IMPACTS OF RESIDENTIAL ENVIRONMENTS ON HOUSING SATISFACTION IN SELECTED NEIGHBOURHOODS OF OGUN STATE, NIGERIA

Michael B.O. Adegbile[1], *Victor Onifade[2], Funmilayo Adedire[3]

[1]Department of Architecture, University of Lagos.
[2]Department of Urban and Regional Planning, University of Lagos.
[3]Department of Architecture, Lead City University, Ibadan.
*Corresponding Author: vonifade@unilag.edu.ng

ABSTRACT

This study identified the important aspects of living environments on housing satisfaction in the selected neighbourhoods of Ogun State, Nigeria. This research, therefore, investigated the impact of the social and physical environment on housing satisfaction. The research areas are residential areas of the selected Local Government headquarters of Ogun state, Nigeria, with 20 Local Government Areas (LGAs). A mixed research approach is adopted, and data were collected through a structured questionnaire. The analysis was done with descriptive and inferential statistical tools. The study reveals that all environmental variables used in predicting respondents housing satisfaction in the study area were significant with $P \leq 0.05$, it was revealed that the most important environmental variable explaining housing satisfaction in the study area is the perception of respondents' about the feeling of their neighbourhood (COP) explaining 37.3% of the variance in the dependent variable. The proximity to medical services was the second important variable contributing 17.2% variation in explaining respondents' housing satisfaction. The level of security (SEC), availability of facilities and amenities (FAC), proximity to secondary school (PSS), proximity to the workplace (PWP) and community association (CAA) contributed 8.9%, 4.3%, 3.8%, 2.6% and 1.3% of the variance, respectively, in explaining respondents housing satisfaction. The findings imply that the neighbourhood social environment and community services aspects of residential environments were positively related to housing satisfaction. The results validated the significance of community networks at the neighbourhood level. The study recommends that in housing construction and development, the social and physical environmental attributes must, therefore, be put into consideration while providing housing for the people, be it public or real estate investors.

Keywords: Impacts, Residential Environment, Housing Satisfaction, Neighbourhood

INTRODUCTION

Many studies on housing satisfaction have examined the impacts of the neighbourhood, housing, and demographic characteristics on housing satisfaction (Marans & Rodgers, 1975; Galster, 1987; Ha & Weber, 1991; Baillie & Peart, 1992). A few studies assessed residential satisfaction by considering special population groups, for example, single-parent families (Cook, Bruin, & Laux, 1994; Bruin & Cook, 1997) or family units in danger of serious housing problems (Crull, 1994). Different researches were carried out on residential locations, for example, urban Black elders in public housing (Moore & Husaini, 1991), elderly women in Florida (Baillie & Peart, 1992), settlers in rural communities (Combs & Vrbka, 1993), and older residents in subsidized housing (Johnson, Lovingood, & Goss, 1993). However, there has been a reliable understanding that specific variables influence housing satisfaction. There are also inconsistent findings on the extent of relationship or impact of some of these variables on housing satisfaction. For example, in an early study on housing satisfaction, analysts contended for the significance of the psychological, physical, and social parts of the housing environment. Binstock & Shanas (1985) and Lawton (1986) established that physical condition attributed factors were of a higher priority than the psychological and social environments. However, Tuken (1994); McAuley (1987) and Lawton & Nahemew (1979) contended that the social environment (one's system, safety, activities, privacy, and services) were progressively significant. Little research seems to have considered the connection between the perception of various residential social environments and housing satisfaction, particularly in Ogun State, Nigeria. Residential satisfaction has for some time been a

subject of the incredible interest in environmental psychology and built environment (Adriaanse,2007; Fernández-Portero et al., 2017). As depicted by Amérigo and Aragonés (1997), it tends to be portrayed as a disposition reflecting the satisfaction of inhabitants living in a particular place corresponding to their necessities, desires, and objectives. A considerable measure of research has examined the antecedents and outcomes of residential satisfaction (Fernández-Portero et al., 2017; Amerigo and Aragones,1997) as factors that influence residential satisfaction. Most of the research has concentrated on objective and subjective qualities of the residential environment just as on the individual attributes of occupants. Bonaiuto (2004); Bonaiuto, Fornara and Bonnes (2003) submitted that residential satisfaction has been explained to be a basic indicator of cognitive, affective, and behavioural characteristics of the inhabitants, including life satisfaction, neighbourhood connection, mental/human prosperity, and residential mobility.

