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ASSESSMENT OF MAINTENANCE CULTURE OF MASS HOUSING SCHEMES IN ILORIN METROPOLIS, NIGERIA

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Abstract

Most houses in cities are in deteriorating condition. Globally, over a billion people are living in inadequate, overcrowded, unmaintained and poor quality houses. This study, therefore, assessed the maintenance culture of mass housing schemes in Ilorin metropolis, Kwara state, Nigeria, to improve the living condition of houses.

The research is quantitative and both primary and secondary data were collected from sixteen (16) mass housing schemes delivered by both public, private as well as public-private-partnership in the metropolis. Multistage sampling technique was used and a structured questionnaire was administered to 1125 household heads which constitute 27% of the sample frame. The maintenance level of housing elements, spaces and infrastructure of the estates were collated using Likert scale ratings. Mean Weighted Values (MWV) were computed upon which comparisons were based. The study found that with an average MWV of 3.84, burglary proof had the highest level of maintenance (MWV =4.17) for housing elements, while there were deficiencies in the level of maintenance of plumbing (3.06), ceiling (3.64), painting (3.65), roof (3.65), water pipe (3.69), wall (3.78) and floor (3.82) indicating that there is an urgent need for improvement. In terms of housing spaces, with an average MWV of 3.82, laundry (3.46), toilet (3.67), store (3.68), bathroom (3.79) and kitchen verandah (3.76) all need adequate maintenance.

Further, results show that with an average MWV of 3.44, there were deficiencies in the maintenance of infrastructures such as drainage (2.66), waste disposal (2.67), road (2.73), open space (3.02) and water supply (3.22). The study, therefore, recommends among others, that there is a need for urgent attention to be paid to the maintenance of the estates in the metropolis to forestall collapse. Also mass housing schemes maintenance policy should be included in the National Housing policy to ensure the life span of mass housing is prolonged.

Keywords: Maintenance culture, mass housing, schemes, housing elements,

INTRODUCTION

The United Nations (UN) Habitat Global Housing Strategy framework identifies housing maintenance as one of the thematic areas that require special attention and improvement. Maintenance involves every element of the house from foundation, walling, roofing, fixtures and fittings among others. It involves both internal and external of the houses. All elements of houses deteriorate at different rate depending on materials and methods of construction, duration of usage, environmental conditions and the use of the house (Olagunju, 2015).

According to Olanrewaju (2010), maintenance is the required process and service taken to preserve, repair, protect and care for a house's fabric after completion to current standards to enable it to serve the intended functions throughout its entire life span without drastically affecting the basic features and use. Globally, over a billion people are living in inadequate and poor housing conditions in the urban areas and not less than 100 million people are homeless (Oladimeji *et.al* 2021), thereby having effects on the facilities available and the quality of the environment. In the developing countries alone, 600 million urban dwellers are living in

overcrowded, unmaintained and poor-quality houses (Kothari, 2001) which has led to increasing urban poverty.

In Nigeria, various housing development programmes and shelter delivery systems embarked upon by successive governments and the private sectors have resulted in mass housing schemes. These are repetitive housing solutions that have emerged as a complement of urban regeneration to cover the acute shortage of housing in the cities. This is because the National Housing Policy of 1991 charged various tiers of government with the responsibilities of facilitating the provision of low-cost housing for the low-income group in society.

However, with the increase in the growth of many cities in the past few decades in Nigeria, the aesthetic values of most mass housing schemes have changed from the original design due to redesign, deterioration or non-maintenance. Brennan (2000) posited that to prolong the economic life of a property, it is necessary to have a programme of action that would be effectively implemented to keep the property in top form to enable optimum returns to be received continuously which is maintenance.

According to Amuda and Adewoye (2020), several factors cause the inadequacy of housing in the country among which is a high rate of unmaintained houses due to lack of maintenance culture. Houses are ageing, and in many cases, there is a need to repair to prolong the life span. In Nigeria, great emphasis is placed on the gap between housing demand and supply, but little attention to the maintenance of the existing housing stock (Obeng-Odoom and Amedzro, 2011). Therefore, there is a dearth of information on the maintenance culture of mass housing schemes in Nigeria. Both government and private sectors are increasingly shifting their attention away from new housing development to modernization and maintenance of existing housing stock. Thus, there is a need to assess the maintenance culture of mass housing schemes in Nigeria and account for the living condition of the houses. Hence, this study assessed the maintenance level of mass housing schemes in Ilorin, metropolis, Kwara state, Nigeria to achieve adequate and habitable housing in conformity with United Nations (UN-Habitat) standard.

