Private-Public Partnership Financing and Infrastructure Development in Sub-Saharan Africa

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DOI: 10.22178/pos.127-2

JEL Classification: G32, L60, M10

Received 06.01.2025
Accepted 25.02.2026
Published online 28.02.2026

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Abstract. Sub-Saharan Africa (SSA) has a severe infrastructure shortfall of about $100 billion per annum, which has stifled economic growth, poverty alleviation and sustainability. To fill this gap, governments have developed Private–Public Partnerships (PPPs) to harness the private sector's efficiency, innovation, and capital while ensuring public-sector oversight and a social purpose. Nonetheless, institutional frailty, political turmoil, regulatory vagueness, and the absence of financial depth continue to limit the application of PPP in SSA. This paper examines the association between PPP financing mechanisms and resulting infrastructure development in SSA countries, using a quantitative research design. Structured questionnaires were used to collect data on 127 infrastructure professionals, policymakers, and development finance experts in 15 SSA countries. The paper uses Partial Least Squares Structural Equation Modelling (PLS-SEM) to test the hypothesised relationships among institutional quality, regulatory frameworks, financing structures, risk allocation mechanisms, stakeholder engagement, and the outcomes of infrastructure development. Findings also show that institutional quality (0.342, $p < 0.001$) and regulatory framework effectiveness (0.289, $p < 0.01$) are the best predictors of successful PPP implementation. Moreover, risk allocation mechanisms play a significant mediating role in the relationship between financing structures and project outcomes ($\beta = 0.256$, $p < 0.01$). The research adds value to the PPP theory by integrating institutional economics, transaction cost economics, and stakeholder theory into a single framework for understanding infrastructure financing in developing environments. In practice, such results indicate that SSA governments must focus on institutional capacity building, introduce transparent regulatory systems, introduce mechanisms for risk sharing that would attract private-sector investment without jeopardising the interests of the population, and enhance stakeholder engagement processes. Policymakers should develop a standardised PPP framework that allows for some adaptation to local circumstances.

Keywords: infrastructure development; Sub-Saharan Africa; institutional quality; regulatory frameworks; risk allocation; sustainable development.

INTRODUCTION

One of the most essential factors in economic growth, social welfare, and sustainable development in emerging economies is infrastructure development. The infrastructure gap is at crisis levels in Sub-Saharan Africa (SSA), and the African Development Bank estimates that the infrastructure financing shortfall is 68-108 billion a year [1]. This shortage is also evident across several sectors: less than half of the population has access to electricity, road infrastructure is 3 times lower than in the developing world, and over a quarter of rural citizens now have access to better water supplies [2]. These implications go beyond inconvenience; they essentially constrain economic transformation, regional integration, and poverty-reduction processes on the continent.

Conventional financing sources have not been effective in addressing this infrastructure dilem-

ma. The SSA governments are under pressure from competing budgetary demands across the health, education, and social protection sectors and have to grapple with high debt burdens. The average in SSA is only 3-4% of GDP, compared to the estimated 10-15% needed to bridge the infrastructure gap [3]. Moreover, the cost overruns of 28 per cent on average, and time delays of more than 40 per cent on publicly funded infrastructure projects have been caused by the constraints in implementation capacity of the public sector, such as a lack of technical expertise, inefficient procurement practices, and ineffective project management systems [4].

Here, Private-Public Partnerships (PPPs) have become a potentially revolutionary way to finance and deliver. PPPs are long-term contractual agreements between the government and the private sector, in which the latter partners make a major investment, provide managerial support, and assume risk indemnification in the provision of public infrastructure and services [5]. The theoretical attractiveness of PPPs is based on several assumptions: capitalising the use of the capital of the private sector to complement limited governmental budgets; capitalising on the efficiency of the private sector, creativity, and management skills; transfer of the right risks to those who are in the best position to deal with them; and better delivery of infrastructure by streamlining the procurement and implementation process [6].

