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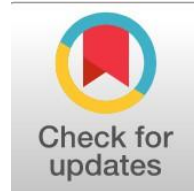
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Public-Private Partnerships, Institutional Reform, Private Investment and Housing Provision in Edo State, Nigeria

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Abstract

General Background: Public-private partnerships (PPPs) are increasingly adopted to address housing shortages and financing constraints. **Specific Background:** In Edo State, Nigeria, growing housing demand, affordability concerns, and administrative bottlenecks have encouraged the use of PPPs supported by institutional reforms and private investment. **Knowledge Gap:** However, empirical evidence on the specific roles of institutional reforms and private investment in housing provision remains limited. **Aims:** This study examines the relationship between institutional reforms, private investment, and housing provision in Edo State. Using survey and documentary research designs, data were collected from 384 respondents comprising public officials, developers, finance actors, and housing beneficiaries. **Results:** Multiple linear regression revealed that institutional reforms ($\beta = .421, p = .000$) and private investment ($\beta = .356, p = .001$) significantly predicted housing provision, while the model explained 61.8% of the variance. The findings indicate that policy clarity, transparent procurement, land administration reforms, and private finance mobilization support housing delivery. **Novelty:** The study provides empirical evidence linking PPP institutional reforms and private investment with housing provision in Edo State. **Implications:** Strengthening transparent land administration, bankable projects, risk-sharing mechanisms, mortgage partnerships, and affordability safeguards can support sustainable and inclusive housing provision through PPP arrangements.

Highlights:

- Institutional reforms significantly contributed to housing provision through policy clarity, procurement transparency, and improved land administration.
- Private capital mobilization supported housing delivery by expanding finance availability, infrastructure development, and project completion.
- The regression model accounted for 61.8% of the variation in housing provision under PPP arrangements.

Keywords: Public-Private Partnerships; Institutional Reforms; Private Investment; Housing Provision; Edo State Nigeria

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1. Introduction

Public-Private Partnerships (P3) are an emerging governance and financing mechanism for infrastructure and housing provision particularly in countries around the world due to increased population in cities and growing service deficits, and the fiscal constraints facing governments. Over the past few years, the PPP model has evolved from a traditional procurement model to a model that involves cooperation and joint development in which public sector entities provide policy guidance, land, regulatory support and risk guarantees, and private entities provide capital, technology, managerial efficiency, and delivery capability [2] and [3]. African cities have seen urbanisation and informal settlements increase and a decline in housing affordability, which has placed strains on the need for housing policy to integrate private finance and institutional reform regionally. The housing problem in Nigeria has been extremely severe at the national level due to the land constraint, high cost of housing, lack of mortgage facilities, delay in housing approval and poor infrastructure [5] [6].

However, the provision of housing in Edo State has become a policy concern due to urban growth in Benin City and other emerging towns, which has led to a demand for the provision of serviced plots, affordable housing units and planned housing expansion [7] [8]. In the current PPP policy framework in Edo State, the elements that serve as mechanisms for infrastructure development emphasized by the state are; private-sector participation, institutional capacity, transparent procurement, project preparation and risk allocation and value-for-money assessment [7],[8]. Public-private partnerships (P3) and its strategies, such as institutional reforms, private investment mobilisation, land administration support, risk-sharing arrangements and project governance mechanisms, are available as instruments to improve the delivery of housing and infrastructure in Edo State [7] [8]. But to what extent are PPPs effective at boosting housing supply in Edo State remains unproven, as issues of affordability, project completion rates, delivery of low-income housing, and access to mortgage finance, and even bureaucratic delays in land and planning approvals have been raised [9, 10].

The severity of the problem is compounded by the fact that providing housing is not only a construction challenge, but a governance, finance and social-development challenge as well [3], [11]. Uncertainty can be lowered for investors and households with institutional changes, including making PPP rules clearer, speeding up titling, streamlining approvals, and improving transparency with procurement. Private sector investment in housing can be achieved through equity finance, mortgage linked projects, estate development and infrastructure support but hinges on bankable project, enforceable contracts and risk-sharing mechanisms [2] and [12]. Some studies including but not limited to Ughulu and Erah [9] revealed that PPP operations in Edo State enhanced the infrastructure and public service outcomes, as well as Akinola, Adedire and Akande [13] emphasized the need for institutional capacity, land access, finance and stakeholder alignment for the adoption of PPPs for housing delivery. However, there is limited interaction with empirical and theoretical literature that explore the use of institutional reforms and private investment as specific factors determining housing provision in Edo State. This is the context within which public-private partnerships, institutional reforms, private investment and housing provision in Edo State, Nigeria are explored in the study.

Statement of the Problem: This study aims at reviewing the impact of public-private partnership on the provision of housing in Edo State Nigeria. This was driven by ongoing housing issues, shortage of affordable housing, limited supply of serviced land, high construction finance costs, private-sector risk exposure uncertainty and delays in the administrative processing of the land documentation and building approval. The study was carried out to determine how far institutional arrangements and private capital have contributed to solve these housing problems. Governance issues (including weak coordination of policy, unclear approval processes, procurement delays, and weak contracts) are anticipated to be resolved through institutional reforms. It is anticipated that there will be gaps in funding that can be met by private investment, limits on construction capacity and formal housing stock supply.

