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Research Article

Evaluation of the Incidences of Risk Occurrence and Severity in PPP-Procured Mass Housing Projects (PPP-MHPs) in Abuja, Nigeria

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Abstract: Risks in Public Private Procurement mass housing project (PPP-MHP) initiatives are emerging and this requires early risk identification and allocation to achieve the goal and sustenance of the scheme. The study, being a follow-up of a Delphi survey, elicits the opinion of respondents on the probability of occurrence and severity of identified risks in PPP-MHPs in Nigeria. The study adopts a quantitative research design approach by administering structure questionnaire survey on identified PPP-MHPs partners in Abuja, Nigeria. Data analysis was performed using descriptive and inferential statistical tools such as Mean item score (MIS), standard deviation, and Kruskal Wallis analytical techniques with the aid of SPSS software packages. The findings show that all the listed risk factors were found to be extremely high, very high, high, or moderate in terms of occurrence while all the listed risk factors recorded a very high level of severity on the delivery of PPP-MHPs. The top ten (10) risk factors frequently associated with PPP-MHPs are non-availability of finance, high finance cost, non-involvement of the host community, poor execution of housing policies, corruption and lack of respect for law, wrong perception of housing need by low-income earners, Illegal title to land, land acquisition and site availability, level of demand for the mass housing projects and unstable value of local currency. The respondents differs significantly on 29 risk factors in terms of occurrence and 40 risk factors in term of severity. The study, therefore, recommends that risk management culture should be highly encouraged among the PPP Partners in the sector. The study intends to enumerate the rate of occurrence of some itemized risk factors and their severities on the delivery of PPP – procured mass housing projects in Nigeria and the need to bookmark these risk factors in ensuring the sustainability of the PPP mass housing scheme.

Keywords: PPP, Mass-Housing Projects, PPP Risk, Risk Probability, Risk Occurring, Risk Severity, Housing Sector

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1. Introduction

The adoption of Public-Private Partnership (PPP) in procuring construction projects started in Nigeria in the early 90s which allows the private sector to be involved in the construction of mass housing [1-3]. Due to the housing crisis across Nigeria, The Federal government of Nigeria was compelled to engage in mass housing construction basically to meet the housing needs of the citizenry. However, Oluikpe [2] and Akpan [4] stated that the various policies regarding the housing schemes of the Federal Government at providing mass accommodation at an affordable cost for low and middle-income earners have failed woefully, hence the adoption of PPP in the sector. Abuja; the federal capital territory was chosen as the pioneer city for the PPP mass housing scheme in the year 2000 to be superintended by the Federal Capital Development Authority [5]. Muhammad and Johar [6] also opine that Abuja city has the largest proportion of PPP housing projects and

a conglomeration of experts in the industry, hence the need for the study area. It was also observed that PPP-MHP is not performing to cost, time, and quality since the scheme is also experiencing cost and time overrun that is common in the conventional method of procurement as a result of underlying risks inherent in PPP procurement [7]. It is against this backdrop that this study becomes imperative with a view to assessing the degree of occurrence and severity of risk factors in PPP-procured mass housing project delivery in Abuja, Nigeria.

1.1. The Housing Sector Contribution to Nigerian Economy

Housing is a complex product that is crucial for national development in terms of both economy and welfare. Uwatt [8] submits that the housing sector plays a very important role in the social and economic development of Nigeria due to its impact on macroeconomic indicators such as employment, savings, investment, and labor productivity. Investment in housing at such a significant level stimulates the demand for labour in the construction and building materials industries and thus affects income production in the economy. Okwu, Ngoepe-Ntsoane [9] opined that housing promotes investment opportunities that are capable of promoting sustainable growth and the development of an economy. Therefore, adequate provision of decent housing is an important measure of social welfare and economic development in any nation which also serves as an international human right. Festus and Amos [10] believed that the Nigerian housing market has tremendous opportunities that are waiting to be tapped since Government alone cannot fill the housing gap. According to UN Habitat [11], the housing sector has strong linkages for stimulating economic growth and development most especially in a depressed or stagnant economy like Nigeria's recent case. Investment in the sector will raise the standard of living of the people. However, Harris and Arku [12] opined that governments and academics were slow to recognize the potential of housing as a sectorial tool of economic development. This is a direct result of the dearth of affordable and decent housing for low and medium-income earners in Nigeria hence the adoption of PPP in the sector.