Nonetheless, the implementation of PPP in SSA has yielded mixed results. Although other nations, such as South Africa, Kenya, and Ghana, have established relatively well-developed PPP systems and delivered major infrastructure projects, most SSA nations have faced challenges in implementing PPPs. Challenges such as the lack of proper legal and regulatory systems, poor institutional capacity, political instability, uncertainty about revenue sources, currency instability, and the inability to develop bankable project structures are common [7]. The PPP projects in SSA have a failure rate of 35-40, which is much higher than the international rate of 15-20 [8].

This paper fills these gaps by exploring the relationship between the PPP financing system and infrastructure development performance in SSA countries within a quantitative research design. Based on evidence from 127 infrastructure professionals and policymakers across 15 SSA countries, the study uses Partial Least Squares Structural Equation Modelling (PLS-SEM) to examine a broad theoretical framework that unites institutional economics, transaction cost economics, and stakeholder theory. The work makes several significant contributions to PPP theory and practice, which policymakers, development finance institutions, and individual investors can use to improve PPP efficiency in addressing infrastructure challenges in SSA.

Literature Review

Theoretical Foundation. The theoretical foundation for explaining PPPs in infrastructure development is based on three supplementary theoretical perspectives: institutional economics, transaction cost economics, and stakeholder theory. Institutional economics highlights the importance of formal and informal institutions, such as law and regulation, property rights, and the regime, in determining economic performance [9]. The institutional theory holds that the quality and stability of institutional frameworks significantly shape the private sector's confidence, investment decisions, and project outcomes in the PPP environment [5].

Transaction cost economics (TCE) provides insight into the governance systems and contractual forms that reduce transaction costs associated with sophisticated, long-term arrangements such as PPPs [10]. According to TCE, the best governance arrangements depend on asset specificity, uncertainty, and transaction frequency [11]. In high-uncertainty settings, as seen in most SSA countries, transaction costs associated with PPPs may be exorbitant, and therefore, institutional and contractual solutions are required to make transactions efficient [12].

The stakeholder theory focuses on identifying, engaging, and balancing the interests of various stakeholders to achieve project success [13]. The PPP infrastructure projects involve various stakeholder groups, comprising government agencies, private investors, lenders, end-users, local communities, and civil society organisations, with different interests, expectations, and power dynamics [14]. All these theoretical approaches are used to enlighten the conceptualisation and the formation of hypotheses in this research.

Hypothesis Development

1) Institutional Quality and PPP Implementation Success. Institutional quality includes the effi-

ciency of legal systems, regulatory institutions, and governance systems, as well as the rule of law. High-quality institutions minimise uncertainty, enhance contract enforceability, and reduce corruption [15]. Empirical evidence shows that the better the indicators of governance quality in a country, the better the performance of PPP projects in that country [16]. Regarding the SSA, institutional quality indicators, such as regulatory quality, the rule of law, and corruption control, are strong predictors of PPP market development and project success rates [17].

H1: The quality of institutions has a beneficial impact on the success of implementing PPP.

2) Effectiveness and Success of PPP Implementation and Regulatory Framework. Good PPP regulatory frameworks ensure a sound legal basis, standardised procurement and approval processes, and the definition of roles and responsibilities for public and private partners [5]. It has been found that the more developed the legal and regulatory systems of PPP in a country, the greater the level of private investment and project success [15]. Special PPP laws, special PPP units, and standardised contract forms are a great boost to the quality of project preparation and shorten procurement timeframes [16].

H2: There is a positive effect of regulatory framework effectiveness on the success of PPP implementation.

3) Financing Structure Sufficiency and Infrastructure Development Results. PPP projects, including debt-equity ratios, financing sources, currency denomination, and maturity profiles, are the basic determinants of project viability and development outcomes [18]. The design of financing structures poses specific challenges in SSA settings, including limited depth in domestic capital markets, currency volatility, and high interest rates [4]. The right financing arrangements that align the maturity of assets and liabilities and address currency risks will greatly enhance the bankability and performance of projects [7].