Housing satisfaction reflects ''the degree to which occupants feel that their housing is helping them to achieve their goals/ objectives (Adesoji, 2012). Adesoji (2012) emphasized that the literature is packed with numerous factors that are emphatically related to housing satisfaction and the occupiers' assessment. A part of these is building features (for example number of rooms, location of kitchens, room size and nature of materials, and so forth) and neighbourhood amenities (like recreational facilities, schools, shops, hospitals, and so forth Salleh, 2008). In this regard, housing satisfaction can be defined as an assessment of the degree to which housing units, social environment, and services are meeting inhabitants' housing needs, expectations, and desires. It is likewise a proportion of the worth people or family units derive from consuming housing as a product and bundle of services. Onibokun (1974) and Jiboye (2008) posited that renter or home owner-occupied housing unit(s) that is good and sufficient from the design and physical perspective may not significantly be satisfactory from the occupants' assessment. But the study of Francescato et al. (2017) found out that there is a strong link between housing satisfaction and physical and social environment. The link between housing satisfaction and physical environment as explained by Francescato et al. (2017) has been defined along with the notion of fifteen aspects which include well-being/ security, density/crowding, site facilities, aesthetics/appearance, access to companions, site location/access to the community, maintenance, management policy, economic costs, personal freedom/privacy, sense of community, the perception of community, personality attributes, the perception of neighbours and socio-economic characteristics. The concept of housing satisfaction is therefore not only looked at from physical, engineering, and architectural components point of view but also, the components of the immediate environment, behavioural, cultural, and social demographics of the household (Onibokun, 1974). This study, therefore, examines the impact of the social and physical environment on housing satisfaction in Ogun State, Nigeria.

BACKGROUND OF THE STUDY AREA

Ogun State is situated in the south-west area of Nigeria. It lies roughly between longitudes 20 451 E and 40 451 E; and scopes 60 151N and 70 601 N. With the land region of around 16,762 square kilometres, speaking to around 1.8 percent of Nigeria's complete landmass of 924,000 square kilometres, Ogun State is positioned 24th biggest of the 36 States regarding landmass in Nigeria. It is limited toward the west by the Republic of Benin, toward the south by Lagos State and a 20 kilometre stretch of the Atlantic Ocean, toward the east by Ondo and the Osun States, and toward the north by Oyo State (see Figure 1). The state is connected to different states in Nigeria and the outside world through the international airport and ocean ports in Lagos State.

Fig. 1 Map of Ogun State in the National Context
Source: Ogun State Government, 2019
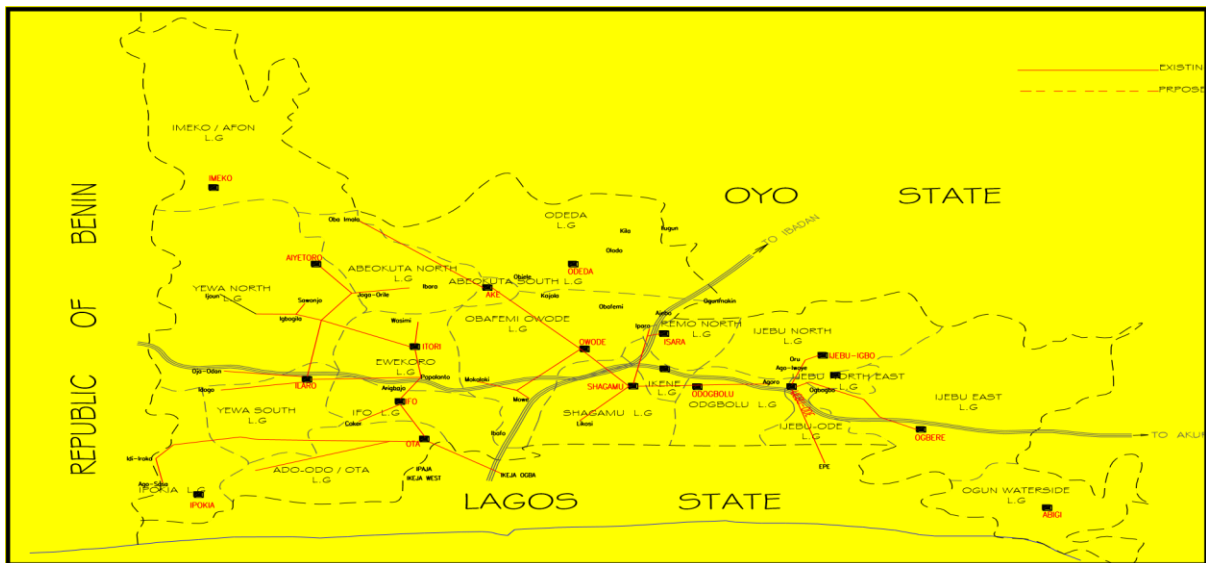
Fig. 2 The 20 Local Government Areas map of Ogun State
Source: Physical planning Unit, Ogun State.