Conceptualization and Review of the Literature

Mass housing is the provision of a large number of housing units for a selected group of people or in some cases, the general public (Oxley, 2000) Mass housing projects are those in which residential units are built utilizing mass manufacturing technologies. (Abbaszadeh, 2016). Mass housing is a construction strategy that focuses on three areas of quality, time, and cost and has a high economic, technical, and managerial feasibility. Mass housing is a dense, repeating housing solution that has evolved as a supplement to urban redevelopment programs to address the acute housing scarcity, particularly in large cities. A mass-produced house is built in the same location, town, or city. Mass housing schemes in the Ilorin metropolis, historically started in 1975 with the state government intervention in housing supply, to meet up with the challenges of the growing population of the city. A total number of 257 units (Kulende housing estate) were completed and allocated to the residents and this marked the beginning of mass housing schemes in the state. The year 2008 ushered in the joint partnership between the private investors and the state government. The three major popular mass housing delivery strategies in the Ilorin metropolis are private, public (state and federal government), and private-public-partnership (PPP). All these three delivery strategies spread across the three local government areas of the Ilorin metropolis as shown in Table 1.

Table 1. Mass housing schemes in Ilorin metropolis between 1975 and 2016

S/N	Year	Owner	Name of Estate	Location	No of Unit	Remarks	LGA
1	1975	State Govt.	Kulende Estate	Kulende, Ilorin	257	Completed	Ilorin East
2	1978	State Govt.	Adewole Phase 1	Adewole, Ilorin	582	Completed	Ilorin West
3	1979	State Govt.	Agba Dam Estate	Agba Dam, Ilorin	20	Completed	Ilorin South
4	1981	Federal Govt.	Low-Cost Estate	Oloje, Ilorin	25	Completed	Ilorin West
5	1992	State Govt.	Adewole Phase II	Adewole, Ilorin	32	Completed	Ilorin West
6	2002	State Govt.	Irewolede Housing Estate	Yidi Road Ilorin	250	Completed	Ilorin West
7	2004	State Govt.	Mandate I Estate	Haji Camp Road, Ilorin	150	Completed	Ilorin West
8	2005	State Govt.	Mandate II Estate	Haji Camp Road, Ilorin	200	Completed	Ilorin West
9	2006	State Govt.	Mandate III Estate	Yidi Road Ilorin	250	Completed	Ilorin West
10	2008	PPP	Royal Valley Estate	Kulende Area, Ilorin	250	Completed	Ilorin East
11	2009	PPP	Harmony Estate	Kulende Area, Ilorin	150	On-going	Ilorin East
12	2009	Private	Ismail & Associate Estate	Ogundele Area, Ilorin	500	Under Construction	Ilorin West
13	2010	PPP	Greenaco	Airport Road, Ilorin	275	On-going	Ilorin West
14	2010	PPP	Mandate Luxury Estate	Akerebiate, Ilorin	93	On-going	Ilorin East
15	2010	Private	Dansaki Estate	Unilorin Road, Ilorin	250	Under Construction	Ilorin South
16	2011	Private	Evergreen Estate	Taoheed Road, New GRA	179	Under Construction	Ilorin South
17	2012	State Govt.	Judges Quarters	Taoheed Road, New GRA	16	Under Construction	Ilorin South
18	2012	Private	Forte Marina Estate	Asa Dam Road	144	Under Construction	Ilorin West
19	2012	Private	Sky View Estate	Airport Road, Ilorin	44	Under Construction	Ilorin West
20	2012	Private	Kam Abioye Estate	Eyenkorin/Balla Road	250	Under Construction	Ilorin West
21	2013	Private	Las Vegas Estate	Asa Dam Road	124	Under Construction	Ilorin West
22	2013	Private	Comics Garden City	Sobi Road, Ilorin	200	Under Construction	Ilorin East
23	2015	State Govt.	Legislative Quarters	Taoheed Road, New GRA	40	Completed	Ilorin South
24	2016	State Govt.	Maigida Estate	Taoheed Road, New GRA	499	Completed	Ilorin South