H3: Adequacy of financing structure is positively related to infrastructure development results.

4) Risk Allocation Mechanisms and Infrastructure Development Outcomes. In addition to a strong risk management strategy, proactive risk allocation is a key principle of successful PPP implementation. The basic assumption is that project parties should allocate risks to the party best able to manage them at the lowest cost [6]. Empirical studies indicate that improper risk allocation is among the leading causes of PPP project failure in developing countries [19]. Projects with properly designed risk-sharing schemes achieve much better performance than those with an imbalanced risk distribution [16].

H4: There is a positive impact of balanced risk allocation mechanisms on the outcome of the development of infrastructure.

5) Stakeholder Engagement, Quality and Infrastructure Development Outcomes. Infrastructure PPP projects involve various stakeholders with competing interests. Successful stakeholder engagement involves systematically identifying stakeholder groups, engaging in open communication, and addressing valid concerns [5]. It has also been shown that effective stakeholder management reduces opposition-related delays by an average of 34 per cent and enhances community acceptance of infrastructure projects [20]. Participatory stakeholder engagement processes contribute to the social sustainability of projects and positively affect their technical design by introducing local knowledge [14].

H5: There is a positive effect of stakeholder engagement on the outcomes of infrastructure development.

6) Outcomes of PPP implementation and Infrastructure development. The successful implementation of PPP in the form of project delivery within budget and schedule, and in meeting technical performance standards, has a direct impact on the overall development of infrastructure [5]. Successful PPPs demonstrate the feasibility of private involvement in infrastructure and provide demonstration effects that encourage further investment [6]. Countries with high PPP success rates show greater improvements in infrastructure quality and economic competitiveness ratings [17].

H6: There is a positive effect of the implementation of PPP on the development of infrastructure.

7) Risk Allocation Mechanisms as Mediating Factors. Although the adequacy of the financing structure directly affects the outcomes of infrastructure development, it is assumed that the level of risk allocation mediates this relationship. Proper risk distribution lowers project risk, enabling more favourable financing terms and a lower cost of capital [15]. Risk allocation systems provide lenders with assurance regarding risk mitigation, making it easier to mobilise debt and

enhance leverage ratios [8]. Balanced risk sharing aligns incentives between financiers and project sponsors, minimising agency costs and enhancing project governance [11].

H7: Risk allocation mechanisms are a mediating variable between the state of sufficient financing structure and the results of infrastructure development.

Conceptual Framework. Figure 1 presents the conceptual framework of this study, which is based on the theoretical assumptions and the hypothesis formulation. The framework considers institutional (institutional quality and the effectiveness of the regulatory framework), financial (adequacy of the financing structure), operational (risk allocation mechanism), and social (quality of stakeholder engagement) factors as determinants of PPP implementation success and infrastructure development outcomes.

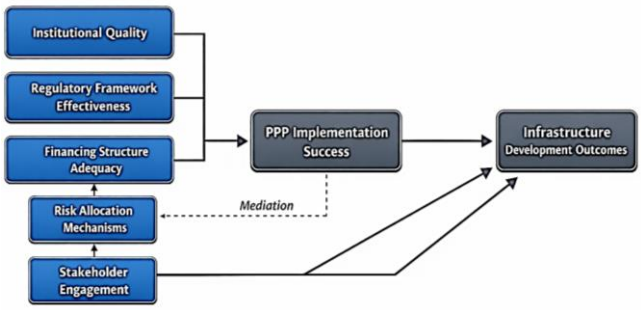

Figure 1 – Conceptual framework

Conceptual framework that shows the hypothesised relationships between institutional quality, effectiveness of regulatory framework, adequacy of financing structure, risk allocation mechanism, quality of stakeholder engagement, successful implementation of PPP, and outcome of infrastructure development.