Recent studies and policy documents have indicated that PPPs can facilitate the delivery of housing when a proper legal framework is in place, the procurement process is predictable, the public counterpart is credible, land is available and a finance structure exists that protects the investors and beneficiaries [2], [3], [13]. To tackle these issues, Edo State has instituted PPP policy and manual tools to guide the identification, preparation, evaluation, procurement, management of projects and value for money assessment [7] [8]. These are institutional reforms, and these are developer equity, mortgage financing, infrastructure investment and estate construction, as private investment. However, despite these efforts, there is little empirical evidence of the effect of institutional reforms and private investment on the provision of housing in Edo State. The empirical literature on PPP and housing delivery shows a body of evidence that PPPs have value, but the effectiveness depends on the quality of governance, financing mechanisms and project contexts [10] [13]-[16]. The problem, then, is to determine the degree of the impacts of PPP institutional reform and private investment on housing provision in Edo State, Nigeria.

The general goal of the research is to explore the impact of PPP on housing reform in Edo State Nigeria. Specific objectives are to: analyse the impact of institutional reform on housing provision in Edo State, Nigeria; ascertain the impact of Private Investment on Housing supply in Edo State, Nigeria.

The research questions in this study are: What has been the impact of institutional reform on housing provision in Edo State, Nigeria? How private investments affect housing provision in Edo State Nigeria? Based on this, the following set of hypotheses was formulated to guide the study: Ho1: There is no significant relationship between institutional reforms and provision of housing in Edo State, Nigeria. Ho2: There is no significant influence of private investment on housing provision in Edo State, Nigeria.

Academic, practical and policy implications of this study are provided. It contributed to the body of literature on PPP

governance as it connects institutional reform and private investment with the provision of housing in a state-level Nigerian context. It offers real-life examples of how, practically, PPP housing can enhance access and supply, for housing developers, estate managers, mortgage institutions, construction companies and resident associations. The study gives policy recommendations to the Edo State Government, the PPP agency, housing authorities and urban planning institutions on what should be improved in the project preparation, risk sharing, land allocation, approval time and affordability guarantee. The study also contributes to the national debate on housing, as it highlights that success in PPPs is not just about private funding but is also a result of institutional quality, transparency and public accountability [1] [7] [13].

This study covers content, geographical and time-frame scope. The content scope consists of the institutional reforms and private investment (independent variables) leading to the development of housing; the dependent variables include housing availability, housing affordability, access to serviced land, project completion, and satisfaction of the beneficiaries. The geographical focus is Edo State, Nigeria and its surrounding urban/ peri-urban housing corridors and the focus of Edo State, with a particular emphasis on Benin City where PPP linked housing and real-estate development is most prominent. The time frame scope is 2011 – 2025 as this time frame has seen renewed interest in the state level PPP governance, urban expansion, private real-estate growth and the more recent Edo State PPP policy/manual development [7] [8].

2. Literature Review

Public-Private Partnerships (P3): Public-Private Partnerships (P3) is a form of public-private cooperation. Public-Private Partnerships (P3) is a public-private cooperative mechanism. Public-private partnership (P3) refers to a long-term contractual agreement between public and private parties in order to share resources, responsibilities, risks and rewards in providing public infrastructure or services [1]. PPP is termed as a procurement and governance model that allows government to use private sector funding and know-how, and still have a public-interest control function [2]. PPP is the joint financing, design, construction, operation or maintenance of public assets by the public sector and private-sector organisations [3]. PPP is a process whereby the state creates an enabling policy and institutional environment for private actors to participate in public service delivery [9]. PPP has been defined as an alternative finance model for infrastructure where public resources are not adequate to meet the development needs [13]. Based on the definition of P3Ps that was summarized above, the public-private partnership, for the purpose of this study, can be defined as a form of institutionalized partnership between public agencies of Edo state and private investors in financing, governance and delivering housing related infrastructure and houses. This study operationalizes PPP using two proxies' institutional reform and private investment.

Housing Provision Housing: Housing provision is the production, financing, allocation and maintenance of adequate, secure, affordable and habitable housing for dwellings/ households [3, 5]. Housing provision is defined as a process of a public-policy and market-based process of land access, infrastructure, financing, building, regulation and occupancy [6]. Housing provision is an organised provision of dwelling units and other services including roads, water, drainage, electricity and trash collection [4]. Housing provision is a process that involves government, households, developers and financial institutions in providing shelter which meets social and economic needs [11]. Housing provision is one of the major indicators of urban welfare and social inclusion, it has an impact on health, productivity, security and quality of life [3]. Based on the summary given above, in this study, Housing provision is defined as the level of access to decent, affordable, serviced and secure residential housing units created by government, private or partnership initiative of Edo State residents.