1.2. Features of PPP mass housing projects in Abuja, Nigeria

The PPP MHPs in Abuja, Nigeria are superintended by the Federal Capital Development Authority (FCDA). It is collaboration between the government and the Organized Private Sector (OPS) irrespective of the PPP options adopted. Ahadzie, Proverbs [13] opined that the MHPs represent the largest project-based sectors of the Nigerian construction industry. The MHPs are described as the mass production of housing development in a particular region or area usually owned by the public [14]. The features and characteristics associated with MHPs include the same project environment; same site conditions including topography; weather; bulky materials and design considerations. PPP- MHP as described in this study includes the design and construction of speculative standardized house units usually in the same location and executed within the same project scheme. Such house units could include a terrace, multi-story or tower blocks, maisonettes, semi-detached and/or detached residences, or a combination of them. Four main points are worthy of note as regards the description viz. (a) The PPP-MHPs are based on one or more standardized designs in the sense that the architectural design of all the phases is the same for all house units. This is necessary to ensure that the concept of repetition is met. (b) The PPP-MHPs involve the construction of domestic residences. (c) The PPP-MHPs are speculative in the sense that the acquisition of land, design of house units, and construction are made without reference to any specific customer in mind and (d) the PPP-MHPs are located in the same area and be part of the same scheme and/or contract conditions.

1.3. Risk Occurrence and Uncertainty in PPP-MHPs

Risk has been described with a different word and interpreted with a different meaning in the construction management literature [15]. Baloi and Price [16] defined risk as

exposure to the chance of occurrences of events that either adversely or favourably affects project objectives as a consequence of uncertainty. This definition points to the inherent characteristics of risk like risk event(s)/factor(s); likelihood of occurrence; consequences (losses/gain) and uncertainty [17]. Nicholas and Steyn [18] stated that the probability of occurrence of risk is considered together with the severity or consequence of a risk which implied that risk is a joint function of likelihood and severity. The likelihood measured is the probability or the chance of some risk event occurring while severity represents the extent of damage or loss if the risk factor eventuates. Winch [19] defines risk as the condition where information is missing in which a probability distribution can be assigned to the occurrence of events about which a decision needs to be taken. This can only be done if a reliable and appropriate data set is available from which the probability distribution can be calculated i.e. if there is adequate knowledge about the past, then probabilities can be used to increase the predictability of future events. Odeyinka [20] cited Winch (2010) to clarify the distinction between uncertainty and risk by adopting a cognitive approach to partition risk space into four compartments. The cognitive approach makes a clear distinction between when a probability distribution can be assigned to the occurrence of an event and the condition where it is not possible to assign a probability distribution due to the amount of information available per time. The multilayer definition of risk and uncertainty by Winch (2010) is as follows:

i. Known-known are the cognitive condition of risk, where the risk source has been identified and a probability can be assigned to the occurrence of a risk event given the risk source.
ii. Known unknowns are the cognitive condition of uncertainty where a risk source has been identified but a probability cannot be assigned to the occurrence of the risk event.
iii. Unknown known is the cognitive condition of uncertainty where somebody knows about the risk source and associated probabilities but is keeping that information private.
iv. Unknown unknowns are the cognitive condition of uncertainty where the risk source has not been identified and therefore the risk event cannot be known

As stated earlier some researchers have tried to distinguish between risk and uncertainty but as observed by Ameyaw [17] it will be difficult to distinguish between risk and uncertainty in real PPP projects; take for instance, the OPS in a PPP MHPs scheme may be uncertain whether the government will expropriate investment or renege on its obligation in the future and it is common to find both the case of risk and uncertainty in PPP MHPs. Literature has shown that risk in PPP projects is classified as site acquisition risk, design risk, construction risk, demand risk, political risk, operation risk, financial risk, and force majeure risk. Sanda, Anigbogu [15] submitted 74 risk factors associated with PPP housing projects in Nigeria. Awodele [21] identified 68 risk factors in PPP market-related projects and classified these risk factors into endogenous and exogenous risks. Awodele [22] identified 46 risk factors involved in housing projects procured using the public-private partnership system in Nigeria. This study adopted 63 risk factors from an earlier Delphi study conducted on PPP-MHPs [5].

