended finance, combining concessional and commercial capital to de-risk projects for private investors, has been most visible in Nigeria's power and off-grid renewable-energy sectors, echoing broader Sub-Saharan African experience with donor-backed guarantee and first-loss structures (Bayliss & Waeyenberge, 2023, as cited in Arimoro & Arinze-Umobi, 2026). Value-capture mechanisms, land value capture, tax increment financing, and asset recycling remain the least developed category in Nigeria, existing mainly at a conceptual or pilot stage, notwithstanding their demonstrated capacity elsewhere to convert land-value uplift from infrastructure investment into a repayable revenue stream.

Theoretical Review

IFM selection is, at its core, a decision problem shaped by resource constraints, information asymmetry, and competing stakeholder interests. Five theories recur, explicitly or implicitly, across

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

the reviewed literature. Each is examined below for its explanatory reach and its limitations when applied to Nigeria's institutionally constrained infrastructure market.

Resource Dependence Theory (RDT)

Resource Dependence Theory (Pfeffer & Salancik, 1978) frames organizations, including government agencies and project sponsors, as dependent on external actors for critical resources, in this case capital, and predicts that financing choices will favor mechanisms that reduce dependence uncertainty or preserve strategic autonomy. Applied to Nigeria, RDT explains the appeal of diversified instruments such as blended finance and Sukuk, which reduce reliance on any single capital source, but it says comparatively little about how competing instruments are ranked against one another once dependence is acknowledged, limiting its use as a standalone selection theory.

Decision Theory

Decision Theory, and particularly Herbert Simon's (1955) concept of bounded rationality, holds that decision-makers satisfice rather than optimize under conditions of incomplete information and cognitive and time constraints. This is arguably the most descriptively accurate account of how Nigerian infrastructure financing choices are actually made under political time pressure, incomplete market data, and limited in-house financial-structuring capacity but it is a theory of process rather than of criteria, and requires pairing with a structured multi-criteria method (such as AHP) to become operationally useful for selection modelling (Saaty, 1980; Ishizaka & Labib, 2011).

Agency Theory

Agency Theory (Jensen & Meckling, 1976) models the relationship between a principal (government or project owner) and an agent (private financier, concessionaire, or contractor) as inherently subject to information asymmetry and misaligned incentives, both of which financing-instrument design can mitigate through risk-sharing, monitoring, and performance-linked payment structures. The theory explains much of the Nigerian PPP literature's emphasis on risk allocation and contract enforcement as success determinants (Adebayo & Umeh, 2023) but is less suited, on its own, to explaining the selection of non-relational instruments such as bonds, where the principal-agent structure is more diffuse.

Stakeholder Theory

Stakeholder Theory (Freeman, 1984) broadens the analytical lens beyond the principal-agent dyad to the full set of parties, communities, regulators, investors, civil society, affected by a financing decision, and argues that legitimacy and sustained project viability depend on managing their competing claims. The theory usefully accounts for the socio-political determinants of green bond adoption identified in Ghanaian and broader African evidence (Babon-Ayeng et al., 2022) and for public-acceptance barriers documented in PPP case studies, though it offers limited guidance on how to weigh stakeholder claims quantitatively against financial or technical criteria.

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

Transaction Cost Economics (TCE)

Transaction Cost Economics (Williamson, 1985) explains institutional choice as a function of minimizing the costs of contracting, monitoring, and enforcement under conditions of asset specificity, uncertainty, and opportunism. TCE has strong explanatory power for why complex, asset-specific infrastructure projects in weak contract enforcement environments migrate toward vertically integrated or heavily governed structures such as PPPs rather than arm's-length capital-market instruments, but, like RDT, it addresses governance-mode choice rather than direct instrument selection, and appears in the reviewed literature primarily as background theory rather than an adopted analytical lens (Kang et al., 2019).