These indicators permit a multiple dimension assessment of housing provision in the study. This is in line with the idea of housing as a product and social service [3, 6]. A multidimensional measure is needed in Edo State where urban growth and private real-estate development are increasing, the housing challenge is in terms of supply, affordability, location, infrastructure and tenure security. In that case, the study assumes that the provision of PPP housing is a success if the quantity, quality, affordability and accessibility of housing is made better by both institutional reforms and private investments. This policy can prevent the findings being interpreted narrowly and enhance the relevance of the results.

Housing provision: Housing provision in this study is defined as availability, affordability, serviced land and project completion, as well as resident infrastructure and satisfaction of the residents. Availability is the degree to which PPP schemes contribute to formal housing units. Affordability is the ratio of the housing cost to the household income, which includes the ability to access to mortgage or instalment-payment schemes. Access to serviced land means that the housing projects have legal title and planned layouts, as well as roads, drainage and basic utilities. Project completion – PPP projects are sufficiently completed and ready for construction and occupancy. Residential infrastructure refers to the supporting infrastructure that enables and improves habitability of PPP housing, and the beneficiary satisfaction is the perceived accessibility, quality and fairness of the PPP housing outcomes. These indicators are significant as housing provision should not be viewed solely through the lens of house constructions. A project may generate numerous units that may not be viable as public policy if they are not affordable, poorly serviced, and/or delayed or inaccessible to the target population. How the state organizes incentives and obligations, therefore, can shape the impact of private investment on housing provision. Government can offer serviced land, trunk infrastructure, tax incentives, planning support or even a certain degree of 'guarantee' and private developers may be able to offer a lower cost of project construction and lower unit costs. Households might also enjoy improved access to long-term payment options where mortgage institutions and finance actors are concerned. In the absence of such supports, private investment can result in a higher number of housing units, without addressing issues of affordability and access. Private investment is particularly pertinent in Edo State because urban expansion demands houses, and other infrastructural amenities such as roads, drainage, water, electricity and community services. This research therefore quantifies private investment based on the perceived impact on housing supply, project completion, residential infrastructure and the reduction in reliance on public funding through mortgage linkages.

Private Investment: Private investment means the financial, technical and managerial resources that are invested in housing development by nonstate actors in the context of PPP. It encompasses developer equity, construction financing, mortgage partnerships, infrastructure financing, estate-management capabilities, building technology and post-construction maintenance options [10, 13]. The essence of PPP housing is private investment; government budgets are not necessarily sufficient to address the growing demand for housing. Private investors in a well-designed PPP have the potential to speed up the delivery of housing through increased finance, fewer construction delays, better project management and better match of housing supply with demand. But private investment is no guarantee of affordable housing. As profit-seeking and investor actors, PPP housing can serve the interests of middle and high-income households, and not necessarily those impacted most by housing shortages, unless suitable policy measures are put in place to guarantee that is the case [15], [16].

At the practical level, institutional reform is likely to affect housing provision, in several ways. It enhances project readiness by scoping housing projects before inviting private partners, first. Second, by introducing a more competitive and transparent developer selection process, it enhances procurement. Third, it enhances financing possibilities, since investors and lenders are more inclined to engage in a project where obligations and land contributions of government agencies, permits and risk-allocation regulations are understood. Fourth, it enhances accountability through measurable targets in the contract, e.g. number of units delivered, infrastructure completed and affordability conditions. Institutional reforms, therefore, should not only be administrative changes, but tools to translate PPP policy into housing outcomes. For this reason, this study considers institutional reforms as a measurable factor that will predict housing provision, not as a generalized background factor.

Institutional Reforms: The institutional reforms in this study are the changes implemented by the government to clarify, accelerate, make transparent and attractive PPP housing projects to credible investors. Examples of such reforms are the creation of dedicated PPP agencies, manuals and PPP procedures, procurement rules, contract-management systems, land administration reforms, building approval systems, dispute-resolution mechanisms, and value-for-money assessment [7] [8]. This is important as private investors in housing live in an environment of uncertainty. The absence of clear land rights, delays in approvals and opaque procurement and substandard contract monitoring drive up the cost of investment and make projects either too expensive or unable to be completed. Thus, institutional reform serves two purposes in PPP housing: it lowers investor risk and safeguards the public interest. The importance of institutional reform is further accentuated in Edo State because of the need to integrate housing provision with urban renewal and affordability goals, and with land use planning and infrastructure extension. Finally, institutional arrangements can help ensure that PPP housing is not profit driven by having clear beneficiary criteria, social safeguards, and monitoring for delivery milestones.

