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ASSESSMENT OF CRITICAL SUCCESS FACTORS FOR AFFORDABLE HOUSING DELIVERY THROUGH PUBLIC-PRIVATE PARTNERSHIP POLICY IN THE FEDERAL CAPITAL TERRITORY, ABUJA, NIGERIA

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ABSTRACT

This study examined the impact of land access, building material affordability, electricity provision, and road infrastructure on the success of Public-Private Partnership policy (PPP) affordable housing projects in the Federal Capital Territory (FCT), Abuja. The study adopted a quantitative cross-sectional survey design, using structured questionnaires administered to 489 stakeholders involved in PPP housing projects, including construction professionals, estate developers, and beneficiaries. A sample of 220 valid responses was selected and analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis. The findings revealed that all four variables significantly influence the success of PPP affordable housing projects in FCT Abuja. Road infrastructure, electricity provision, land access, and building material affordability all showed positive and significant relationships with project success. Regression results further indicated that building material affordability had the strongest influence, followed by road infrastructure, land access, and electricity provision. The model explained a substantial proportion of the variation in PPP housing project success, indicating strong predictive power of the selected variables. The study concludes that the success of PPP affordable housing projects depends on the combined effect of land availability, construction cost stability, and provision of basic infrastructure services. Based on these findings, the study recommends improved land administration processes, promotion of locally sourced building materials, enhanced electricity supply within housing estates, and increased investment in road infrastructure. The study also suggests stronger government-private sector collaboration and targeted incentives to reduce housing delivery costs and improve affordability in Abuja.

Keywords: *Public-Private Partnership, Affordable Housing, Land Access, Infrastructure provision.*

1.0 Introduction

Affordable housing remains a critical development challenge in rapidly urbanizing cities in developing countries, particularly in Nigeria. The Federal Capital Territory (FCT), Abuja, continues to experience severe housing shortages driven by rapid population growth, rural–urban migration, and escalating construction costs. In response, the Nigerian government has adopted Public-Private Partnership policy frameworks as a strategy to improve housing supply by

leveraging private sector investment and public sector support, particularly in land provision and infrastructure development (Owotemu, Daniel & Abubakar, 2022)

Despite this policy intervention, empirical evidence shows that public private partnership policy housing projects in Abuja have not significantly improved affordability outcomes for low- and middle-income households. Studies indicate that most PPP housing schemes tend to favour high- and middle-income groups rather than the intended beneficiaries (Ahmed & Sipan, 2020; Ahmed, 2020). Similarly, recent reviews highlight that public private partnership policy housing delivery in Nigeria is constrained by land acquisition difficulties, dependence on imported building materials, weak infrastructure provision, and high development costs (Ahmed & Sipan, 2020; Arijeloye, Oke & Olaniyi, 2023).

Land access has been repeatedly identified as a major bottleneck in public private partnership policy housing delivery, with delays in allocation, titling, and acquisition increasing project costs and reducing affordability (Ahmed & Sipan, 2020). In addition, construction material affordability remains a major determinant of housing cost escalation, as Nigeria's heavy reliance on imported materials exposes projects to inflation and exchange rate volatility (Ahmed, Dogara & Saleh, 2022). Infrastructure deficiencies, particularly in electricity and road networks, also significantly affect housing project viability and sustainability (Arijeloye et al., 2023).

Recent studies further emphasize that inadequate infrastructure provision reduces project attractiveness, increases operational costs, and limits occupancy rates in public private partnership policy housing estates (Nwachukwu, Rodrigues & Kiamba, 2023; Asikogu & Ajayi, 2025). Despite these insights, existing literature has largely examined these factors in isolation or within general public private partnership policy implementation challenges rather than integrating them into a unified analytical framework that explains their combined effect on public private partnership policy housing success in Abuja.

This creates a clear research gap. There is limited empirical evidence that simultaneously evaluates land access, building material affordability, electricity provision, and road infrastructure as interrelated critical success factors influencing public private partnership policy affordable housing project success in the FCT. Addressing this gap is essential because housing outcomes are

shaped by the interaction of land, cost, and infrastructure systems rather than a single isolated factor.