Synthesis of Theoretical Perspectives

No single theory reviewed offers a complete account of IFM selection. RDT and TCE explain why organizations seek particular governance or capital arrangements; Agency and Stakeholder Theory explain how relational risk and legitimacy shape instrument design and acceptance; Decision Theory explains the bounded, heuristic-driven process by which the final choice is actually made. Table 3 compares the five theories on their unit of analysis, core proposition, and applicability to Nigerian IFM selection.

Table 4. Comparative analysis of theoretical perspectives on IFM selection.

Theory	Core Proposition	Strength for IFM Selection	Limitation in Nigerian Context
Resource Dependence Theory	Organizations act to reduce dependence on external resource providers	Explains diversification toward Sukuk, blended finance	Weak on ranking competing instruments
Decision Theory (bounded rationality)	Decision-makers satisfice under cognitive/ informational limits	Descriptively accurate of actual practice	Not itself a criterion-weighting method
Agency Theory	Principal agent misalignment mitigated via monitoring/incentive design	Explains PPP risk-allocation emphasis	Less suited to non-relational instruments
Stakeholder Theory	Legitimacy requires managing multiple stakeholder claims	Explains public-acceptance & ESG determinants	Limited quantitative weighting guidance
Transaction Cost Economics	Governance mode minimizes contracting/ enforcement costs	Explains preference for governed structures (PPP)	Addresses governance mode, not instrument choice directly

Critical Discussion: Factors Influencing Financing Selection

Across the sixty-nine reviewed studies, determinants of IFM selection cluster into eight categories that are analytically distinct but empirically interdependent, as illustrated in Figure 3. Table 4 sets out representative factors within each category, drawing on the Nigerian, African, and comparable-economy evidence synthesized above.

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

Table 5. Factors influencing financing selection, by determinant category.

Category	Representative Factors	Illustrative Evidence
Project characteristics	Size, capital intensity, technical complexity, revenue-generation capacity, risk profile, construction duration	Large, revenue-generating assets (toll roads, ports) attract PPP/equity structures; smaller social infrastructure leans on Sukuk/budgetary blends (Adebayo & Umeh, 2023)
Financial factors	Cost of capital, interest and inflation rates, exchange-rate exposure, debt capacity, affordability	Naira volatility and double-digit inflation elevate the relative attractiveness of naira-denominated, asset-backed Sukuk over foreign-currency debt (as reflected in sukuk risk-factor literature)
Institutional factors	Regulatory framework, political stability, institutional quality, legal enforceability	ICRC Act, PPA 2007, and the 2017 PPP Policy provide the enabling architecture, but implementation gaps persist (Hassan & Fatile, 2022)
Market factors	Capital market depth, investor confidence, credit rating	Nigeria's shallow domestic capital market and low global Sukuk/green-bond share (0.15%) constrain instrument choice (African Business, 2024)
Environmental/ESG factors	Sustainability alignment, climate resilience, green certification	ESG-linked instruments remain nascent despite SEC Green Bond Principles; socio-political readiness is decisive (Babon-Ayeng et al., 2022)
Stakeholder factors	Risk allocation, public acceptance, private-sector participation appetite	Transparent risk-sharing and stakeholder synergy distinguish successful from stalled PPPs (Adebayo & Umeh, 2023; Edogbanya & Adekeye, 2024)
Socio-economic factors	GDP growth, population and urbanization pressure, fiscal capacity	Urbanization intensifies demand for revenue-generating infrastructure amenable to value-capture instruments, still largely untested locally
Governance factors	Transparency, accountability, anti-corruption safeguards, contract enforcement	Weak governance and policy inconsistency recur as the most cited barrier to PPP and blended-finance success across the reviewed evidence

Areas of Consensus

Three points of convergence emerge across otherwise disparate studies. First, institutional quality and governance credibility are near-universally identified as threshold conditions: no financing instrument, however well designed, compensates for weak contract enforcement or policy inconsistency. Second, risk allocation is consistently treated as the central design variable within any instrument choice, whether PPP concession terms, Sukuk asset-backing structures, or blended-finance guarantee layers. Third, capital-market shallowness is repeatedly cited as the binding constraint on instrument diversification, meaning that instrument choice in Nigeria is as much a function of what the market can absorb as of what a project technically requires.