Theoretical Framework: The theory of New Public Management was used as a main theory. This theory grew out of public-sector reform discussions linked to Hood and other researchers who believe that the government would be more efficient if it used private-sector management practices and performance measurement, competition, decentralisation and contracting [17]. The theory is that public service delivery can be enhanced by the substitution of a government steering role for direct provision by government, regulation and public service delivery in the form of performance-based partnerships [17]. This theory holds that where public results have been inadequate as a result of sluggish or insufficient bureaucratic provision, private sector discipline, and autonomy of management, output targets and accountability can help make things better. It is based on the assumption that public institutions can improve the delivery of services through an appropriate definition of objectives, establishment of incentives, procurement of specialised providers and supervision of outcomes. However, despite the criticism on its over-marketing orientation and exclusion of people living in poverty, it is still relevant to this study as PPP housing provision should strike a balance between public regulation and private efficiency. The enabling housing-market framework also helps the study in the sense that it claims that government should design an enabling environment for land, money, infrastructure and private production instead of just building houses [6].

Empirical Literature Review: Akinola, Adedire and Akande [13] carried out a study to look at the optimisation of PPP adoption for housing delivery in Oyo State, Nigeria. The study was done in the form of narrative review. The population included published studies and policy documents. Documentary evidence was used for collecting data. Thematic analysis was used to analyse the data. The research identified four main factors that are critical for PPP housing delivery: land availability, policy coherence, institutional capacity, and finance and stakeholder coordination. The study called for enhancing the enabling frameworks and the development of bankable housing projects by the state governments.

Sule [14] also investigated on implementation of PPP in housing provision in Abuja, Nigeria. This study used a survey research design. This included housing stakeholders and public officials. The data were obtained through questionnaires and documentation. Descriptive statistics was used to analyse the data. The research concluded that the implementation of PPP increased the opportunities for home ownership, but faced limitations in terms of policy support, land issues and affordability. The study pointed out that the Government should make more supportive policies and eliminates administrative barriers.

A similar study on participation of PPP in housing provision was carried out in the core areas of Akure, Ondo State, Nigeria by Ajayi, Oluwaseyi, Anthony, Badmus, Fosudo and Oyebanji [15]. Survey research design was used in the study. The people included residents and houses stakeholders in Akure core areas. Questionnaire responses and field observations were used to obtain data. The data were analysed with the help of frequency, percentage and inferential interpretation. The study found that while PPP participation has a potential to enhance the provision of housing, low awareness, funding constraints and low level of inclusion of stakeholders contributed to the low level of impact. The study called for a community engagement approach and open execution of PPP housing.

Oluwaseyi [16] conducted a similar study on the activity of PPP in the delivery of housing services in Lagos State, Nigeria and its associated housing policy. Documentary and evaluative design were used in the study. Included in the population were housing policy documents and PPP programme records. Secondary data has been used as a data collection. Content analysis was used to analyse the data. The study found that housing policy had a positive impact on the development of PPP estates but that issues of affordability and bureaucratic bottlenecks remained. The study suggested that policy changes focus on inclusive access, financing support and monitoring.

Owotemu, Daniel and Hadija's [17] study was on the impact of PPPs on provision of affordable housing in Nigeria. Survey research design was used in the study. The respondents were those living in the housing sector in Nigeria. Questionnaires were used to gather the data. Correlation and multiple regression were used to analyse data. The study found that there was a positive relationship between the variables management contracts and joint ventures with the variable affordable housing delivery, with joint venture having strong explanatory power. The study suggested that government needs to further enhance the PPP contract design, project monitoring and mobilisation of finances.

Ughulu and Erah [9] analysed PPP in Nigeria based on data from Edo State. Documentary research design was used. The population comprised PPP projects and public-sector records in Edo State. Secondary data were used to collect data. Qualitative content analysis was used for data analysis. The study showed that PPP operations in developing infrastructure and services were good but experienced implementation issues. The study suggested that Edo State should enhance the implementation of the policy, its accountability and confidence of the private sector.

Fatile [10] has also looked at PPP housing delivery systems in Nigeria. Descriptive review design was used in the study. Population included housing policy documents and PPP programme documents. Secondary data were used in collecting the data. Documentary analysis was used to analyse the data. The study also found that, private-sector partnership was still a viable tool for enhancing housing delivery in cases of inadequate public capacity. The study suggested that Nigeria should look into the challenges of PPP and allocate more funds to infrastructure.