Ogun State has a tropical example atmosphere with the raining season beginning in March and completion in November and it experiences dry season between November and March. Ogun state has a mean yearly precipitation changes from 128cm in the southern pieces of the State to 105cm in the northern zones while the normal month to month temperature goes between 23°C in July and 35°C in February. Ogun State is geographically described by high grounds toward the

north with slants downwards toward the south. Ogun state's most noteworthy district is in the north-west which ascends more than 300 meters above ocean level while the least level is in the southern part with a long chain of tidal ponds (Ogun State Regional Plan (OSRP), 2003). Ogun State has 20 Local Government Areas (LGAs) (see Figure 2). The 2006 National Population statistics figures demonstrate that Ogun State had a population figure of around 3,728,098. This comprised of 49.55 percent female and 50.45 percent male. This dissemination proposes a population thickness of around 222 people for every square kilometre; with Abeokuta (state capital) being the densest settlement of around 7,476 people for each square kilometre. The other genuinely thick neighbourhood governments are Ota, Ifo, Ijebu-Ode, Ikenne, and Sagamu with populace densities running somewhere in the range of 300 and 900 people for each km^2. With the current patterns in population development, specialists are of the assessment that by 2025 the number of residents in the state will be about 9.3 million (Ibem, 2011).

RESEARCH METHODS

The researcher had used an average household size of five (5) as established by National Bureau of Statistics final report, (2007) and the number of buildings in each of the selected communities. A total of five thousand two hundred and seventeen (5217) copies of questionnaire were derived but four thousand six hundred and ninety-one (4691) were retrieved for analysis. A systematic sampling technique was adopted for the respective residential areas. The sampling procedure entails the identification of the study area, identification of buildings, and conduct of interviews with the respondents. The study utilized descriptive and inferential analytical methods for data analysis. In recognition of the level of urbanization in Ogun state and all its regions and sub-regions, the research work cut across various selected residential densities of the low, medium, and high areas in all the headquarters of local government areas in the state. Thus, had become the choice of the study area. The analysis of respondents' relative satisfaction with housing was carried out using the values of the weighted attributes of housing satisfaction to determine the housing satisfaction index. Thus, the Housing Satisfaction Indexes (HSI) for each of the subsystems was determined across the different residential densities and the overall study area (Ogun State). The mid-point value of the index which is three (3) is adopted to determine the significant agreement or level of satisfaction (that is indifferent or neither satisfied nor dissatisfied), as the acceptable mean (Jiboye, 2008; Oladapo, 2006; Fatoye and Olatubara, 2006). As pointed out by Jiboye (2008) and Oladapo (2006), any result that is significantly different from these mean values was assumed to be either positive or negative.

In arriving at the housing satisfaction index for each subsystem, the Total Weight Value (TWV) for each attribute within the housing satisfaction subsystem was calculated. This was obtained through the summation of the product of the number of responses for each rating to an attribute and the respective weight value. Mathematically, this is expressed as:

$$TWV = \sum_{i=1}^{5} XiYi$$

Where; X_i = Number of respondents rating an attribute i:
Y_i = Weight assigned to attribute i.
i = Value of the rating i.e. 1,2,3,4 and 5