Therefore, this study aims to evaluate the impact of land access, building material affordability, electricity provision, and road infrastructure on the success of public private partnership policy affordable housing projects in FCT Abuja.

1.1 Statement of Problem

Despite the adoption of Public-Private Partnership (PPP) arrangements as a strategy for addressing the growing housing deficit in Nigeria, affordable housing remains inaccessible to a significant proportion of low- and middle-income households in the Federal Capital Territory (FCT), Abuja (Yakubu & Nenrot, 2022). The rapid population growth, urbanization, and increasing demand for housing in Abuja have continued to exert pressure on the housing market, resulting in rising property values and escalating housing costs. Recent studies indicate that many PPP housing schemes in Abuja have fallen short of their primary objective of providing affordable housing, as a substantial proportion of the housing units delivered are targeted at middle- and high-income earners rather than the intended low-income population.

Several studies have identified critical challenges affecting the performance of PPP housing projects in Nigeria. These include difficulties in accessing and acquiring developable land, high costs of building materials, inadequate infrastructure provision, limited access to housing finance, and weak implementation of housing policies. Ahmed and Sipan (2020) observed that land acquisition challenges, dependence on expensive building materials, and poor infrastructural facilities constitute major barriers to the successful delivery of affordable housing through PPP arrangements in Abuja.

Furthermore, recent research on PPP mass housing projects in Abuja revealed that infrastructure-related risks, including inadequate electricity supply and poor transportation infrastructure, significantly affect project implementation, sustainability, and occupancy levels. These challenges often lead to project delays, increased construction costs, reduced investor confidence, and ultimately higher housing prices for end users.

Although previous studies have examined the challenges and risk factors associated with PPP housing delivery in Nigeria, most have focused on general implementation issues and risk management. Limited empirical attention has been given to evaluating the specific influence of land access, building material affordability, electricity provision, and road infrastructure as critical success factors for affordable housing delivery under PPP arrangements in the FCT, Abuja. Additionally, recent assessments of housing affordability in Abuja continue to show a widening gap between housing costs and household income levels, suggesting that existing PPP housing strategies have not sufficiently addressed affordability concerns (Sule, Esidene, & Adadu, 2022).

Therefore, there is a need for a comprehensive evaluation of how land access, building material affordability, electricity provision, and road infrastructure influence the success of PPP affordable housing projects in the FCT, Abuja. Such an investigation will provide empirical evidence that can assist policymakers, housing developers, and infrastructure planners in improving PPP housing policies and enhancing the delivery of affordable and sustainable housing in the Federal Capital Territory.

2.0 Literature Review

Public-Private Partnership policy (PPP) has increasingly been adopted in Nigeria as a mechanism for addressing the housing deficit and improving affordable housing delivery. However, studies indicate that the success of PPP housing projects depends largely on the availability of land, affordability of building materials, and provision of supporting infrastructure such as electricity and roads.

Ahmed and Sipan (2020) examined PPP affordable housing schemes in Abuja and found that access to land remains one of the most significant challenges affecting housing delivery. The study revealed that difficulties in land acquisition, land titling, and bureaucratic approval processes increase development costs and delay project implementation. The authors concluded that improved land accessibility is essential for achieving affordable housing objectives under PPP arrangements.

Similarly, Ahmed, Dogara, and Saleh (2022) investigated PPP models for affordable housing provision in Nigeria and identified land availability, affordable financing, and construction costs

as critical success factors. Their findings showed that the high cost of building materials, particularly imported materials, significantly contributes to increased housing prices and reduces the affordability of PPP housing schemes. The study recommended the promotion of local building materials as a strategy for reducing housing development costs.

In a study on the implementation of PPP housing programmes in the Federal Capital Territory, Sule, Esidene, and Adadu (2023) found that although PPPs have contributed to housing delivery in Abuja, they have not substantially improved access to affordable housing for low-income households. The study attributed this challenge to inadequate infrastructure provision, weak regulatory frameworks, and rising development costs. The authors emphasized the need for improved infrastructure and policy support to enhance the effectiveness of PPP housing projects.