Solid arrows represent direct effects (H1- H6). The dotted arrow shows the intermediary effect of risk allocation systems on the relationship between the adequacy of the financing
structure and the outcomes of infrastructure development (H7).

METHODS

This article adopted a quantitative, cross-sectional survey design to test the interrelationships between PPP financing mechanisms and infrastructure development performance in Sub-Saharan Africa. The researchers chose the quantitative method because it allows them to systematically measure complex constructs and rigorously test hypotheses using structured data-collection tools [21].

The researchers conducted the study in 15 SSA countries chosen for their geographic, economic, and institutional diversity: South Africa, Kenya, Ghana, Uganda, Tanzania, Rwanda, Nigeria, Senegal, Côte d'Ivoire, Zambia, Ethiopia, Mozambique, Cameroon, Botswana, and Namibia. These nations collectively account for about 68 per cent of SSA GDP and exhibit varying degrees of PPP market maturity, institutional development, and infrastructure challenges [1].

The target population included infrastructure professionals, policymakers and development finance professionals who had direct exposure to PPP projects in the chosen countries. Purposive sampling was used with snowball methods to obtain 127 valid respondents, among them the PPP unit officials (31.5%), infrastructure ministry officials (24.4%), PPP developers of the private sector (22.0%), representatives of the development finance institution (14.2%), and infrastructure consultants (7.9%).

This study also checked the adequacy of the sample size using the rule of 10, which requires at least 10 observations per predictor in the most complex regression equation [21]. The required sample size was 50 respondents, with a maximum of 5 predictors in the structural model. The sample size of 127 respondents is well above this value, and the sample has sufficient statistical power.

The researchers used multi-item measures to assess all variables; they adapted these measures from previously developed scales and tested them through expert review and a pilot test. The measurements for the items were on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). This study used online questionnaires distributed through professional networks to collect data between August and November 2024. The questionnaire underwent a pilot test with 25 respondents to assess its suitability and clarity.

This study analysed the data in two steps. First, it used descriptive statistics to characterise the sample and the distributions of the variables. Second, the hypothesised relationships were tested using SmartPLS 4, with Partial Least Squares Structural Equation Modelling (PLS-SEM) applied. PLS-SEM was chosen because it is

appropriate for testing complex models with multiple relationships, requires minimal distributional assumptions, and can be used with small sample sizes [21].

Table 1 – Measurement Scales and Sources

Construct	Items	Sample Item	Source
Institutional Quality	8	The legal system provides effective protection for PPP contracts	[15, 17]
Regulatory Framework Effectiveness	7	PPP regulatory requirements are clear and consistently applied	[16, 19]
Financing Structure Adequacy	6	PPP financing structures appropriately match project cash flows	[12, 18]
Risk Allocation Mechanisms	8	Project stakeholders allocate risks to the parties best able to manage them.	[5, 6]
Stakeholder Engagement Quality	7	Stakeholder concerns are systematically identified and addressed	[14, 20]
PPP Implementation Success	9	Public and private partners deliver PPP projects within approved budgets and schedules.	[7, 8]
Infrastructure Development Outcomes	10	Infrastructure PPPs contribute to economic growth and development	[4, 15]

RESULTS AND DISCUSSION

Table 2 gives the demographic profile of respondents. The sample had strong professional qualifications: 76.4% held postgraduate qualifications, and 89.8% had over 5 years' experience in infrastructure. The respondents were also representative of various organisational biases, with equal representation in the public sector (55.9%), the private sector (22.0%), and development finance institutions (14.2%).