After the calculation of the TWV, the Housing Satisfaction Index (**HSI**) for each of the housing satisfaction attribute was obtained by dividing the TWV by the total number of responses for each housing satisfaction attributes. This is expressed as:

$$HIS = \frac{TWV}{\sum_{i=1}^{5} Pi}$$

The mean Housing Satisfaction Index $\overline{HSI}$ for each residential environment subsystem was then obtained by summing up the HSI of the attribute and dividing by the total number of attributes in the subsystem. Thus, the mean index for physical and social environmental subsystems was denoted **HSI** ENVIRONMENT. Similarly, the mean Housing satisfaction Index for the overall study area was denoted **HSI**S.A. Mathematically, the mean Housing Satisfaction Index is expressed as:

$$\overline{HSI} = \frac{\sum HSI}{N}$$

Respondents Level of Satisfaction with The Social and Physical Environment

Presented in Table 1 is the level of satisfaction derived from the Social and Physical environmental attributes in the study area. It was established from the findings of the result that 62.1% of respondents in the study area were satisfied with the level of security while about 45.0% were dissatisfied with the security conditions in the neighbourhood. While examining the level of satisfaction within the residential densities, respondents who were satisfied with the level of security was seen to increase from the low density towards the high-density area. This represents 61.6%, 74.3%, and 74.4% of respondents in the low, medium, and high-density areas. Conversely, respondents who were dissatisfied decrease in proportion from high to the low-density areas. Further analysis shows the respondents' satisfaction with the friendly nature of the study area. It was revealed from Table 1.0 that 66.9% of respondents were satisfied with the friendliness level while about17.3% were dissatisfied and 15.1% were indifferent. In disaggregated form, about 62 % of the respondents in the low-density areas were satisfied with the neighbourhood friendliness level, 67.7% in medium density, and 67.8% in high density. It shows the neighbourhood is friendly to the residents.

Respondent's satisfaction with access to neighbourhood facilities and amenities (social environment) revealed that 19.4% of respondents in the study area were not satisfied while 14.9% of respondents were neither satisfied nor dissatisfied with the facilities and amenities. However, more than half (65.6%) of residents in the study were satisfied with the neighbourhood facilities. The proportion of respondents who were satisfied with the different facilities was observed to be high in the medium density areas (66.4%) compared to 65.9% and 62.3% in the high and low-density areas respectively. The study also showed that a high proportion of respondents in the study area were satisfied with the proximity to access educational facilities such as primary (72.2%), nursery (69.5%), and secondary school (69.4%). Across the residential densities, it was discovered that respondents in the high-density areas were more satisfied with the proximity to educational facilities compared to the medium and low densities.

As shown in Table 6.2, 77.6%, 80.7%, and 78.6% of the respondents in the high-density areas were satisfied with the proximity to the nursery, primary and secondary school respectively. This was higher compared to the proportion of respondents satisfied in both medium and low-density areas. Similarly, more than half of respondents in the study area were satisfied with proximity to their place of work (60.0%), medical services (62.4%), city center (60.0%), recreational services (53.7%), and police services (54.9%). This proportion of satisfied respondents was also found to increase from the low to the high-density areas.

Further findings showed that less than half (48.2%) of respondents in the study area were satisfied with the level of population density within their housing unit. It was also observed that more than 50.0% of respondents were either indifferent or dissatisfied with the population density

in the study. Within the residential densities, it was established from the result findings that occupants in the low-density areas were more (49.2%) satisfied with the level of density within the neighbourhood than 48.8% and 44.6% in the medium and high-density areas respectively.

As regards the friendliness rate, it was established from Table 6.2 that 67.7% and 67.8% of respondents in the medium and high-density areas respectively were satisfied while 62.6% were dissatisfied with the level at which neighbourhood friendliness level. In the overall study area, 66.9% of respondents were satisfied while 33.1% of respondents were indifferent and dissatisfied with the level of friendliness. Table 1.0 revealed that 65% of the respondents in low-density areas were satisfied with the safety condition of the neighbourhood, while 75% and 81% were satisfied in medium and high-density areas respectively. It shows that the respondents were satisfied with the safety condition of their locations (74%).

It was also established in Table 1 that 72.3% of respondents in the medium density areas were satisfied with the level of neighbourhood association while 68.2% and 67.6% were satisfied in the high and low-density areas respectively. Similarly, most respondents in the medium density areas were also satisfied with the level of neighbourhood relations, social participation, and interaction compared to the low and high-density areas. As indicated, about 76.0% of respondents in the medium density were satisfied with the neighbourhood relations within the neighbourhood while 70.4% were satisfied with the level of social participation and interaction. The way respondents felt about the place they live was observed to increase from the low-density areas to the high-density areas. As shown in Table 1.0, 66.3%, 72.2% and 76.5% of respondents in the low, medium, and high-density areas, respectively, felt satisfied with the building and neighbourhood as a place to live in. On the perception of the respondents as regards the Neighborhood aesthetics, 56%, 51.6%, and 61% of the respondents were satisfied in low, medium, and high densities respectively. About 53% of the total respondents were satisfied with the aesthetics of the study area.