Source: Authors' field survey (2021)

Note: Govt=Government, PPP=Public-private partnership, LGA=Local Government Area

Study Area

Ilorin is the capital of Kwara State in the middle belt of Nigeria. It is located on longitude 4° 27' 38.05" E, 4° 39' 15.11" E, and latitude 8° 23' 05.57"N, 8° 34' 09.39"N. It has a population of 908,490 as of 2011 making it the 13th largest city in Nigeria with a land area of 765 km sq.

and density of 1,188/km square (Odunjo, Oladimeji and Okanlawon, 2015). It lies in the savannah climatic region and has three local governments which are Ilorin East, Ilorin West and Ilorin South. The three major popular mass housing delivery strategies in Ilorin metropolis are private, Public (state and federal government), and private-public-partnership (PPP). All these three delivery strategies spread across the three local government areas of Ilorin metropolis as shown in Figure below.

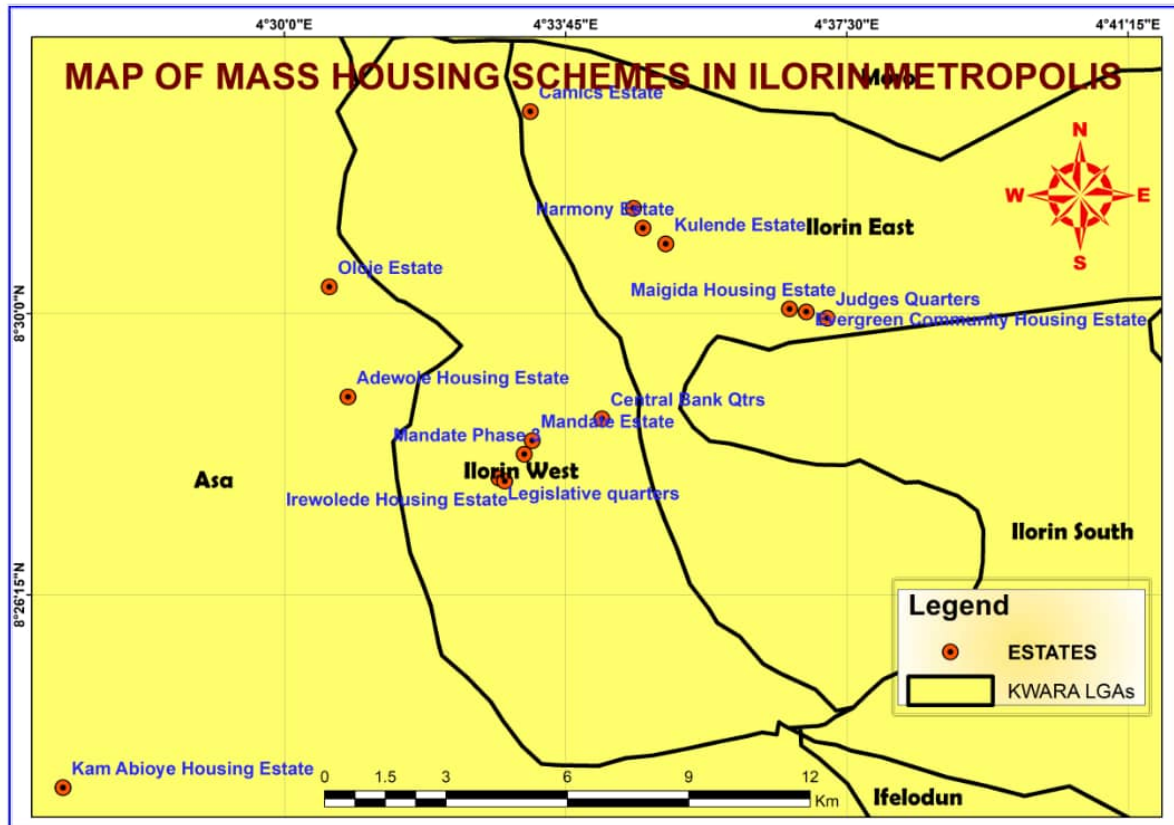


Figure : Map of Mass Housing Schemes in Ilorin metropolis

Source: GIS Laboratory, Urban and Regional Planning Department, LAUTECH, (2021)