2. Data and Methodology

A questionnaire survey was conducted on the level of risk occurrence and its severities on PPP-procured mass housing projects in Abuja, Nigeria. A total of 328 questionnaires were distributed out of 560 identified populations to various categories of respondents in the study area for six months while 276 of the distributed questionnaires were returned and 258 were fit for further analysis representing a 78.66% response rate. This response rate is above the usual rate of 20-30% for questionnaire surveys in construction

management studies Moser and Kalton [23]. Mean item score (MIS), standard deviation, and Kruskal Wallis analytical techniques were adopted for the study. To determine the level of risk occurrence and severity in the PPP-MHPs sector, the respondents were asked to score on a Likert scale of 7 where scale 1 represents extremely low occurrence/severity; scale 2 = Very low; scale 3 = Low; scale 4 = Moderate; scale 5 = High; scale 6 = Very high and scale 7 represent extremely high occurrence/severity. The MIS was determined using the equation;

$$MS = \frac{7_{n7} + 6_{n6} + 5_{n5} + 4_{n4} + 3_{n3} + 2_{n2} + 1_{n1}}{N}$$

Where MS = mean score of the variable; n = score given by respondents based on the 7-point scale from one to seven and N = several respondents that rated the variable while the Kruskal-Wallis test is used to test the differences between several independent groups and this was used to determine the significant difference in the opinions of the respondents on the listed variables.

Table 1 and Table 2 show the profile of the respondents where 71% of the respondents come from the public sector while the remaining 29% are from the Private sector. 37.2% of the respondents have a first degree, 47.3% of the respondents have 2nd degree while 2.3% and 13.2% of the respondents have HND and PGD as their highest academic qualifications respectively. Based on PPP experience, 42.2% of the respondents have between 11-15 years of experience, 36.4% have between 6-10 years of experience, and 20.2% have between 16-20 years of experience while the remaining 1.2% have between 1-5 years of experience with an average of 12 years PPP experience with 9 years average of PPP MHP experience. This is evident as experimenting with PPP in the procurement of Mass Housing is still a relatively new experience in the country. Professionally, the majority of the respondents (72.1%) have corporate membership of the various professional institutes, 11.2% have attained the highest honor (Fellow) of their various professional bodies, and 1.2% were still probationer members of their various professional institutes while the remaining 15.5% have professional qualification in other allied professions.

3. Level of Risk occurrence and Severity in PPP procured Mass Housing Projects

The mean score of respondents from both the Public and Private sectors that engaged in PPP procured Mass Housing projects on the likelihood of occurrence of risk factors and severity are analyzed and presented in Tables 3, 4, 5 and 6. The mean index of risk occurrence in PPP-MHP in Abuja ranges from 4.00 to 6.60 which suggest that the likelihood of risk occurrence ranges from moderate to extremely high levels. The top 10 factors accounted for the availability of finance (M.S, = 6.60), high finance cost (M.S, = 6.27), non-involvement of the host community (M.S, = 6.06), poor execution of housing policies (M.S, = 6.06), corruption and lack of respect for the law (M.S, = 6.06), wrong perception of housing need by low-income earners (M.S, = 5.97), illegal title to land (M.S, = 5.94), land acquisition and site availability (M.S, = 5.91), level of demand for the mass housing projects (M.S, = 5.82) and unstable value of the local currency (M.S, = 5.78). All the risk factors listed recorded a very high level of occurrence; however, the respondents are different significantly on twenty-nine (29) of the sixty-three (63) in terms of occurrence in PPP mass housing projects. Some of the risk factors with a significant difference include high cost of finance, illegal title to land, high bidding cost, poor decision-making process, delay in project approval and permits, land grabbing/encroachment, possible expropriation/nationalization of assets, import and export restrictions, environment, staff crises, and late design changes. The aforementioned risk factors have p-values ranging from = 0.000.