Table 1 Level of satisfaction with the Social and Physical Environment
Source: Author's Field Work, 2019.

	Residential densities							
	Low		Medium		High		Total	
Security	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)
Very satisfactory	65	8.4	192	6.0	59	8.3	316	6.7
Satisfactory	412	53.2	2189	68.3	469	66.1	3070	65.4
Indifferent	133	17.2	378	11.8	126	17.7	637	13.6
Unsatisfactory	140	18.1	338	10.5	36	5.1	514	11.0
Very unsatisfactory	25	3.2	109	3.4	20	2.8	154	3.3
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Friendliness								
Very satisfactory	32	4.1	170	5.3	29	4.1	231	4.9
Satisfactory	453	58.5	2002	62.4	452	63.7	2907	62.0
Indifferent	155	20.0	430	13.4	122	17.2	707	15.1
Unsatisfactory	101	13.0	418	13.0	79	11.1	598	12.7
Very unsatisfactory	34	4.4	186	5.8	28	3.9	248	5.3
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Safety								
Very satisfactory	50	6.5	166	5.2	49	6.9	265	5.6
Satisfactory	456	58.8	2256	70.4	530	74.6	3242	69.1
Indifferent	152	19.6	351	10.9	63	8.9	566	12.1
Unsatisfactory	57	7.4	318	9.9	39	5.5	414	8.8
Very unsatisfactory	60	7.7	115	3.6	29	4.1	204	4.3
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**

	Residential densities							
	Low		Medium		High		Total	
Facilities/amenities	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)
Very satisfactory	45	5.8	145	4.5	49	6.9	239	5.1
Satisfactory	438	56.5	1983	61.9	419	59.0	2840	60.5
Indifferent	122	15.7	480	15.0	99	13.9	701	14.9
Unsatisfactory	130	16.8	435	13.6	105	14.8	670	14.3
Very unsatisfactory	40	5.2	163	5.1	38	5.4	241	5.1
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Density								
Very satisfactory	114	14.7	146	4.6	69	9.7	329	7.0
Satisfactory	267	34.5	1417	44.2	248	34.9	1932	41.2
Indifferent	199	25.7	814	25.4	251	35.4	1264	26.9
Unsatisfactory	128	16.3	538	16.8	114	16.1	778	16.6
Very unsatisfactory	69	8.9	291	9.1	28	4.0	388	8.3
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Proximity to medical service								
Very satisfactory	70	9.0	129	4.0	52	7.3	251	5.4
Satisfactory	331	42.7	1930	60.2	413	58.2	2674	57.0
Indifferent	142	18.3	420	13.1	125	17.6	687	14.6
Unsatisfactory	184	23.7	543	16.9	75	10.6	802	17.1
Very unsatisfactory	48	6.2	184	5.7	45	6.3	277	5.9
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Aesthetics								
Very satisfactory	38	4.9	127	4.0	13	1.8	178	3.8
Satisfactory	396	51.1	1525	47.6	421	59.3	2342	49.9
Indifferent	130	16.8	574	17.9	166	23.4	870	18.5
Unsatisfactory	160	20.6	809	25.2	75	10.6	1044	22.3
Very unsatisfactory	51	6.6	171	5.3	35	4.9	257	5.5
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Proximity to nursery school								
Very satisfactory	66	8.5	159	5.0	20	2.8	245	5.2
Satisfactory	407	52.5	2080	64.9	531	74.8	3018	64.3
Indifferent	118	15.2	517	16.1	89	12.5	724	15.4
Unsatisfactory	162	20.9	350	10.9	50	7.0	562	12.0
Very unsatisfactory	22	2.8	100	3.1	20	2.8	142	3.0
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Proximity to primary school								
Very satisfactory	47	6.1	209	6.5	47	6.6	303	6.5
Satisfactory	452	58.3	2104	65.6	526	74.1	3082	65.7
Indifferent	137	17.7	465	14.5	89	12.5	691	14.7
Unsatisfactory	134	17.3	370	11.5	33	4.6	537	11.4
Very unsatisfactory	5	0.6	58	1.8	15	2.1	78	1.7
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**