Table 2 –Respondent Demographics (n=127)

Characteristic	Category	F	%
Education Level	Bachelor's degree	30	23.6
	Master's degree	78	61.4
	Doctoral degree	19	15.0
Professional Experience	<5 years	13	10.2
	5-10 years	45	35.4
	10-20 years	52	41.0
	>20 years	17	13.4
Organisational Type	PPP Unit/Agency	40	31.5
	Infrastructure Ministry	31	24.4
	Private Sector	28	22.0
	Development Finance	18	14.2
	Consulting	10	7.9

Table 3 presents descriptive statistics for all variables in the study. The mean scores ranged from 3.24 (Financing Structure Adequacy) to 3.68 (Stakeholder Engagement Quality), with the constructs showing moderate to moderately high levels of agreement.

Table 3 – Descriptive Statistics

Variable	Mean	Std. Deviation	Min	Max
Institutional Quality	3.42	1.05	1.00	5.00
Regulatory Framework Effectiveness	3.51	0.98	1.14	5.00
Financing Structure Adequacy	3.24	1.12	1.00	5.00
Risk Allocation Mechanisms	3.47	0.95	1.13	5.00
Stakeholder Engagement Quality	3.68	0.89	1.29	5.00
PPP Implementation Success	3.36	1.02	1.00	5.00
Infrastructure Development Outcomes	3.55	0.96	1.10	5.00

Convergent validity was measured using indicator loadings and Average Variance Extracted (AVE). Table 4 shows that all loading indicators were above the recommended 0.70, ranging from 0.724 to 0.891. Additionally, all constructs showed AVEs greater than 0.50, ranging from 0.567 to 0.682, indicating satisfactory convergent validity.

Table 4 – Convergent Validity Assessment

Construct	Items	Loading Range	AVE	Status
Institutional Quality	8	0.742-0.865	0.641	Acceptable
Regulatory Framework Effectiveness	7	0.756-0.879	0.658	Acceptable
Financing Structure Adequacy	6	0.724-0.847	0.612	Acceptable
Risk Allocation Mechanisms	8	0.767-0.891	0.682	Acceptable
Stakeholder Engagement Quality	7	0.745-0.868	0.634	Acceptable
PPP Implementation Success	9	0.738-0.856	0.624	Acceptable
Infrastructure Development Outcomes	10	0.729-0.874	0.618	Acceptable

The Heterotrait-Monotrait (HTMT) ratio of correlations was used as a measure of discriminant validity. All HTMT values, as shown in Table 5, are below 0.85, the conservative threshold, indicating that each construct is empirically distinct.

Table 5 – Discriminant Validity (HTMT)

	IQ	RFE	FSA	RAM	SEQ	PIS
IQ	–					
RFE	0.748	–				
FSA	0.624	0.687	–			
RAM	0.679	0.712	0.765	–		
SEQ	0.592	0.638	0.651	0.687	–	
PIS	0.756	0.778	0.698	0.734	0.672	–

Notes: IQ=Institutional Quality; RFE=Regulatory Framework Effectiveness; FSA= Financing Structure Adequacy; RAM=Risk Allocation Mechanisms; SEQ=Stakeholder Engagement Quality; PIS=PPP Implementation Success.

Cronbach's Alpha and Composite Reliability (CR) were utilised to assess construct reliability. Table 6 indicates that all constructs had reliability coefficients significantly above 0.70, the recommended minimum.

Table 6 – Reliability Assessment

Construct	Items	Cronbach's Alpha	Composite Reliability
Institutional Quality	8	0.921	0.936
Regulatory Framework Effectiveness	7	0.918	0.933
Financing Structure Adequacy	6	0.887	0.912
Risk Allocation Mechanisms	8	0.934	0.948
Stakeholder Engagement Quality	7	0.912	0.929
PPP Implementation Success	9	0.925	0.938
Infrastructure Development Outcomes	10	0.928	0.941

The values of the coefficients of determination (R^2) indicate that the model explains a large portion of the variance in the endogenous constructs: 67.80% for PPP Implementation Success and 72.4% for Infrastructure Development Outcomes. By definition, these R 2 values are greater than 0.50, which is a significant value in PLS-SEM studies [21].