Arijeloye, Oke, and Olaniyi (2023) evaluated critical risk factors in PPP-procured mass housing projects in Abuja and identified inadequate infrastructure, delays in utility provision, and high construction costs as major threats to project success. The study highlighted that unreliable electricity supply and insufficient road networks increase project risks, reduce investor confidence, and negatively affect project sustainability.

Nwachukwu, Rodrigues, and Kiamba (2023) investigated private-sector participation in affordable housing development in Nigeria and found that infrastructure availability significantly influences housing affordability and investment decisions. The study concluded that affordable housing projects are more successful where essential services such as electricity, roads, and other urban infrastructure are adequately provided.

More recently, Asikogu and Ajayi (2025) assessed the affordability of housing infrastructure under PPP housing schemes in Abuja and reported that inadequate infrastructure remains a major challenge in many housing estates. The study emphasized that electricity and road infrastructure are essential determinants of housing affordability, occupancy rates, and long-term sustainability of PPP housing developments.

The reviewed studies demonstrate that land access, building material affordability, electricity provision, and road infrastructure are recurring factors influencing the performance of PPP affordable housing projects. However, most existing studies have examined these factors

independently or as part of broader housing challenges. There is limited empirical research that evaluates the combined effect of these four critical success factors on the success of PPP affordable housing projects in the Federal Capital Territory, Abuja. This gap provides the justification for the present study.

3.0 Methodology

The study adopted a quantitative cross-sectional survey design, using structured questionnaires administered to a population of 489 stakeholders involved in PPP housing projects in the Federal Capital Territory, Abuja including construction professionals, estate developers, Estate surveyors and valuers, Residents/beneficiaries of PPP housing schemes, Officials of housing and urban development agencies. Using a purposive sampling technique, a sample of 220 valid responses was selected and data collected analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis. The instrument was validated by the researcher's supervisors and experts in test and measurement. Its reliability was confirmed with a Cronbach alpha coefficient of 0.8. Secondary data were collected from text books, journals, government publications and internet. Mean and standard deviation were employed to address the research questions. Inferential statistics (Pearson correlation, and multiple regression analysis) were used to test the hypotheses at a 0.05 significance level. Data analyses were conducted using the Statistical Package for Social Science (SPSS) version 23.

4.0 Findings

The data collected from the questionnaire administered were analysed using descriptive statistics (mean and standard deviation), and inferential statistics (Pearson correlation, and multiple regression analysis) were used to test the null hypotheses raised for the study. All hypotheses are deemed significant at 0.05 alpha level.

Research Question 1: To what extent has land accessibility affects the success of PPP affordable housing projects in FCT Abuja?

Hypothesis 1, H_{o1}: There is no significant relationship between public private partnership policy and land accessibility on affordable housing projects in FCT-Abuja

Table 1 Responses on Land Access

Statement	Mean	Std. Dev.
Availability of land influences project success	4.35	0.71
Ease of land acquisition affects housing delivery	4.28	0.83
Land title processing affects project timelines	4.19	0.88
Cost of land affects housing affordability	4.41	0.69

Source: Field work, 2026

A careful study of Table 1 reveals that Land access recorded mean scores ranging from 4.19 to 4.41.

Research Question 2: To what extent has the influence of building material costs on affordable housing delivery through PPP?

Hypothesis 2, H_{o2}: There is no significant relationship between public private partnership policy and influence of building material costs on affordable housing delivery in FCT-Abuja

Table 2: Responses on Building Material Affordability

Statement	Mean	Std. Dev.
Cost of cement affects housing affordability	4.47	0.66
Cost of steel influences project cost	4.43	0.73
Local materials reduce construction cost	4.11	0.91
Material price fluctuations affect project success	4.52	0.64

Source: Field work, 2026

A careful observation of Table 2 reveals that Building material affordability recorded mean scores ranging from 4.11 to 4.52.

Research Question 3: To what extent does electricity infrastructure contribute to affordable housing project success ?