	Residential densities							
	Low		Medium		High		Total	
Proximity to secondary school	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)
Very satisfactory	83	10.7	174	5.4	21	3.0	278	5.9
Satisfactory	346	44.6	2098	65.4	537	75.6	2981	63.5
Indifferent	174	22.5	436	13.6	100	14.1	710	15.1
Unsatisfactory	157	20.3	422	13.2	32	4.5	611	13.0
Very unsatisfactory	15	1.9	76	2.4	20	2.8	111	2.4
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Proximity to working place								
Very satisfactory	83	10.7	163	5.1	39	5.5	285	6.1
Satisfactory	366	47.2	2021	63.0	499	70.3	2886	61.5
Indifferent	69	8.9	417	13.0	126	17.7	612	13.0
Unsatisfactory	222	28.6	481	15.0	20	2.8	723	15.4
Very unsatisfactory	35	4.5	124	3.9	26	3.7	185	3.9
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Distance to the city centre								
Very satisfactory	22	2.8	164	5.1	41	5.8	227	4.8
Satisfactory	387	49.9	1707	53.2	497	70.0	2591	55.2
Indifferent	146	18.8	483	15.1	74	10.4	703	15.0
Unsatisfactory	195	25.2	742	23.1	73	10.3	1010	21.5
Very unsatisfactory	25	3.2	110	3.4	25	3.5	160	3.4
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Community engagement								
Very satisfactory	54	7.0	94	2.9	45	6.3	193	4.1
Satisfactory	396	51.1	2163	67.5	429	60.4	2988	63.7
Indifferent	160	20.6	537	16.7	147	20.7	844	18.0
Unsatisfactory	151	19.5	378	11.8	66	9.3	595	12.7
Very unsatisfactory	14	1.8	34	1.1	23	3.2	71	1.5
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Neighbourhood relations/Community association								
Very satisfactory	38	4.9	199	6.2	49	6.9	286	6.1
Satisfactory	423	54.6	2228	69.5	471	66.3	3122	66.6
Indifferent	178	23.0	460	14.3	101	14.2	739	15.8
Unsatisfactory	134	17.3	285	8.9	74	10.4	493	10.5
Very unsatisfactory	2	0.3	34	1.1	15	2.1	51	1.1
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**
Neighbourhood association/Community engagement								
Very satisfactory	25	3.2	95	3.0	43	6.1	163	3.5
Satisfactory	499	64.4	2222	69.3	441	62.1	3162	67.4
Indifferent	117	15.1	458	14.3	132	18.6	707	15.1
Unsatisfactory	95	12.3	368	11.5	77	10.8	540	11.5
Very unsatisfactory	39	5.0	63	2.0	17	2.4	119	2.5
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**

| Community perception | Residential densities | | | | | | | |
| | Low | | Medium | | High | | Total | |
	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)
Very satisfactory	83	10.7	140	4.4	52	7.3	275	5.9
Satisfactory	431	55.6	2175	67.8	491	69.2	3097	66.0
Indifferent	120	15.5	490	15.3	91	12.8	701	14.9
Unsatisfactory	107	13.8	308	9.6	57	8.0	472	10.1
Very unsatisfactory	34	4.4	93	2.9	19	2.7	146	3.1
Total	**775**	**100.0**	**3206**	**100.0**	**710**	**100.0**	**4691**	**100.0**

Table 2 Respondents' perception of the Physical and Social Environment in Selected Neighbourhoods in Ogun State