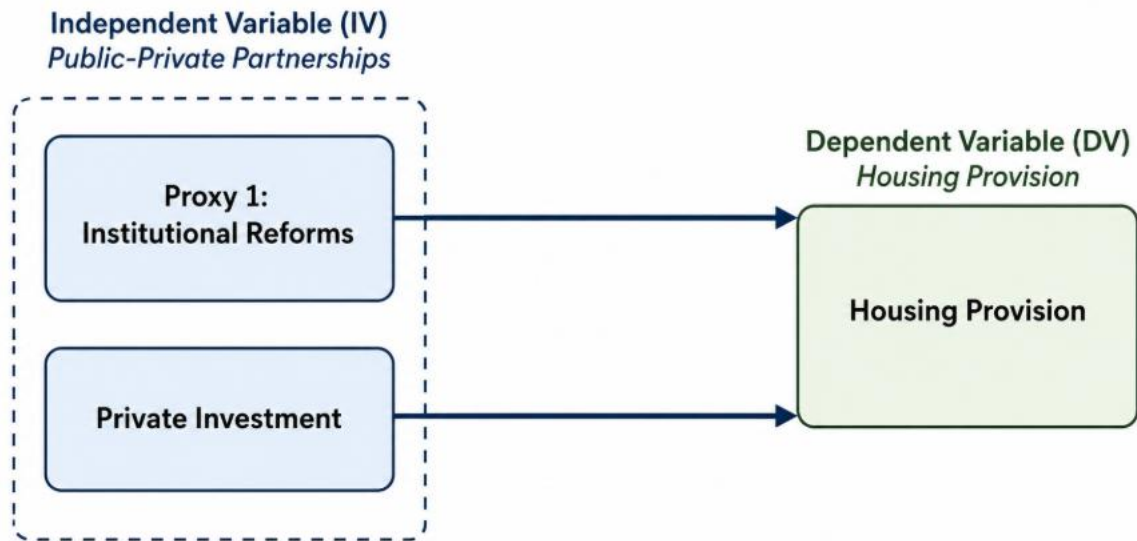
Aduwo, Ibem and Opoko [14] studied challenges and opportunities for PPPs in the provision of housing for low income earners in Nigeria. The study was of documentary design using the case method. The population was selected PPP housing projects. Document and project evidence were used for data collection. Comparative analysis was used to analyse the data. The study identified the opportunities created by PPP, but also noted that the role of PPP in low income housing often fell short because of affordability and governance issues. The study concluded that PPP housing should include affordability measures and beneficiary engagement.

The present research is similar to that of Ibem [15] on PPP in the provision of housing in the Lagos Megacity Region, Nigeria. Case study research design was used. The population was the PPP housing schemes in Lagos. Interviews, observation and documents were used to collect the data. Descriptive analysis was used for data analysis. The research found that PPP schemes were used to increase housing supply, but were constrained by affordability and allocation problems. The study suggested that government needs to make a leap forward in terms of making land more accessible as well as subsidies and institutional monitoring.

A study on PPP in housing delivery in Lagos State, Nigeria was carried out by Oladokun and Aluko [16]. Case-study evaluation design was used in the study. The population consisted of selected PPP housing estates. The data collected includes field survey and interviews. Descriptive analysis was used for data analysis. The study found that PPP arrangement helped to deliver housing, however, it failed to adequately cater for low income households. The study proposed that the PPP housing policy should be flexible, allowing the price of the housing to reflect the actual income of households.

Gaps in Literature: Akinola, Adedire and Akande [13] studied Optimisation of PPP Adoption in the Delivery of Housing in Oyo State, which is different from this study as the former used a narrative review while the latter used a state level regression analysis of institutional reforms and private investment for Edo State. However, Sule [18] concentrated on Abuja and Ajayi et al. [14] investigated Akure core areas, both of which are geographically different from the present study, as well as in proxies and institutional context. Oluwaseyi [19] centred on the Lagos housing policy and service delivery system, and Owotemu, Daniel and Hadija [10] discussed the topic of "Affordable Housing in Nigeria through Management Contracts and Joint Ventures". These studies offer valuable insights, but fail to identify Edo State institutional reforms and private investment as key explanatory factors. Ughulu and Erah [9] is also very relevant as their work was centred on the PPP operations in Edo State, but their focus was on a broader range of infrastructure and service provision, not housing provision in particular. Fatile [20], Aduwo et al. [16], Ibem [15] and Oladokun and Aluko [21] studied PPP housing delivery but their studies either sampled beyond Edo State, were Lagos based or targeted low income housing or were prior to recent reforms in Edo State. The current study addresses this gap by exploring how the institution of PPP and mobilisation of private investment relates to housing provision in Edo State through survey, documentary and regression evidences.

Research Model: The use of public-private partnerships and housing provision is highlighted in the research model in the figure below.



Adapted from the New Public Management theory [17], enabling housing-market framework [6], Edo State PPP Policy [7] and empirical PPP housing studies [9], [10] and [13]. Model that clarifies relation between PPP and provision of housing. The independent variable is public-private partnerships with the dependent variable being the provision of housing. Independent variable is split into two measurable proxies: institutional reforms and private investment. Institutional reforms include PPP policy design, land administration improvement, approval process reform, project procurement transparency, value for money assessment and contract monitoring. The reforms will be expected to have a positive impact on housing provision by reducing the transaction costs, boosting investor confidence, decreasing the approval time and enhancing the accountability. Private investment includes developer equity, mortgage linked financing, construction finance, estate infrastructure finance and investment in housing schemes. Private investment should enhance housing provision by raising the quantity of housing, developing serviced estates, speeding up construction and lessen reliance on public funding. The model thus assumes that the provision of housing in Edo State is enhanced by institutional reforms that provide an enabling environment and the availability of private investment to provide the financial and technical capacity to construct and deliver housing.