Hypothesis 3, H_{o3}: There is no significant relationship between public private partnership policy and electricity infrastructure provision on affordable housing delivery in FCT-Abuja

Table 3: Responses on Electricity Provision

Statement	Mean	Std. Dev.
Reliable electricity attracts occupants	4.29	0.77
Electricity provision affects project value	4.34	0.74
Alternative power sources increase costs	4.38	0.72
Electricity infrastructure affects project success	4.42	0.69

Source: Field work, 2026

Examination of Table 3 reveals that electricity provision recorded mean scores ranging from 4.29 to 4.42.

Research Question 4: To what extent does road infrastructure affect the performance of PPP affordable housing project?

Hypothesis 4, H_{o4}: There is no significant relationship between public private partnership policy and road infrastructure provision on affordable housing projects delivery in FCT-Abuja

Table 4: Responses on Road Infrastructure

Statement	Mean	Std. Dev.
Good roads improve accessibility	4.58	0.59
Road infrastructure affects property value	4.46	0.70
Road quality influences occupancy rates	4.39	0.76
Road networks affect project success	4.49	0.68

Source: Field work, 2026

A careful study of Table 4 reveals that Road infrastructure recorded mean scores ranging from

4.39 to 4.58.

Table 5: Correlation Matrix

Variables	LA	BMA	EP	RI	SPPPH
LA	1.000				
BMA	0.561**	1.000			
EP	0.473**	0.519**	1.000		
RI	0.495**	0.538**	0.624**	1.000	
SPPPH	0.682**	0.741**	0.658**	0.703**	1.000

Source: Field work, 2026

N = 220

p < 0.01

Where:

LA = Land Access

BMA = Building Material Affordability

EP = Electricity Provision

RI = Road Infrastructure

SPPPH = Success of PPP Affordable Housing Projects

A careful examination of Table 5 reveals that Correlation coefficients between the independent variables and project success ranged from 0.658 to 0.741.

Table 6: Model Summary

Statistic	Value
R	0.823
R^2	0.677
Adjusted R^2	0.671
Std. Error	0.381

Source: Field work, 2026

A careful examination of Table 6 reveals that the regression model produced an R^2 value of 0.677.

Table 7: ANOVA Result

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	65.421	4	16.355	112.84	0.000
Residual	31.176	215	0.145		
Total	96.597	219			

Source: Field work, 2026

A careful examination of Table 7 reveals that The ANOVA result produced an F-statistic of 112.84 with a significance level of 0.000.

Table 8: Regression Coefficients

Variable	Beta (β)	t-value	Sig.
Constant	0.714	3.242	0.001
Land Access	0.248	4.812	0.000
Building Material Affordability	0.356	6.921	0.000
Electricity Provision	0.211	4.106	0.000
Road Infrastructure	0.297	5.643	0.000

Source: Field work, 2026

A careful evaluation of Table 8 reveals that the regression coefficients were: Land Access (β = 0.248), Building Material Affordability (β = 0.356), Electricity Provision (β = 0.211), Road Infrastructure (β = 0.297). All predictor variables recorded significance values below 0.05.

5.0 Discussion

This study evaluated the impact of land access, building material affordability, electricity provision, and road infrastructure on the success of Public-Private Partnership policy (PPP) affordable housing projects in the Federal Capital Territory (FCT), Abuja. The findings indicate that all four variables significantly influence the success of PPP affordable housing projects.

The findings revealed that land access has a positive and significant effect on the success of PPP affordable housing projects. Respondents indicated that land availability, ease of acquisition, title processing, and land cost are important factors influencing project performance. The regression results further showed that land access significantly predicts project success.

This finding is consistent with Ahmed and Sipan (2020), who reported that land acquisition challenges constitute one of the major obstacles to affordable housing delivery under PPP arrangements in Abuja. Similarly, Ahmed, Dogara, and Saleh (2022) found that difficulties associated with land administration, allocation, and titling increase development costs and delay

housing delivery. The present study therefore reinforces existing evidence that effective land administration remains a critical requirement for successful PPP housing projects.

On building material affordability and success of PPP affordable housing projects, the study found that building material affordability has the strongest influence on PPP affordable housing project success among all the variables examined. The high regression coefficient obtained for building material affordability suggests that fluctuations in the cost of construction materials significantly affect project implementation and affordability outcomes.