| Social and Physical Environment Variables | Residential densities | | | | | | Study Area | |
| | Low | | Medium | | High | | | |
	TWV	HSI	TWV	HSI	TWV	HSI	TWV	HSI
Privacy	2910	3.75	11927	3.72	2702	3.81	17539	3.74
Security	2677	3.45	11635	3.63	2641	3.72	16953	3.61
Friendliness	2673	3.45	11170	3.48	2505	3.53	16348	3.48
Safety	2704	3.49	11658	3.64	2661	3.75	17023	3.63
Facilities/amenities	2643	3.41	11130	3.47	2466	3.47	16239	3.46
Density	2560	3.29	10207	3.18	2346	3.30	15109	3.22
Proximity to police service	2473	3.19	10582	3.30	2391	3.37	15446	3.29
Proximity to medical service	2516	3.25	10895	3.40	2482	3.50	15893	3.39
Aesthetics	2535	3.27	10246	3.20	2432	3.43	15213	3.24
Proximity to nursery school	2658	3.43	11466	3.58	2611	3.68	16735	3.57
Proximity to primary school	2727	3.52	11654	3.64	2687	3.78	17068	3.64
Proximity to secondary school	2650	3.42	11490	3.58	2637	3.71	16777	3.58
Proximity to workplace	2565	3.31	11236	3.50	2635	3.71	16436	3.50
Distance to the city center	2511	3.24	10691	3.33	2586	3.64	15788	3.37
Social participation and interaction	2650	3.42	11523	3.59	2537	3.57	16710	3.56
Community association	2686	3.47	11891	3.71	2595	3.65	17172	3.66
Community engagement	2701	3.49	11536	3.60	2546	3.59	16783	3.58
Community perception	2747	3.54	11579	3.61	2630	3.70	16956	3.61
TOTAL	**47586**	**61.39**	**202516**	**63.16**	**46090**	**64.91**	**296188**	**63.13**
$\overline{HSI}_{\text{ENVIRONMENT}}$	$\overline{HSI}_{\text{low}} = 3.41$		$\overline{HSI}_{\text{medium}} = 3.51$		$\overline{HSI}_{\text{high}} = 3.61$		$\overline{HSI}_{\text{S.A.}} = 3.51$	

Respondents' Relative Satisfaction with Physical and Social Environment in the Study area

The results in Table 2 on the satisfaction level of the respondents with their residential environment suggest that the occupants of the various buildings in the study area were neither satisfied nor

dissatisfied with the social and physical environment (neighborhood) as the mean Housing Satisfaction Index for environment attributes ($\overline{HSI}$ S.A.) was 3.51. Further findings showed that respondents derived more satisfaction higher than the mean environmental index of 3.51 from attributes such as community association (3.66), community engagement (3.66), safety (3.63) and friendliness (3.63), respondents' community perception (3.61), security (3.61), proximity to primary school (3.64), secondary school (3.58) and nursery school (3.57). These attributes were observed to be skewed towards being indifferent and satisfied.

Comparing these values among the residential zones, the figures revealed that the mean environmental housing satisfaction index ($\overline{HSI}$ENVIRONMENT) for medium (3.51) and high (3.61) density areas were higher compared to the low density (3.41) and very low in comparison with the overall study area except higher in high density. This result implies that occupants' housing satisfaction as regards the physical and social environment was slightly above average in the order of ranking across the three residential densities.

The Impact of Social and Physical Environment on Housing Satisfaction

The influence of the environmental and neighbourhood variables on the housing satisfaction was examined using stepwise regression analysis. In doing this, eighteen social and physical environment- related variables were used in predicting respondents' housing satisfaction in the study area. The overall performance of the stepwise multiple regression analysis as depicted in Table 3 showed that environmental variables explained 78.9% of the variance of housing satisfaction in the study area as multiple coefficients of determination (R^2) value for all the independent variables was 0.789. The multiple coefficients (R) also showed a positive strong relationship of 0.888. The stepwise regression model of the social and physical environmental factors predicting housing satisfaction in the study area is given as follows:

$$HS = \beta_o + \beta_1 COP + \beta_2 PMS + \beta_3 SEC + \beta_4 FAC + \beta_5 PSS + \beta_6 PWP + \beta_7 CAA + \beta_8 AES + \beta_9 DES + \beta_{10} DCC + \beta_{11} NEF + \beta_{12} PNS + \beta_{13} CEE + \beta_{14} PPS + \beta_{15} SCF + \beta_{16} SPI + \beta_{17} PPS$$

Findings from the study showed that all environmental variables used in predicting respondents' housing satisfaction in the study area were significant with P≤0.05. As shown in Table 3, it was revealed that the most important environmental variable explaining housing satisfaction in the study area is the perception of respondents about the feeling of their neighbourhood (COP) explaining 37.3% of the variance in the dependent variable. The proximity to medical services was the second important variable contributing 17.2% variation in explaining respondents' housing satisfaction. The level of security (SEC), availability of facilities and amenities (FAC), proximity to secondary school (PSS), proximity to the workplace (PWP) and community association (CAA) contributed 8.9%, 4.3%, 3.8%, 2.6% and 1.3% of the variance respectively in explaining respondents housing satisfaction. Other environmental variables as shown in Table 3 explained less than 1% variation of housing satisfaction in the study area. Besides, the correlation between housing satisfaction and environment variables showed a positive and strong relationship.