METHODOLOGY

Both primary and secondary data were utilised for the study. Primary data such as maintenance level of housing elements, spaces infrastructure were collected from household heads of sampled houses, while secondary data were sourced from, journals, the internet, Kwara state housing corporation. The population consists of all the mass housing schemes or estates in the Ilorin metropolis, while the unit of analysis is the house. The city of Ilorin was chosen because it is the capital of Kwara State, where the state government has prioritized its mass housing program.

The sample frame consisted of dwellings that had been finished (and occupied) by each of the housing stakeholders comprised of the Federal Government of Nigeria, the State of Kwara, organized private sector developers, and those participating in the public-private partnership program are among them. The total number of houses sold in the survey was 4,166, which served as the sample frame. A multistage sampling technique was used for the study. The first

stage was the stratification of the metropolis into local government areas: these are Ilorin West, Ilorin South and Ilorin East. The second stage, however, involved the identification of mass housing schemes in each of the local government areas. According to Kwara State Housing Corporation and reconnaissance survey was carried out. The federal government has two estates; are the Low-cost estate and Ministerial housing estate. Kwara state government has eleven, PPP has four, while the Private sector has a total of eight estates. Information was collected on the details of the mass housing projects from the PPP and the private sector. In the third stage, the sample size was selected. Twenty-seven per cent (27%) of the houses were sampled from the sample frame to have a good representation of each housing delivery technique, resulting in a total of 1,125 samples for consideration. Thus, the number of samples taken from each of the delivery types is as shown in Table 2 below.

Table 2: Samples from each Housing Delivery Strategy

Developer/Owner	Total No of Units Sold	Total No of Samples (27%)
Federal Government	1,022	276
State Government	2,294	619
Public-Private Partnership	750	203
Organized Private	100	27
Total	4,166	1125

Source: Author's field survey (2021)

Also, to ensure that the samples selected are representative of the population from which they are drawn. The equal probability selection method (ESPEM) was used to apply a 27 per cent sample from each of the housing delivery strategies to the various house types in each estate, and a sample was then drawn at random from papers scripted with the number of houses contained in hats for each house type and housing delivery strategy. After that, others were chosen in a systematic order, one after the other. As a result, the samples from each house type were 271, 923, 454, 146, and 4 houses, respectively, in the 1,2,3,4,5 bedroom types of houses (Table 3) 146 and 4 houses in the 1,2,3,4,5-bedroom types of houses respectively (Table 6).

Table 3: House Type to be sampled from each Housing delivery strategy

No of Bedroom	State Govt.		PPP		Private Developer		Federal Govt.		Total	
	100%	27%	100%	27%	100%	27%	100%	27%	100%	27%
1	182	49					375	101	557	150
2	941	254	472	127	74	20	580	157	2067	558
3	909	245	221	60	17	4	67	18	1214	327
4	257	69	55	15	8	2			320	86
5	5	2	2	1	1	1			8	4
TOTAL	2294	619	750	203	100	27	1022	276	4166	1125

Source: Authors' Compilation (2021)

Likert scale was used to weigh the degree of maintenance level of housing elements, spaces and infrastructure. This is done by attaching values of weight to different degrees of responses as shown: Very good (5), Good (4), Fair (3), Poor (2) and very poor (1).

The SWV (Summation Weight Value) was obtained by summing up the product of the total numbers of responses to each variable and the weight attached to each rating i.e. $(a \times 5) + (b \times 4) + (c \times 3) + (d \times 2) + (e \times 1)$. The mean used in the course of computation was also obtained by summing up the SWV and dividing it by the total number of variables.