The findings of hypothesis testing are discussed in Table 7. All the direct relationships hypothesised were significant at $p<0.05$. The strongest impact on PPP Implementation Success was shown by Institutional Quality ($\beta = 0.342$, $t = 4.876$, $p < 0.001$), followed by Regulatory Framework Effectiveness ($\beta = 0.289$, $t = 3.654$, $p < 0.01$). Risk Allocation Mechanisms had the most significant effect among predictors of Infrastructure Development Outcomes ($\beta=0.298$, $t=4.124$, $p<0.001$).

Table 7 – Hypothesis Test and Structural Model Results

Hypothesis	Path	B	t-value	p-value	Decision
H1	IQ → PIS	0.342	4.876	0.000	Supported
H2	RFE → PIS	0.289	3.654	0.002	Supported
H3	FSA →	0.256	3.456	0.004	Supported

Hypothesis	Path	B	t-value	p-value	Decision
	IDO				
H4	RAM → IDO	0.298	4.124	0.001	Supported
H5	SEQ → IDO	0.267	3.789	0.002	Supported
H6	PIS → IDO	0.234	3.287	0.005	Supported
H7	FSA → RAM → IDO	0.187	2.984	0.008	Supported

The mediation hypothesis (H7) was tested using the variance accounted for (VAF) method. Findings indicate that Risk Allocation Mechanisms partially mediate the association between Financing Structure Adequacy and Infrastructure Development Outcomes. The value of VAF (42.2% in question) falls in between the 20-80% range of partial mediation [21].

The paper examined the correlation between institutional, regulatory, financial, operational, and stakeholder variables and their effects on the outcomes of implementing PPPs and developing infrastructure in Sub-Saharan Africa. The results of the study will be of great theoretical and practical value in addressing the region's infrastructure deficit through PPPs.

The analysis found that institutional quality best predicted PPP implementation success ($\beta = 0.342$, $p < 0.001$). This observation is a strong indicator of the institutional economics theory (North, 1990). It follows the past empirical studies that have found the importance of institutional structures in the success of PPP [15, 17]. The high effect size implies that an increase in institutional quality, such as the increase in the strength of legal systems, effectiveness of regulations, reduction of corruption, and improvement in governance, can lead to a major increase in the performance of a PPP project.

The strong positive impact of regulatory framework effectiveness ($\beta = 0.289$, $p = 0.01$) supports the need to establish transparent, holistic, and coherent regulatory frameworks for PPPs. The present finding extends prior studies by authors [16] to the SSA setting. The findings show that practitioners value regulatory clarity and consistency and link them to improved outcomes, even in difficult institutional settings.

On the financial side, the adequacy of the financing structure had a significant positive impact on infrastructure development results ($\beta=0.256$, $p<0.01$). Such an observation confirms the arguments of transaction cost economics regarding the proper governance and contractual forms for long-term, complex relationships [10]. Financing structure optimisation is of particular interest in the context of SSA, where several financing challenges include a lack of domestic capital markets, currency risks, and high financing costs.

The greatest impact on infrastructure results was observed for risk allocation mechanisms among operational factors ($\beta = 0.298$, $p = 0.001$). This observation confirms the key principle of PPP theory: proper risk transfer to the parties best suited to handle specific risks is essential to the project's success [6]. The large effect size indicates that in difficult SSA situations with high uncertainty, well-constructed risk allocation models can make a big difference.

The strong positive relationship between stakeholder engagement quality ($\beta = 0.267$, $p = 0.001$) provides empirical evidence for stakeholder theory [13] in the PPP infrastructure setting. Effective stakeholder engagement can be especially useful in the context of SSA, where infrastructure projects are often met with community resistance and legitimacy challenges.