Table 1. Profile of the Respondents

Category	Classification	Frequency	Percent
Sector Category	Public Sector	183	70.9
	Private Sector	75	29.1
	Total	258	100
Years of Construction Experience	1 – 5	3	
	6 – 10	34	
	11 – 15	91	
	16-20	130	
	Total	**258**	
	Average		**14.74**
Highest Academic Qualification			
	HND	6	2.3
	PGD	34	13.2
	BSc/B.Tech	96	37.2
	MSc/MTech	122	47.3
	Total	**258**	**100**
Designation of Respondents			
	Chief Executive/Managing Director	41	15.9
	Project Manager	25	9.7
	Financial Adviser	15	5.8
	Facilities manager	3	1.2
	Quantity surveyor	63	24.4
	Architect	34	13.2
	Engineer	43	16.7
	Builder	28	10.9
	Others	6	2.3
	Total	**258**	**100**

Table 2.Profile of the Respondents Cont.

Category	Classification	Frequency	Percent
Years of PPP Experience			
	1 - 5	3	
	6 - 10	94	
	11 - 15	109	
	16 - 20	52	
	Total	**258**	
	Average		**12.07**
Years of PPP Mass Housing Experience			
	1 – 5	3	
	6 – 10	212	
	11 – 15	40	
	16 – 20	3	
	Total	**258**	
	Average		**8.83**
Professional Qualification			
	Graduate membership	3	1.2
	Corporate membership	186	72.1
	Fellow	29	11.2
	Others	40	15.5
	Total	**258**	**100**

The mean score of respondents was also conducted on the severity of the risk factors in PPP-procured mass housing projects and is presented in Table 3. The mean index of risk severity ranges from 4.14 to 6.54 which suggest that the severity of the risk factors ranges from moderate to extremely high levels. The top 10 factors accounted for the availability of finance (M.S, = 6.54), high finance cost (M.S, = 6.22), corruption and lack of respect for the law (M.S, = 6.03), wrong perception of housing need by low-income earners (M.S, = 5.98), land acquisition and site availability (M.S, = 5.92), illegal title to land (M.S, = 5.90, SD = 0.397), non-involvement of the host community (M.S, = 5.90, SD = 0.567), poor execution of housing policies (M.S, = 5.88), level of demand for the mass housing projects (M.S, = 5.83) and inadequate experience in PPP (M.S, = 5.79). All the risk factors listed recorded a very high level of severity; however, the respondents differ significantly on forty (40) of the sixty-three (63) in terms of risk severity in the PPP mass housing project. Some of the severity risk factors with a significant difference include high cost of finance, illegal title to land, high bidding cost, poor decision-making process, delay in project approval and permits, land grabbing / encroachment, possible expropriation/ nationalization of assets, import and export restrictions, environment, staff crises, and late design changes. The aforementioned risk factors have p-values of 0.000.

Table 3. Level of Risk Occurrence/Probability in PPP Procured Mass Housing Projects