4.0 RESULTS AND DISCUSSION

4.1 Housing elements maintenance

Maintenance levels of housing elements in the area was collected using indicators such as foundation, wall, roof, floor, painting/tile, ceiling, water pipes, electrical installation, plumbing, door, window, net, burglary proof as well as socket and fittings. The mean weight value of 3.84 is recorded for housing elements and it is observed that burglary proof has the highest Mean Weighted Value (MWV) of 4.17. (Table 4) This implies that burglary proof is what residents considered the most housing facility in good condition in the estates implying that it is well maintained. Other facilities also in good condition are the foundation (4.12), Window (4.10), Door (4.09), Socket and fittings (4.03), Net (4.00) and Electrical installation (3.96). Those in need of repair are Floor (3.82), Wall (3.78), Water pipes (3.69), Painting/tile (3.65), Ceiling (3.64), and Plumbing (3.06), indicating decreasing level of condition of housing facilities and level of maintenance in the housing estates. This is supported by direct observation carried out during the study as shown in Plate 1.



Plate 1: Wall and Roof Conditions of Harmony estates Ilorin
Source: Authors' field survey, (2021)

Table 4: Ratings of Maintenance Level of Housing Elements

S/N	Element	Ranking					NR (f)	SWV	MWV	Rank
		5	4	3	2	1				
1	Foundation	2240	1036	927	12	0	1022	4215	4.12	2nd
2	Wall	1365	1256	1137	114	0	1023	3872	3.78	9th
3	Roof	1280	1236	852	334	0	1015	3702	3.65	11th
4	Floor	1120	1764	909	68	0	1011	3861	3.82	8th
5	Painting/Tile	1070	1568	720	320	4	1010	3682	3.65	11th
6	Ceiling	945	1532	927	222	6	998	3632	3.64	12th
7	Water Pipes	1015	1576	999	94	29	1006	3713	3.69	10th
8	Electrical Installation	1440	2024	414	156	10	1020	4044	3.96	7th
9	Plumbing	1055	1584	909	140	39	1019	3121	3.06	13th
10	Door	1240	2508	345	28	2	1006	4123	4.09	4th
11	Window	1200	2628	282	42	0	1012	4152	4.10	3rd
12	Net	1130	2516	333	94	4	1017	4077	4.00	6th
13	Burglary Proof	1550	2156	402	34	4	1004	4182	4.17	1st
14	Socket & Fittings	1635	1800	597	88	0	1020	4120	4.03	5th

Mean of $\sum \frac{MWV}{n} = 3.84$

Source: Authors' Fieldwork, (2021)

Housing spaces

Residents' opinions on the state of housing space maintenance in Ilorin metropolis housing estates were sought. The Living Room is found to have the highest mean weighted value of 4.16. This means that in the housing estates of Ilorin metropolis, residents regard the living room to be the most well-kept and well-maintained dwelling space. This could be because it is the building's most public and accessible place. As a result, the living room is kept in good

condition to attract visitors. Bedroom (4.05), exit door (4.02), and balcony (3.86) are all well-maintained places, but bathroom (3.76), kitchen veranda (3.75), kitchen (3.74), store (3.68), toilet (3.67), and laundry (3.46) need repair as shown in Table 5.

Moreover, the overall mean value of responses of the level of condition of housing spaces in the housing estates of Ilorin metropolis as obtained from the respondents is 3.82. This shows that the mean responses of the respondents were far more above average indicating that the level of condition of housing spaces in the housing estates of the Ilorin metropolis was fairly good in the study area. Thus, efforts must be geared toward ensuring good conditions and maintenance of the housing spaces that require repair in the housing estates of the Ilorin metropolis.

Table 5: Rating of Maintenance of Housing Spaces

S/N	Space	Ranking					NR (f)	SWV	MWV	Rank
		5	4	3	2	1				
1	Living Room	1705	2088	453	26	0	1027	4272	4.16	1st
2	Bedroom	1440	2056	654	14	0	1027	4164	4.05	2nd
3	Bathroom	1070	1608	1086	98	0	1027	3862	3.76	5th
4	Toilet	890	1484	1116	112	4	981	3606	3.67	9th
5	Kitchen	1230	1316	1152	126	2	1024	3826	3.74	7th
6	Store	975	1476	1194	114	2	1021	3761	3.68	8th
7	Exit Door	1240	2368	438	66	5	1024	4117	4.02	3rd
8	Kitchen Verandah	970	1776	978	74	15	1016	3813	3.75	6th
9	Balcony	1095	1876	888	26	12	1009	3897	3.86	4th
10	Laundry	1025	1448	213	166	144	865	2996	3.46	10th