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

Two questions divide the literature most sharply. The first is whether financial or institutional determinants carry more weight: some studies see cost of capital and affordability as the main selection drivers, while others argue institutional and governance quality dominate, with financial terms following from institutional credibility. The second is methodological: Nigerian studies are mostly qualitative case studies of individual PPP or Sukuk projects, whereas quantitative MCDM approaches (e.g., AHP) have rarely been applied to financing-mechanism selection, being used mainly for project or site selection (Chatterjee et al., 2018; Adeyemo et al., 2023).

Implications for Nigeria

Taken together, the discussion above suggests that Nigerian infrastructure financing decisions are currently made in a theoretically under-specified and methodologically fragmented environment: rich in descriptive case evidence, but poor in structured, comparative, criterion-weighted selection tools. This is precisely the gap that a decision-support model, grounded in an integrated theoretical framework and operationalized through MCDM techniques, is positioned to close.

Conceptual Framework

Building on the theoretical synthesis in Section 7 and the factor classification in Section 8, this review proposes a conceptual framework linking determinant categories to financing selection criteria, alternative financing mechanisms, and ultimately infrastructure delivery outcomes, moderated throughout by Nigeria's institutional environment (Figure 4).

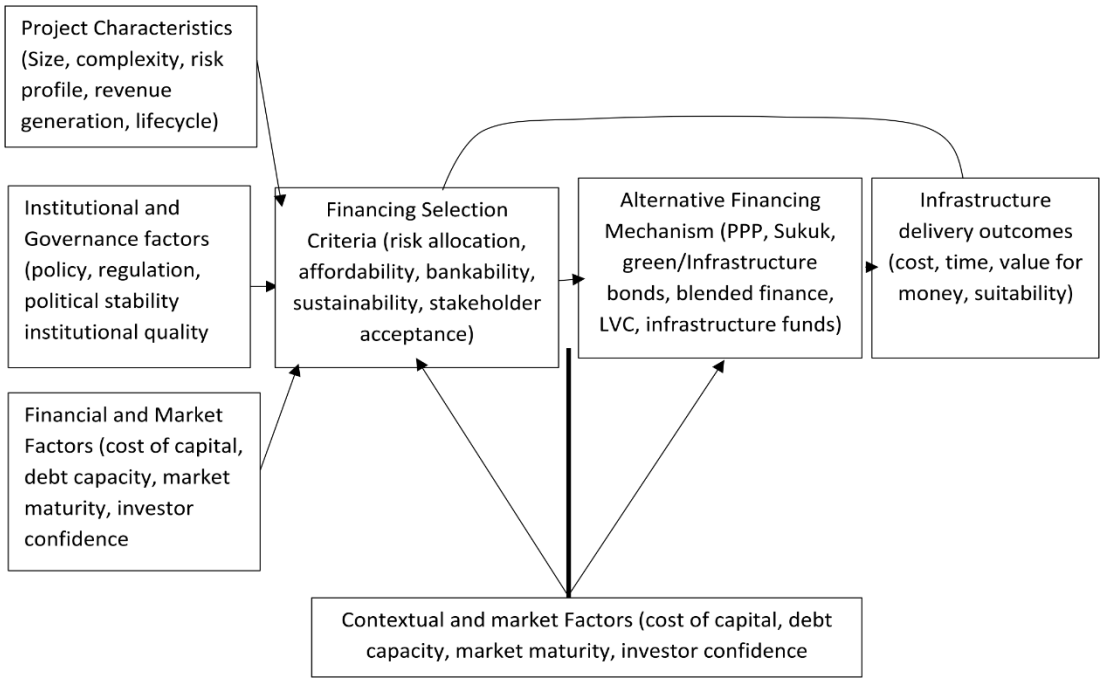


Figure 2. Conceptual framework: determinants of innovative financing mechanism (IFM) selection.