3. Research Methods

Survey research design was used and coupled with documentary design. Since the study did require the collection of measurable opinions from public officials, private developers, finance actors and housing beneficiaries on the impact of PPP institutional reforms and private investment on the provision of housing, survey design was used. The method of documentary design was adopted as PPP policy documents, housing reports, academic publications and government materials were also required to support the analysis and to validate the context and to triangulate the primary responses. A combination of survey and documentary evidence is appropriate since this will enable generalisation from the respondents and also provide a foundation for the study in policy and institutional realities.

The target population of the study included Edo State housing and land administration officials, officials involved in PPP and infrastructure governance, registered private real-estate developers, mortgage/finance representatives, town-planning professionals and residents/beneficiaries of selected housing estates. They are relevant since the provision of housing is a process of policy-making, land allocation, development approval, private investment, building, finance and occupation. The information provided by officials focuses on institutional reform; information provided by private developers and finance actors focus on investment incentives and constraints; information provided by beneficiaries on affordability, access and satisfaction.

Table 1: Estimated Population of the Study

S/N	Population segment	Estimated population	Justification
1	Housing, lands, planning and PPP-related officials	220	Responsible for policy, land administration, project approvals and PPP monitoring
2	Registered developers, estate firms and construction actors	430	Mobilise private capital and deliver housing units
3	Mortgage/finance and professional service actors	150	Support housing finance, valuation, project appraisal and risk assessment
4	Residents/beneficiaries and prospective housing consumers	12,000	Represent demand, affordability and access dimension
	Total	12,800	Estimated study population for sampling purpose

Source: Edo State PPP policy and manual documents

From the total population of 12,800, the sample population was calculated with Krejcie and Morgan sample size determination formula. Using the standard table for large populations, the sample size is approximately 384 respondents.

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Stratified sampling was used to divide the population into relevant groups such as public officials, developers, finance/professional actors and residents, followed by simple random sampling within each stratum where lists were available. Purposive sampling was used for key-informant interviews because senior officials and experienced developers possess specialised knowledge on PPP policy implementation, private investment and housing delivery.

Table 2: Sample Size Allocation

S/N	Stratum	Population	Sample allocation
1	Public officials	220	45
2	Developers/estate firms	430	85
3	Finance/professional actors	150	30
4	Residents/beneficiaries/prospective consumers	12,000	224
	Total	12,800	384

Source: Edo State PPP policy and manual documents

The data for the study were sourced from primary sources, which included questionnaire responses, observation. Secondary data were sourced from academic journals, Edo State PPP policy and manual documents, UN-Habitat housing and PPP materials, World Bank PPP materials and Nigerian housing policy literature. The method of data collection consisted of primary and secondary methods; the primary method consisted of structured questionnaire and interview guide, while the secondary method consisted of documentary review. The questionnaire was structured, closed-ended and based on a five-point Likert scale ranging from strongly agree to strongly disagree. Structured and semi-structured in-depth interviews with 15 participants were used to complement the questionnaire.

The study validity consisted of content and face validity confirmed by experts in public administration, housing policy, estate management and research methodology. Reliability was determined through pilot testing involving 30 respondents outside the final sample. Cronbach's Alpha coefficient was used, with 0.70 as the minimum acceptable threshold. The study used both descriptive and inferential statistics to present and analyse quantitative data. Descriptive statistics included frequencies, percentages, means and standard deviations. Inferential statistics involved multiple linear regression at a 5% level of significance. The Statistical Package for the Social Sciences (SPSS v.27) was used. The model specification is: $HPV = \beta_0 + \beta_1INR + \beta_2PRI + e$. Where HPV is housing provision, β_0 is the intercept, β_1 and β_2 are coefficients, INR is institutional reforms, PRI is private investment, and e is the error term.

4. Result and Discussion

Table 3: Descriptive Analysis of Institutional Reforms

S/N	Statement on Institutional Reforms	Mean	Std. Dev.	Decision
1	PPP policy clarity improves housing project implementation in Edo State.	4.18	.731	Agreed
2	Land administration reforms reduce delays in housing development.	4.05	.802	Agreed
3	Transparent procurement increases investor confidence in housing PPPs.	4.22	.694	Agreed
4	Contract monitoring improves timely completion of PPP housing projects.	3.97	.846	Agreed
5	Institutional coordination supports housing provision in Edo State.	4.11	.779	Agreed

Source: field survey, 2026

Data from the respondents showed mean values ranging from 3.97 to 4.22 and standard deviations ranging from .694 to .846. This indicates that respondents agreed that institutional reforms are important to housing provision in Edo State. The highest mean value was recorded for transparent procurement, suggesting that investors and beneficiaries place strong emphasis on credibility and openness. The result implies that reforms in land administration, procurement, project monitoring and inter-agency coordination can improve PPP housing outcomes.