Risk Factors	Risk Probability	Std. Deviation	Rank	Asymp. Sig
Availability of Finance	6.60	0.855	1	0.136
High Finance cost	6.27	0.740	2	.000*
Non-involvement of the host community	6.06	0.544	3	.000*
Poor execution of Housing Policies	6.06	0.471	4	0.050
Corruption and lack of respect for Law	6.06	0.446	5	0.016
Wrong perception of housing need by low-income earners	5.97	0.462	6	0.000*
Illegal Title to Land	5.94	0.418	7	0.018
Land acquisition and Site availability	5.91	1.155	8	0.286
Level of Demand for the mass housing projects	5.82	0.808	9	0.145
Unstable Value of Local Currency	5.78	0.471	10	0.874
Inadequate experience in PPP	5.75	0.749	11	.000*
Lack of creditworthiness	5.67	0.787	12	0.200
Risk regarding Pricing of Product/service	5.62	0.639	13	.000*
Prolonged negotiation period before initiation	5.55	0.758	14	0.015
Influential Economic Events (Boom/Recession)	5.55	0.916	15	0.241
Inadequate distribution of responsibility and risks	5.53	0.987	16	.000*
High Bidding cost	5.52	0.765	17	.003*
Lack of Commitment from Public/Private Partners	5.47	0.717	18	0.008*
Poor Financial Market	5.43	0.792	19	0.163
Financial attraction to project investors	5.40	0.942	20	0.163
Construction time delay	5.39	0.658	21	0.151
Inflation rate volatility	5.39	0.802	22	.000*
Poor decision-making process	5.38	0.800	23	0.032
Inadequate distribution of Authority between Partners	5.34	0.695	24	0.205
Delays in Project approvals and permits	5.34	0.768	25	0.001*
Construction cost overrun	5.26	0.602	26	0.111
Change in Government	5.24	0.788	27	0.349
Public opposition to the mass housing projects	5.22	1.088	28	0.149
Interest rate volatility	5.19	0.824	29	.000*
Force Majeure	5.17	0.957	30	0.043
Weather	5.11	0.871	31	.000*
Operation cost overrun	5.05	0.658	32	.000*
Land Grabbing/Encroachment	4.95	0.852	33	.000*
Organization and Coordination risk	4.90	0.975	34	.000*
Inability to service debt	4.81	0.813	35	0.025
Competition risk	4.74	0.618	36	0.124
Lack of tradition of private provision of public services	4.74	1.157	37	0.055
The bankruptcy of the investors (OPS)	4.72	0.883	38	.000*

Table 4. Level of Risk Occurrence/Probability in PPP Procured Mass Housing Projects Cont.

Risk Factors	Risk Probability	Std. Deviation	Rank	Asymp. Sig
Operational revenue below the projection	4.69	0.622	39	.000*
Inconsistencies in Government Policies	4.68	0.711	40	0.143
Environment	4.64	0.681	41	.000*
Third-party tort liability	4.57	0.657	42	.000*
Different working methods/know-how between partners	4.54	0.789	43	0.080
Change in tax regulation	4.50	0.795	44	0.852
Residual value (After the concession period)	4.47	0.764	45	.000*
Design deficiencies	4.47	0.943	46	0.548
Availability of appropriate labor/material	4.45	0.763	47	0.019
Excessive contract variation	4.43	0.715	48	.000*
Low operating productivity	4.41	0.823	49	0.025
Rate of Return restrictions	4.39	0.940	50	.000*
Lack of Government guarantee	4.39	1.001	51	0.009
Industrial regulation change	4.33	0.726	52	.005*
Legislation change/Inconsistencies	4.28	0.715	53	0.092
Cultural differences between the main Stakeholders	4.27	1.159	54	0.672
Insolvency/default of Subcontractors and Suppliers	4.25	0.655	55	.000*
Strong Political opposition	4.21	0.685	56	.000*
Unproven Engineering techniques	4.20	0.719	57	.000*
Import and Export restriction	4.19	0.645	58	.001*
Poor Quality of Workmanship	4.12	0.754	59	.000*
Possible expropriation/nationalization of assets	4.12	0.755	60	.000*
Geotechnical conditions	4.12	0.895	61	0.289
Staff crises	4.11	0.686	62	.000*
Late design changes	4.00	0.851	63	0.016