Table 3 Stepwise Multiple Regression Analysis of Social and Physical Environmental Attributes in Ogun State

Variables	R	R^2	R^2 change	β	Beta	Sig.
COP	0.610 [a]	0.373	0.373	4.137	0.124	0.000
PMS	0.738 [b]	0.545	0.172	5.337	0.173	0.000
SEC	0.796 [c]	0.634	0.089	2.747	0.082	0.000
FAC	0.822 [d]	0.676	0.043	5.442	0.173	0.000
PSS	0.845 [e]	0.714	0.038	3.541	0.109	0.000
PWP	0.860 [f]	0.740	0.026	3.186	0.100	0.000
CAA	0.867 [g]	0.752	0.013	2.979	0.089	0.000
AES	0.874 [h]	0.764	0.011	2.916	0.097	0.000
DES	0.878 [i]	0.772	0.008	2.880	0.096	0.000
DCC	0.882 [j]	0.778	0.006	3.107	0.102	0.000
SCF	0.885 [k]	0.783	0.005	2.606	0.082	0.000
PNS	0.886 [l]	0.786	0.003	1.425	0.044	0.000
CEE	0.888 [m]	0.788	0.002	1.378	0.042	0.000
PPS	0.888 [n]	0.789	0.001	1.331	0.044	0.000
SCF	0.889 [o]	0.790	0.000	1.209	0.035	0.001
SPI	0.889 [p]	0.790	0.000	0.976	0.031	0.002
PPS	0.889 [q]	0.790	0.000	0.871	0.026	0.023
(F=1036.409, Sig.<0.05)						

Table 4 Definition of Variables in the Analysis of the Factors Influencing Housing Satisfaction across the Residential Densities in Ogun State

Variables	Definitions
Dependent = Housing Satisfaction	Satisfaction = 1, Otherwise = 0
Independent (Predictors)	
Residential density (RED)	
Social and Physical Environmental Attributes	
Security (SEC)	Satisfactory = 1, Otherwise = 0
Friendliness (NEF)	Satisfactory = 1, Otherwise = 0
Safety (SCF)	Satisfactory = 1, Otherwise = 0
Access to facilities/amenities (FAC)	Satisfactory = 1, Otherwise = 0
Neighbourhood density (DES)	Satisfactory = 1, Otherwise = 0
Proximity to police service (PPS)	Satisfactory = 1, Otherwise = 0
Proximity to medical service (PMS)	Satisfactory = 1, Otherwise = 0
AESTHETICS (AES)	Satisfactory = 1, Otherwise = 0
Proximity to nursery school (PNS)	Satisfactory = 1, Otherwise = 0
Proximity to primary school (PPS)	Satisfactory = 1, Otherwise = 0
Proximity To secondary school (PSS)	Satisfactory = 1, Otherwise = 0
Proximity to work place (PWP)	Satisfactory = 1, Otherwise = 0
Distance to city centre (DCC)	Satisfactory = 1, Otherwise = 0
Social participation and interaction (SPI)	Satisfactory = 1, Otherwise = 0
Community association (COA)	Satisfactory = 1, Otherwise = 0
Community engagement (CEG)	Satisfactory = 1, Otherwise = 0
Community perception (COP)	Satisfactory = 1, Otherwise = 0

CONCLUSION

The study reveals that some of the social and physical environmental attributes identified in the literature are found to correlate with housing satisfaction. The investigation established that there is a positive and solid connection between housing satisfaction and the identified attributes. The

study reveals that the residents' satisfaction with housing is affected by security, residents' community perception, facilities and amenities, the residential density, safety to the community association, and engagement. These findings imply that residents' satisfaction is dependent on the availability and adequacy of any of these social and physical environmental variables and it would have negative or beneficial outcomes on the residents' satisfaction. In housing construction and development, the social and physical environmental attributes must, therefore, be put into consideration while providing housing for the people, be it public or real estate investors. This finding supports Francescato, Weidemann, & Anderson, 2017.

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