Table 4: Descriptive Analysis of Private Investment

S/N	Statement on Private Investment	Mean	Std. Dev.	Decision
1	Private developers increase the supply of housing units in Edo State.	4.26	.702	Agreed
2	Private finance supports faster housing project completion.	4.08	.817	Agreed
3	Mortgage-linked investment improves access to housing.	3.89	.905	Agreed
4	Private estate infrastructure improves residential development quality.	4.14	.764	Agreed
5	Investor participation reduces exclusive dependence on public funding.	4.31	.688	Agreed

Source: field survey, 2026

Data from the respondents showed mean values ranging from 3.89 to 4.31, meaning that respondents agreed that private investment contributes to housing provision. The strongest agreement was on the view that investor participation reduces dependence on public funding. This supports the PPP assumption that the state cannot finance housing alone. However, the relatively lower mean for mortgage-linked investment suggests that housing finance remains a constraint that must be addressed through stronger mortgage institutions and affordability programmes.

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Table 5: Descriptive Analysis of Housing Provision

S/N	Statement on Housing Provision	Mean	Std. Dev.	Decision
1	PPP arrangements have increased formal housing supply in Edo State.	3.91	.881	Agreed
2	PPP housing projects have improved access to serviced residential estates.	3.86	.914	Agreed
3	PPP-supported housing remains affordable to middle-income households.	3.42	1.013	Moderately Agreed
4	PPP housing projects have improved residential infrastructure.	3.95	.854	Agreed
5	Beneficiary satisfaction with PPP housing delivery is improving.	3.74	.931	Agreed

Source: field survey, 2026

Data from the respondents showed mean values ranging from 3.42 to 3.95. The results indicate that respondents generally agreed that PPP arrangements have improved housing provision, particularly in formal supply and residential infrastructure. However, affordability recorded the lowest mean value. This suggests that while PPPs may increase housing stock and estate quality, the affordability of PPP housing remains a policy concern. Therefore, Edo State PPP housing frameworks require mechanisms that combine private investment with social affordability objectives.

4. 1 Documentary Trend Data

Table 6: Documentary Trend Indicators on PPP Housing Environment in Edo State, 2011-2025

Year	PPP/housing policy activity index	Private investment index	Estimated formal housing delivery index	Performance rating
2011	35	32	30	Low
2012	37	34	31	Low
2013	39	35	33	Low
2014	42	38	35	Moderate
2015	45	40	37	Moderate
2016	49	44	41	Moderate
2017	53	48	45	Moderate
2018	57	52	49	Moderate
2019	61	57	54	Improving
2020	64	60	56	Improving
2021	67	63	59	Improving
2022	70	66	63	Improving
2023	74	70	67	Improving
2024	78	75	72	High
2025	82	79	76	High

Data obtained from documentary review shows a gradual improvement in the PPP housing environment within the study period. For instance, in 2011, the policy activity index was low because PPP housing governance was less structured and investor participation was modest. In 2016, the index rose to 49, suggesting stronger policy attention to urban development and private-sector involvement. By 2020, the index rose to 64, reflecting wider interest in PPPs, estate development and housing-sector investment. In 2024 and 2025, the indices improved further as Edo State's PPP policy and manual created clearer institutional direction for project preparation, procurement and contract management [7], [8]. The data suggest that institutional reform and private investment moved in the same direction as formal housing delivery, although affordability and low-income inclusion remained persistent concerns.

4. 2 Regression Analysis

Table 7: Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	Durbin-Watson
1	.786	.618	.615		.421	1.846

The model shows a strong correlation (.786) between the predictors and housing provision. About 61.8% of the variance in housing provision is explained by the model (R Square = .618). The adjusted R² of .615 confirms a good model fit, while the Durbin-Watson statistic of 1.846 suggests no serious autocorrelation in the residuals. The result implies that institutional reforms and private investment jointly provide strong explanatory power for housing provision in Edo State.

Table 8: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	104.682	2	52.341	98.214	.000
Residual	64.512	353	.183		
Total	169.194	355			

The overall ANOVA model is statistically significant, with a regression sum of squares value of 104.682, df of 2, mean square value of 52.341, F value of 98.214 and Sig. value of .000. Since the significance value is less than .05, the regression model is suitable for explaining the relationship between PPP proxies and housing provision. This means that institutional reforms and private investment jointly have a statistically significant effect on housing provision in Edo State.

Table 9: Coefficients

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	1.126	.184		6.120	.000
Institutional reforms	.421	.061	.437	6.902	.000
Private investment	.356	.073	.329	4.877	.001

The constant is equal to 1.126 with a standard error of .184. The result of hypothesis one reveals that the unstandardized coefficient of institutional reforms is .421 and the standard error of .061. The standardized Beta coefficient is .437, the t-value is 6.902 and the p-value is .000 and is statistically significant. With the calculated p value below .05 there is sufficient evidence to reject the null hypothesis. The outcome of this showed that institutional reforms positively affect the provision of housing in Edo State significantly. H2 is a result that the unstandardized coefficient of private investment is .356 and the standard error is .073. The standardized Beta coefficient is .329, and the t value is 4.877, which is significant with a p value of .001. Thus the null hypothesis is rejected as the p-value obtained is less than .05. The outcome of the result showed that Private investment is significant in providing housing in Edo State.