** **Significant: 0.01***

Table 5. Level of Severity of Risk Factors in PPP procured Mass Housing Projects

Risk Factors	Risk Severity	Std. Deviation	Rank	Asymp.Sig
Availability of Finance	6.54	0.544	1	0.593
High Finance cost	6.22	0.54	2	.000*
Corruption and lack of respect for Law	6.03	0.408	3	.000*
Wrong perception of housing need by low-income earners	5.98	0.305	4	0.053
Land acquisition and Site availability	5.92	0.488	5	0.001*
Illegal Title to Land	5.90	0.397	6	0.026
Non-involvement of the host community	5.90	0.567	7	0.001*
Poor execution of Housing Policies	5.88	0.516	8	.000*
Level of Demand for the mass housing projects	5.83	0.458	9	0.317
Inadequate experience in PPP	5.79	0.512	10	.000*
Inadequate distribution of responsibility and risks	5.76	0.644	11	.000*
Unstable Value of Local Currency	5.68	0.566	12	.000*
Lack of creditworthiness	5.68	0.69	13	0.880
Construction time delay	5.62	0.511	14	0.001*
Lack of Commitment from Public/Private Partners	5.60	0.623	15	.000*
Risk regarding Pricing of Product/service	5.57	0.682	16	.000*
Force Majeure	5.54	1.033	17	.000*

Table 6. Level of Severity of Risk Factors in PPP procured Mass Housing Projects- Cont'd

Risk Factors	Risk Severity	Std. Deviation	Rank	Asymp.Sig
Land Grabbing/Encroachment	5.52	0.77	18	0.388
Inadequate distribution of Authority between Partners	5.51	0.765	19	.000*
Construction cost overrun	5.50	0.567	20	.000*
Prolonged negotiation period prior to initiation	5.48	0.586	21	.000*
Interest rate volatility	5.47	0.76	22	.000*
Poor Financial Market	5.46	0.963	23	.000*
Poor decision-making process	5.45	0.604	24	0.931
Influential Economic Events (Boom/Recession)	5.41	0.785	25	.000*
High Bidding cost	5.38	0.848	26	0.029
Financial attraction to project investors	5.36	1.047	27	0.064
Delay in Project approvals and permits	5.34	0.641	28	0.540
Change in Government	5.30	1.073	29	0.031
Public opposition to the mass housing projects	5.15	1.286	30	0.001*
Weather	5.08	1.092	31	.000*
Inflation rate volatility	5.06	0.992	32	.000*
Operation cost overrun	5.04	0.716	33	.000*
Insolvency/default of Subcontractors and Suppliers	5.02	0.873	34	.000*
Inability to service debt	4.99	0.895	35	0.010
Excessive contract variation	4.93	0.832	36	.000*
Organization and Coordination risk	4.92	0.805	37	.000*
Bankruptcy of the investors (OPS)	4.87	1.028	38	0.011
Operational revenue below the projection	4.80	0.719	39	.000*
Geotechnical conditions	4.79	0.946	40	.000*
Different working methods/know-how between partners	4.75	0.781	41	.000*
Lack of tradition of private provision of public services	4.70	0.999	42	0.052
Lack of Government guarantee	4.70	1.091	43	0.140
Legislation change/Inconsistencies	4.68	0.861	44	0.322
Environment	4.67	0.639	45	0.062
Inconsistencies in Government Policies	4.66	1.105	46	.000*
Availability of appropriate labour/material	4.64	0.912	47	0.014
Third party tort liability	4.61	0.692	48	0.001*
Possible expropriation/nationalization of assets	4.60	0.912	49	.000*
Rate of Return restrictions	4.60	1.177	50	.000*
Low operating productivity	4.59	0.619	51	.000*
Competition risk	4.55	0.837	52	.000*
Import and Export restriction	4.49	0.625	53	.000*
Poor Quality of Workmanship	4.48	0.814	54	0.041
Unproven Engineering techniques	4.45	0.694	55	.000*
Design deficiencies	4.40	1.15	56	0.007*
Residual value (After concession period)	4.38	0.771	57	.000*
Staff crises	4.36	0.589	58	0.043
Industrial regulation change	4.30	0.755	59	.004*
Late design changes	4.30	1.041	60	0.620
Change in tax regulation	4.29	1.016	61	.000*
Cultural differences between the main Stakeholders	4.23	1.189	62	.000*
Strong Political opposition	4.14	0.913	63	.000*