Mean of $\sum \text{MWV}/n = 3.82$

Source: Authors' Fieldwork, (2021)

Infrastructural maintenance

The overall mean value of responses of the level of condition of infrastructure in the housing estates of Ilorin metropolis as obtained from the respondents is 3.44. (Table 6) This shows that with MWV of 3.44 maintenance level of infrastructure, there are deficiencies in the maintenance of drainage (2.66), waste disposal (2.67), road (2.73), open space (3.02) and water supply (3.22). This corroborates the observation made during the fieldwork that roads and drainages in the area need repair (Plates 2 and 3). This is also in agreement with Akindele, Ojo and Abolade, (2014) in their study of perceived housing satisfaction in public estates of Osogbo, Nigeria that government at all levels should play a complementary role with private organizations to achieve the provision and maintenance of basic amenities. It is observed that religious place/worship centre has the highest Mean Weighted Value (MWV) of 4.24. This suggests that religious place is what residents considered the major infrastructure that is in good condition and well maintained in the housing estates of Ilorin metropolis. This is not unexpected because it is glaring that religious places are quite ubiquitous and people pay a high premium on beautifying them, in majority of our cities today.



Plate 2: Road and drainage condition in harmony housing estate
Source: Author's Field Survey, (2021)



Plate 3: Road and drainage condition in Royal valley housing estate
Source: Author's Field Survey, (2021)

Table 6: Ratings of Maintenance of Infrastructure

S/N	Element	Ranking					NR (f)	SWV	MWV	Rank
		5	4	3	2	1				
1	Electricity	990	1456	1113	122	36	1030	3717	3.61	7 th
2	Water	820	1320	657	408	113	1030	3318	3.22	13 th
3	Road	405	832	591	876	106	1030	2810	2.73	15 th
4	Drainage	460	860	417	682	239	1026	2658	2.66	17 th
5	Waste Disposal	410	808	1080	286	143	1022	2727	2.67	16 th
6	Open Space	515	1068	357	370	136	810	2446	3.02	14 th
7	Health Centre/Clinic	345	1664	768	42	8	770	2827	3.67	5 th
8	Shopping Facilities	500	1092	1191	32	15	801	2830	3.53	11 th
9	Security/Police Post	365	1880	1089	108	25	985	3467	3.52	12 th
10	Fire Service Station	460	1240	291	164	16	597	2171	3.64	6 th
11	Religion Place	1830	1968	279	18	8	968	4103	4.24	1 st
12	Community Hall	565	1096	489	124	8	620	2282	3.68	4 th
13	School	715	1976	834	26	12	940	3563	3.80	2 nd
14	Day Care Centre	610	1564	861	210	17	922	3262	3.54	10 th
15	Parking Facilities	495	2072	558	102	18	872	3245	3.72	3 rd
16	ATM	440	840	390	106	17	498	1793	3.60	8 th
17	Recreation Centre	470	1096	240	188	18	560	2012	3.59	9 th

Mean of $\sum MWV/n = 3.44$

Source: Author's Fieldwork, (2021)

CONCLUSION

This study shows the maintenance of mass housing estates in the Nigerian metropolis of Ilorin. Poor maintenance of housing components such as walls, roofs, floors, and painting/tile has been discovered. Housing spaces that require maintenance include Laundry, toilets, store, kitchen, kitchen verandah and bathroom while infrastructure is drainage, waste disposal, road, open space and water supply.

Thus, to improve the living condition of the housing units, there is the need to enlighten the residents on the danger involved in poor maintenance of spaces such as toilets, bathrooms and laundry to avoid the total collapse of the facilities. Also, there is a need for the residents to engage in the preventive maintenance of facilities such as the wall, roof, floor, painting/tile among others to prevent the houses from tending to a state of disrepair.

Mass housing schemes was part of the housing programmes that was put in place to reduce housing deficits, but maintenance of these housing schemes need to be giving adequate

attention. The government should work with private investors and people to maintain infrastructures as soon as possible, and all stakeholders in the built environment should guarantee that new mass housing schemes use sustainable building materials that are easy to maintain.

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