The fact that risk allocation mechanisms are the partial mediators in the relationship between financing and outcomes (VAF=42.2%) is a valuable theoretical contribution. The above finding indicates that the adequacy of the financing structure has two modes of impact: a direct mode, which underscores the value of an effective financing structure, and an indirect mode, which operates through risk-allocation mechanisms.

In sum, the findings add to the PPP theory by integrating ideas from institutional economics, transaction cost theory, and stakeholder theory into a single empirical model. The findings show that effective PPP implementation in SSA should focus on several dimensions simultaneously, including establishing robust institutional and regulatory frameworks, developing appropriate financing structures, introducing balanced risk-allocation mechanisms, and conducting routine stakeholder engagement.

CONCLUSIONS

This paper has analysed the predictors of successful PPP implementation and the outcomes of infrastructure development in Sub-Saharan Africa, based on a quantitative study of 127 infrastructure professionals and policymakers across 15 countries. Through PLS-SEM, the research hypothesised a combined theoretical model that drew on institutional economics, transaction cost economics, and stakeholder theory. The results show that PPP success and infrastructure outcomes are important contributors to institutional quality, the effectiveness of regulatory frameworks, the adequacy of the financing structure, mechanisms of risk allocation, and the quality of stakeholder engagement.

Theoretically, this research makes several contributions. It formulates and empirically tests a unified framework that connects the institutional, regulatory, financial, operational, and stakeholder aspects of PPP implementation. Second, it builds on institutional economics and transaction cost economics by demonstrating their applicability to the SSA infrastructure context. Third, it provides quantitative data on the mediating role of risk allocation mechanisms. Fourth, it discusses the existing excessive use of the case study approach in SSA PPP research.

In a practical sense, the findings yield several recommendations. To begin with, institutional capacity building is a belief that should be taken seriously by SSA governments to develop successful PPP programs. Second, nations must enact comprehensive regulatory frameworks for PPP, such as specific PPP laws and specialised PPP bodies. Third, the focus is on the design of the financing structure, including efforts to build domestic capital markets and to manage currency risks. Fourth, governments and private partners should invest in developing advanced risk-allocation schemes to share risks between the parties. Fifth, governments should institutionalise systematic stakeholder-engagement processes in PPP programmes.

This research has various limitations. A cross-sectional design makes it impossible to draw causal conclusions. Although this study attempted to balance the sample geographically, it overrepresents more developed PPP markets. The study relies on subjective measures rather than objective project measurements. The paper focuses on infrastructure PPPs in general, without distinguishing across sectors.

To overcome these drawbacks, future studies should use longitudinal research to monitor PPP projects over time, comparative research to examine differences across various infrastructure industries, mixed-methods research combining quantitative analysis and case studies, and explore other moderating and mediating variables. Despite these shortcomings, this research paper makes a significant contribution to understanding the potential of PPPs to address the infrastructure shortage in Sub-Saharan Africa.

REFERENCES

1. African Development Bank. (2025). *African Economic Outlook 2025*. Retrieved from https://www.afdb.org/sites/default/files/documents/publications/afdb25-01_aeo_highlights_english_020625.pdf

2. Saha, D., & Hong, S. H. (2025). *Private Participation in Infrastructure (PPI): 2023 Annual Report (English).* Washington: World Bank Group.

3. International Monetary Fund. (2023). *Regional Economic Outlook Sub-Saharan Africa. Light on the Horizon?* Retrieved from https://www.imf.org/-/media/files/publications/reo/afr/2023/october/english/text.pdf

4. Das, D., Shrivastav, M. K., Krishna, S. V. S. P. J. S., Hazarika, D., Sharma, S. C., Chowdary, R. M., & Wadettiwar, P. P. (2025). Public-private partnerships (PPP) in infrastructure financing: A comparative study of developed and developing economies. *Heritage and Sustainable Development ISSN 2712-0554, 7*(1), 443–452. doi: 10.37868/hsd.v7i1.1087