** **Significant: 0.01***

4. Discussion of research findings

It is evident in this study that the 63 risk factors listed for the respondents were found to either be extremely high, very high, high, or moderate in terms of occurrence while all the listed risk factors recorded a very high level in terms of severity; this is to identify the key risks that could significantly influence the delivery of PPP MHPs in Abuja, Nigeria. The top ten (10) risk factors occurring with a high level of severity in PPP MHPs in Abuja are discussed briefly, namely:

4.1. Availability of Finance/ Financial Risk

Availability of finance or financial risk is the most risk factor occurring in PPP-MHPs in Abuja, Nigeria according to this study with a probability of 6.60 and the highest severity of 6.54. Ameyaw [17] submits that the major risk affecting the attraction of private investment is the non-availability of finance owing to the failure of the stakeholders to fulfil investment commitment, most especially in developing counties like Nigeria and this makes private investment to be risky, where investors are unwilling to commit huge financial resources without a government guarantee. The financial effects of these risks lead to lower productivity, poor performance, and an increase in the cost of the project.

4.2. High Finance Cost

Prevailing economic conditions in the operating environment beyond the control of the organized private sector (OPS) could lead to high financing costs for the PPP MHPs. This risk factor has the 2nd most occurring risk factor in the sector with a probability of 6.27 and severity of 6.22. As good as the PPP initiative is in the sector, a high finance cost is stalling its delivery resulting in delays and poor workmanship [24]. A private firm might be inaccurate in submitting her estimates during the bidding stage as a deliberate attempt to win the contract while underestimating the volume to construct and maintain the estate. This activates poor operating cost controls which threaten successful service delivery.

4.3. Corruption and Lack of Respect for Law

Corruption is a global problem that poses a serious threat to the development of a country and its people. States, developed or developing, are equal victims of this problem [25]. Corruption, apart from affecting the public at large, also causes reduced investment, lack of respect for the rule of law and human rights, undemocratic practices, and diversion of funds intended for development and essential services, affecting the government's ability to provide basic services to its citizens. Corruption and lack of respect for the law can be seen as the behaviour of corruption of government officials that will increase the relationship between the government and the project company; it also includes the government's inconsistent application of new regulations and laws.

4.4. Non-involvement of the Host Community

Empirical evidence indicates that compensation can prove effective in gaining public acceptance for citing facilities in a particular location or community and this can only be effective when the host community is involved before citing such facilities in their neighborhood [26]. These facilities require creative mitigation measures such as independent inspections of the facility and local shutdown power. Even then, they may be viewed as too risky to be acceptable with or without compensation. Villagers may felt that the unequal distribution of economic benefits within their village was a considerable challenge to participate in such a programme. Members of the community benefiting from the programme are those who are not the indigene of such a community hence they may be less concerned about the success of such a programme. This might be the case of PPP-MHPs as the scheme is not performing to expectation [27].

4.5. Poor execution of Housing Policies

WHO [28] stated that there are numerous examples of implemented policies that support healthy housing globally but there exist gaps in the existence of policy across all countries. Nigeria is perennially plagued by myriad problems which have contrived the nation's drive for socio-economic growth and sustainable development. Consequently, successive governments over the years have battled to alleviate the nation of its socioeconomic, environmental, and geopolitical challenges, thus beleaguered by pervasive inadequate housing [29]. This indicates a palpable lack of sustainable housing in the country and calls for the need to institute more strategic plans, programs, and policies to ensure the sustainable development of safe, affordable, and robust housing for the populace. The current state of housing development in the country remains poor despite vast resources expended through various schemes over the years, thus there is a need for a change in the perception of housing policies by stakeholders in the country.

4.6. Wrong Perception of Housing need by Low-Income Earners

The wrong perception of housing needs by low-income earners might be connected with the inadequate mortgage finance in the country and the low quality of the finished product. The history of housing finance in Nigeria had been a terrible one [30], some of these constraints were identified as unstable macroeconomic conditions, a weak legal framework for property rights, lack of mortgage market infrastructure, and unavailability of funds for long term finance intermediation but poor access to finance was the major identified impediment to having affordable housing in Nigeria brought about by the wrong perception [31].