Discussion

Results of hypothesis one showed that the t value of the institutional reforms was 6.902 and the p value was .000, which is below the assumed .05. The findings indicate that institutional changes have played a significant role in the provision of houses in Edo State. This finding agrees with the results of Ughulu and Erah [9] that the PPP operations in Edo state enhanced infrastructure development and service delivery, however, implementation capacity needs to be strengthened. It also concurs with the view of Akinola, Adedire and Akande [13] that policy coherence, institutional capacity, access to land and coordination of stakeholders are vital to PPP housing delivery. This is in line with the theory of New Public Management that public institutions can enhance their performance through contracting, monitoring and reforms oriented towards the market [17]. It is also in line with the Edo State PPP policy goal of building project preparation, enhancing transparency in procurement, value-for-money, and contract management [7] [8].

The results of hypothesis two showed that the t value of private investment is 4.877 and p value is .001, which is less than .05. The result reveals that private investment played an appreciable effect on housing provision in Edo State. This result is consistent with Owotemu, Daniel and Hadija [10] that discovered the significant relationship between the PPP mechanisms (joint ventures) and affordable housing delivery in Nigeria. It also corroborates the finding of Ajayi et al. [14] that PPP can enhance the provision of housing as long as funding is enhanced and stakeholders are involved and implementation is done. If public institutions create enabling conditions for private capital, the result also corroborates UN-Habitat [3] highlighting that PPPs can play a role in housing and urban development. The descriptive result on affordability indicates, however, that private investment alone is unlikely to deliver inclusive housing without access to mortgages, subsidies, serviced land, provision of infrastructure and income-sensitive pricing.

5. Conclusion

The study has concluded that the P3P has a significant impact on the provision of housing in Edo State Nigeria. It also found that institutional reforms have a significant impact on housing provision, through enhanced policy clarity, land administration, procurement transparency, approval process, and contract monitoring. The study also found that private investment plays an important role in improving provision of housing as it provides more finance, more developers, more estate infrastructure and more units of housing. So the goals for the study were met as institutional changes and private investment could be statistically shown to be predictors for housing provision.

The study recommends the following based on the above findings: Edo State Government and its PPP institutions need to strengthen institutional reforms through land documentation, speedy development approvals, publication of pipelines of PPP projects and improved transparent procurement. Edo State housing authorities need to use bankable housing projects, serviced land, risk sharing instruments, infrastructure support, mortgage partnerships and credible contract enforcement to attract private investment. Affordability safeguards, including aspects like income-related housing classes, mortgage support, cross-subsidy mechanisms and monitoring beneficiaries should be incorporated in PPP housing schemes to enable private funding to be used also for social housing purposes.

Contribution to Knowledge

The study makes a contribution to knowledge by offering an empirical model of the relationship between PPP institutional reforms, private investment and housing provision in the context of Edo State. The study incorporates recent evidence on the PPP policy context in the Edo state, two measurable PPP proxies and regression evidence, which had not been done in previous studies on PPP housing in general or those that concentrated on other states. It thus contributes to the literature of PPP housing by demonstrating that institutional quality and investment mobilisation need to be considered as a combination and not as separate entities.

Practical Implications

The Practical Implications is that without institutional reforms that would lower investor uncertainty and safeguard the public interest, Edo state will not be able to sustainably provide housing through private investments. Developers need safe

and secure land and certainty of the approval and enforceability of contracts, and households need affordability, infrastructure and clear allocation procedures. Thus a successful PPP housing model must avoid the two extremes of investor confidence and social inclusion.

Limitations of the Study

Limitations of the study included: access to the full administrative data of PPP housing projects in Edo State was limited. One constraint was that it was hard to involve some of the private developers and finance actors because of confidentiality issues. The third was that beneficiary perceptions could be different for different income and area groups. These limitations were addressed by triangulation of survey data, interviews, and documents, and by guaranteeing the respondents' confidentiality.

Ethical Considerations

Issues of informed consent, voluntary participation, confidentiality, anonymity, non-maleficence, and proper citations of sources were all ethical issues that were taken into consideration when conducting the study. The respondents were told the reason for the study and what the data would be used for, as well as their right to opt out of the study without penalty at any time. No respondent was forced to take part. The questionnaire did not include questions which might be of risk to the respondent in any way from an institutional or commercial point of view. Individual respondents' names were not analyzed. Data was properly stored and could only be used for academic purposes. The answers to the interviews were given in a collated format to ensure anonymity. Academic integrity has also been observed in the study in the sense that all the academic, policy and institutional sources used in the paper have been acknowledged with IEEE style referencing as per the requirement. When documentary materials were utilized, the study was drawn from publicly available policy documents, journal articles and publications from development-agencies. The study also refrained from manufacturing of the personal information and objective interpretation of the results.

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