5. Casady, C. B., Eriksson, K., Levitt, R. E., & Scott, W. R. (2019). (Re)defining public-private partnerships (PPPs) in the new public governance (NPG) paradigm: an institutional maturity perspective. *Public Management Review, 22*(2), 161–183. doi: 10.1080/14719037.2019.1577909

6. Osei-Kyei, R., & Chan, A. P. (2016). Implementing public–private partnership (PPP) policy for public construction projects in Ghana: critical success factors and policy implications. *International Journal of Construction Management, 17*(2), 113–123. doi: 10.1080/15623599.2016.1207865

7. Ke, Y., Wang, S., & Chan, A. P. C. (2010). Risk Allocation in Public-Private Partnership Infrastructure Projects: A Comparative Study. *Journal of Infrastructure Systems, 16*(4), 343–351. doi: 10.1061/(asce)is.1943-555x.0000030

8. Osei-Kyei, R., Jin, X., Nnaji, C., Akomea-Frimpong, I., & Wuni, I. Y. (2022). Review of risk management studies in public-private partnerships: a scientometric analysis. *International Journal of Construction Management, 23*(14), 2419–2430. doi: 10.1080/15623599.2022.2063013

9. North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge University Press.

10. Williamson, O. E. (1985). *The Economic Institutions of Capitalism*. Simon and Schuster.

11. Zheng, X., Liu, Y., Jiang, J., Thomas, L. M., & Su, N. (2021). Predicting the Litigation Outcome of PPP Project Disputes Between Public Authority and Private Partner Using An Ensemble Model. *Journal of Business Economics and Management, 22*(2), 320–345. doi: 10.3846/jbem.2021.13219

12. Cruz, C. O., & Marques, R. C. (2013). Endogenous Determinants for Renegotiating Concessions: Evidence from Local Infrastructure. *Local Government Studies, 39*(3), 352–374. doi: 10.1080/03003930.2013.783476

13. Freeman, R. E. (2010). *Strategic Management: A Stakeholder Approach.* Cambridge University Press

14. Akomea-Frimpong, I., Adeabah, D., Ofosu, D., & Tenakwah, E. J. (2021). A review of studies on green finance of banks, research gaps and future directions. *Journal of Sustainable Finance & Investment, 12*(4), 1241–1264. doi: 10.1080/20430795.2020.1870202

15. Yehoue, E., Hammami, M., & Ruhashyankiko, J. (2006). Determinants of Public-Private partnerships in infrastructure. *IMF Working Paper, 2006*(099), 1. doi: 10.5089/9781451863598.001

16. Dhanshyam, M., Srivastava, S. K., & Biswas, I. (2024). Determinants of public-private partnership governance structures: evidence from India. *Public Management Review, 27*(11), 2491–2513. doi: 10.1080/14719037.2024.2349125

17. Jooste, S. F., & Scott, W. R. (2011). The Public–Private Partnership enabling field. *Administration & Society, 44*(2), 149–182. doi: 10.1177/0095399711413868

18. Carbonara, N., Costantino, N., & Pellegrino, R. (2016). A transaction costs-based model to choose PPP procurement procedures. *Engineering Construction & Architectural Management, 23*(4), 491–510. doi: 10.1108/ecam-07-2014-0099

19. Opawole, A., Jagboro, G. O., Kajimo-Shakantu, K., & Olojede, B. O. (2018). Critical performance factors of public sector organisations in concession-based public-private partnership projects. *Property Management, 37*(1), 17–37. doi: 10.1108/pm-09-2017-0052

20. Carvalho, A. B., Maués, L. M. F., De Sá Moreira, F., & Reis, C. J. L. (2021). Study of the factors contributing to delays in construction works. *Ambiente Construído, 21*(3), 27–46. doi: 10.1590/s1678-86212021000300536

21. Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Partial Least Squares Structural Equation Modelling (PLS-SEM) using R. In *Classroom companion: business.* doi: 10.1007/978-3-030-80519-7