4.7. Illegal Title to Land

Land registration generally describes systems by which matters concerning ownership, possession, or other rights in land can be recorded (usually with a government agency or department) to provide evidence of title, facilitate the transaction, and prevent unlawful disposal which varies according to jurisdiction [32]. The basic idea behind title registration is to confer on every owner or purchaser a title guaranteed by the state. The formal land market (the Land Use Act) is unable to meet the demand for urban land when and where needed for the teeming urban population. This is because of its implementation process which is time-consuming, frustrating, cumbersome, and highly bureaucratic [33]. Some members of the OPS might have access to more than the allotted land space due to their connections to people in government which consequently encourages land speculation which is not healthy for urban land management.

4.8. Land Acquisition and Site Availability

In most PPP contract arrangements, the host government will provide the means of acquiring land for the Private partners to construct the facility. Most of the time, the government does this through its power of compulsory acquisition also known as expropriation of assets or compulsory purchase. Land availability at the appropriate time and reasonable price are critical to the delivery of PPP Mass housing projects at early completion and at reduced development cost; however, the party that bears the risk varies from project to project owing to the contract clauses and conditions.

4.9. Level of Demand for the Mass Housing Projects

A low level of demand or decline in the demand for the completed PPP-procured Mass housing projects by the general public may be a result of high inflation and an increase in interest rate. Makinde [34] stated that there is a gap in knowledge between the requirement for housing and the ability to obtain the preferred housing type, which results in an effective request crisis for affordable housing in the country. Although it is clear

there is a housing shortfall, it is fundamental to know that people can only obtain what they can to meet the expense.

4.10. In-Adequate Experience in PPP

Adequate PPP experience may be lacking, particularly in a sector where PPP is still emerging like the housing sector. This risk is common across public agencies, lack of PPP experience and knowledge by government representatives indicates a lack of capacity to negotiate contracts and guarantees from multi-national lenders to negotiate successful PPPs. Tati [35] stated that the lack of attention or experience to handle risk transfer, competition, and contestability eroded the PPP's capacity among the stakeholders and this leads to strained relationships, protracted negotiations, and project implementation problems.

5. Conclusion

The study reported on the rate of risk occurrence and severity associated with PPP-procured mass housing projects this is made possible by previously piloting the study through a two-stage Delphi procedure in which the risk associated with the sector was established. Sixty-three risk factors were found to be associated with PPP-procured mass housing in Nigeria and these were subjected to descriptive and inferential statistics. In terms of the likelihood of occurrence of risk factors on PPP MHPs, the top 10 factors with a high probability of occurrence are the availability of finance, high finance cost, non-involvement of the host community, poor execution of housing policies, corruption and lack of respect for the law, wrong perception of housing need by low-income earners, illegal title to land, land acquisition and site availability, level of demand for the mass housing projects and unstable value of the local currency. All the risk factors listed recorded a very high level of occurrence and high level of severity.

The implication for practice is that it provides the stakeholders in PPP-MHPs with comprehensive checklists that can aid in developing PPP risk assessment guidelines in the sector though both partners should be aware of the dynamic nature of risk because new ones might be emerging especially in the PPP MHP sector. The divergent view of the PPP partners involved in MHPs reinforces the short history and lack of PPP experience and expertise in the country. Awodele (2012) opined that the failure of some privatized projects in Nigeria was due to the short history and lack of PPP experience and expertise in the country. The study, therefore, recommends a risk management culture to be cultivated among the PPP Partners in the sector. The sector is expected to first generate a list of potential risk events on a PPP project as it was observed that there are no formalized approaches for allocating risks in PPP Mass Housing projects It was observed that the investment in the sector was highly risky, thus we also recommend that both the Public and the private sectors should endeavor to reduce or minimize the risk level by providing incentives that will encourage financial investment in the sector to bridge the housing need in the country.

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