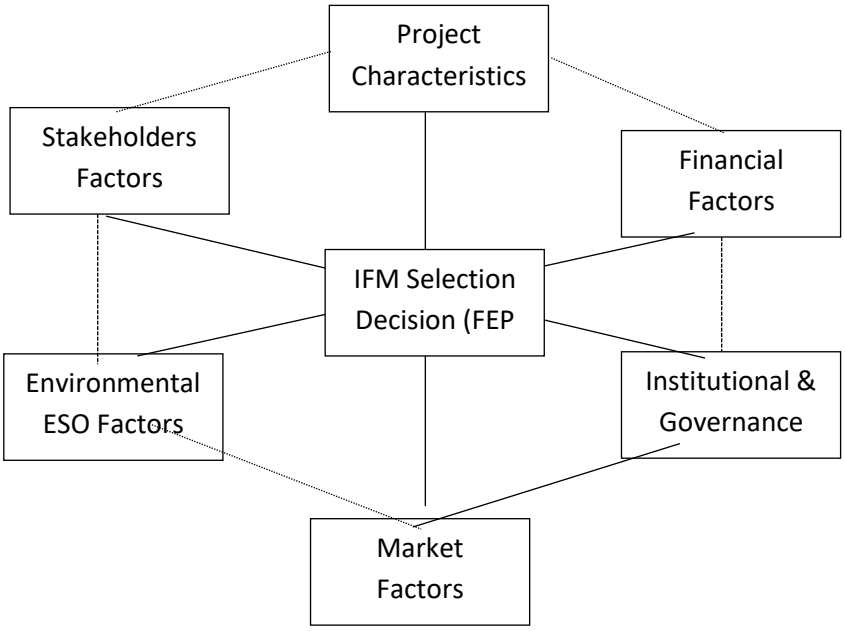
The framework treats project characteristics, institutional and governance factors, and financial and market factors as independent variables acting on an intermediate construct, financing

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

selection criteria, that includes bankability, affordability, risk allocation preference, and sustainability alignment. These criteria, in turn, shape the selection among alternative financing mechanisms, which produces infrastructure delivery outcomes measured in cost, time, value for money, and sustainability terms. A feedback loop is proposed whereby delivery outcomes reshape future selection criteria, consistent with an institutional-learning perspective on infrastructure governance. Nigeria's institutional environment, comprising NIIMP sectoral priorities, the ICRC Act 2005, the PPA 2007, the 2017 National PPP Policy, and the depth of domestic capital markets, is modelled as a contextual moderator acting on both the selection-criteria stage and the mechanism-selection stage rather than as a simple independent variable, reflecting its pervasive rather than discrete influence.

Figure 5 elaborates the interrelationships among the eight determinant categories feeding into the FEP-stage selection decision, showing both their direct influence on the decision and the cross-category interdependencies documented in the reviewed literature for example, between market factors and financial factors, or between stakeholder factors and environmental factors.

Interrelationship Model of Financing Selection Factors.



Note: Solid arrow show direct influence on the FEP stage selection decision; dashed lines shows cross-factor interdependence identifies in the reviewed literature.

Figure 3 Interrelationship model of financing selection factors at the Front-End Planning stage.

Table 6. Proposed conceptual framework variables and their analytical role.

Construct	Role in Framework	Representative Indicators
Project characteristics	Independent variable	Size, complexity, revenue generation, risk profile
Institutional & governance factors	Independent variable / moderator	Regulatory clarity, political stability, enforcement capacity
Financial & market factors	Independent variable	Cost of capital, debt capacity, market depth

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

Construct	Role in Framework	Representative Indicators
Financing selection criteria	Mediating variable	Bankability, affordability, risk allocation, sustainability alignment
Alternative financing mechanisms	Focal dependent construct	PPP, Sukuk, green/infrastructure bonds, blended finance, value capture
Infrastructure delivery outcomes	Ultimate dependent variable	Cost performance, time performance, value for money, sustainability
Institutional environment (Nigeria)	Contextual moderator	NIIMP priorities, ICRC Act 2005, PPA 2007, National PPP Policy 2017

Research Gaps

The synthesis above surfaces six categories of research gap, summarised in Table 6.