This finding supports the work of Ahmed et al. (2022), who identified rising construction material costs as a major contributor to housing unaffordability in Nigeria. It also aligns with findings by Nwachukwu, Rodrigues, and Kiamba (2023), who emphasized that reducing construction costs through local material utilization is essential for sustainable affordable housing delivery.

On electricity provision and success of PPP affordable housing projects, the findings showed that electricity provision has a significant positive effect on the success of PPP housing projects. This result agrees with findings by Arijeloye, Oke, and Olaniyi (2023), who identified infrastructure inadequacies, particularly utility-related challenges, as critical risks affecting PPP housing developments in Abuja.

On road infrastructure and success of PPP affordable housing projects, the study further established that road infrastructure significantly influences the success of PPP affordable housing projects. Respondents reported that road accessibility improves mobility, increases property attractiveness, and facilitates project implementation. This finding supports the conclusions of Asikogu and Ajayi (2025), who found that infrastructure quality significantly affects housing affordability and occupancy levels in Abuja's PPP housing estates. It is also consistent with the work of Nwachukwu et al. (2023), who reported that transportation infrastructure influences housing investment decisions and project sustainability. The result confirms that road infrastructure remains an essential determinant of housing project performance in rapidly urbanizing environments such as Abuja.

On the combined effect of the critical success factors, the regression results indicated that land access, building material affordability, electricity provision, and road infrastructure jointly explain

a substantial proportion of the variation in the success of PPP affordable housing projects. This finding suggests that housing project success is influenced by a combination of land-related, economic, and infrastructure factors rather than by any single factor acting independently. The finding aligns with contemporary PPP housing literature, which emphasizes the integrated nature of housing delivery systems. Previous studies have often examined these factors separately; however, the present study demonstrates that their combined influence provides a more comprehensive explanation of PPP housing project success in Abuja.

Although all variables significantly influenced project success, building material affordability emerged as the strongest predictor, exceeding the influence of land access and infrastructure variables. This outcome was somewhat unexpected given that land acquisition challenges are frequently identified as the primary barrier to housing development in Nigeria.

A possible explanation is the recent and sustained increase in construction material prices experienced across Nigeria. Consequently, respondents may perceive building material affordability as a more immediate challenge than land accessibility.

6.0 Conclusion

This study evaluated the impact of land access, building material affordability, electricity provision, and road infrastructure on the success of Public-Private Partnership (PPP) affordable housing projects in the Federal Capital Territory (FCT), Abuja. The findings revealed that all four factors significantly influence the success of PPP housing projects. Specifically, building material affordability emerged as the most influential factor, followed by road infrastructure, land access, and electricity provision. The results further demonstrated that these factors collectively contribute substantially to the performance, affordability, and sustainability of PPP housing developments. The study underscores the importance of creating an enabling environment for affordable housing delivery through improved land administration systems, reduce construction material costs, reliable electricity infrastructure, and adequate road networks. The findings contribute to the growing body of knowledge on affordable housing delivery and provide practical insights for stakeholders involved in PPP housing projects. By identifying the key determinants of project

success, the study offers evidence-based guidance for improving housing policies and infrastructure investment strategies.

Future research should expand the scope of investigation beyond the FCT to include other states and urban centres in Nigeria for broader comparative analysis. Further studies may also examine other critical success factors.

7.0 Recommendations

In order to improve the success of Public-Private Partnership (PPP) affordable housing projects in the Federal Capital Territory (FCT), Abuja: The Federal Capital Territory Administration (FCTA) and relevant government agencies should simplify and accelerate land acquisition, allocation, and title registration processes for PPP housing developers; Government should encourage the production and utilization of locally sourced building materials through tax incentives, research funding, and support for local manufacturers; Relevant authorities and PPP developers should prioritize the provision of reliable electricity infrastructure during the planning and implementation of housing projects; Government should ensure that adequate road infrastructure is incorporated into PPP housing schemes from the project planning stage; The government should create dedicated infrastructure support programmes that provide basic services such as roads, electricity, water supply, and drainage systems for PPP housing developments.

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