Table 7. Identified research gaps.

Gap Category	Description
Conceptual	Inconsistent definition of "innovative" versus "alternative" financing across the literature, limiting comparability across studies
Theoretical	No reviewed study integrates more than one or two of the five theories examined into a single, internally consistent selection model
Methodological	MCDM techniques (AHP, Fuzzy AHP, TOPSIS) are well established for infrastructure project selection but rarely applied specifically to financing-mechanism selection
Empirical	Sub-national and non-PPP mechanisms (value capture, diaspora bonds, municipal bonds) remain empirically under-studied in the Nigerian context relative to PPP and Sukuk
Geographical	Findings from Anglophone West Africa and other Sub-Saharan comparators are not yet systematically compared with Nigeria-specific institutional constraints
Practical/decision-support	No validated, practitioner-usable decision support tool exists for IFM selection at the Nigerian FEP stage, leaving the choice to informal or precedent-based judgment

Future Research Agenda

Building directly on the identified gaps, four priority research directions are proposed:

- Development and empirical validation of an integrated theoretical model combining Institutional Theory, Agency Theory, and Decision Theory as the basis for IFM selection criteria, rather than relying on a single lens.
- Application of hybrid multi-criteria decision-making techniques (Fuzzy Delphi, Fuzzy AHP, TOPSIS) to construct and validate a Nigeria-specific IFM decision support model usable at the pre-procurement, Front-End Planning stage.
- Comparative empirical studies of value-capture, diaspora-bond, and municipal-bond potential in Nigeria, sectors that remain conceptually discussed but empirically untested locally.

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

- Cross-country comparative research linking Nigerian findings to Ghanaian, Kenyan, Egyptian, and other Sub-Saharan African experience, to distinguish genuinely Nigeria-specific institutional constraints from broader regional patterns.

For Government and Policy Makers

Codifying a structured, criterion-based IFM selection process within existing ICRC and PPP-policy procedures would reduce the current reliance on ad hoc or precedent-based instrument choice, and would strengthen the credibility of the NIIMP's financing-mobilisation targets to both domestic and international investors.

For Investors and Financial Institutions

Greater transparency in how public sponsors select and justify financing mechanisms would lower perceived transaction risk and could support deeper secondary-market liquidity for Sukuk and infrastructure bonds, consistent with evidence that market confidence and institutional clarity are prerequisites for capital-market instrument uptake.

For Quantity Surveyors and PPP Practitioners

The conceptual framework proposed in Section 9 offers quantity surveyors and other project-preparation professionals a structured basis for advising sponsors at the Front-End Planning stage, translating project characteristics into financing-relevant criteria before procurement strategy is fixed, a role quantity surveyors are professionally well placed to perform given their existing responsibility for cost planning and procurement advice.

Conclusion

This systematic literature review has shown that, notwithstanding a rapidly diversifying menu of alternative and innovative financing mechanisms available to Nigerian infrastructure sponsors, the theoretical and methodological basis for choosing among them remains underdeveloped. No single theory reviewed, Resource Dependence, Decision, Agency, Stakeholder, or Transaction Cost Economics, offers a complete account of selection behavior on its own, and the empirical literature remains heavily case-based and instrument-specific rather than comparative or decision-analytic. The conceptual framework proposed here, linking project, institutional, financial, and stakeholder determinants to financing selection criteria and, in turn, to infrastructure delivery outcomes, offers a starting point for the kind of integrated, multi-criteria decision support model that Nigerian infrastructure planning currently lacks. Its further empirical development, particularly through hybrid MCDM techniques applied at the pre-procurement stage, constitutes a natural and necessary next step for both academic research and practical policy reform.

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